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Past and Present Evidence

Editors

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This volume deals with health and social change in different countries and periods of time. The aim is to put every case into its specific context while at the same time give a basis for reflections on patterns that tend to reappear. The hope is that the book can serve as an inspiration for further research, in higher academic education and as an introduction to the theme for those who are engaged in health policy or being mediators of knowledge in a question of importance for contemporary societies. The introduction does not cover all potential aspects, but points at some of these patterns and theoretical pathways towards generalisation. All criticism concerning the conclusions in the introduction should be directed towards the author of this preface, without any shared responsibility by the authors of the case studies. These authors are recruited from different disciplinary milieus, which partly explains the way they tell their stories. A great variation in the availability of specific sets of comparable data and previous research explains why the comparative perspectives must often be based on the synthesis of every narrative rather than on single factors. This is an unavoidable effect of realities, but does not prevent the authors from believing that interesting patterns can be discerned that could stimulate further attempts within the same field.

The idea of producing the volume was born and developed during spontaneous, unplanned discussions with my fellow authors and, in later stages, at two workshops. The decision to start the concrete work was taken at a workshop in Linköping 2002 with colleagues from Sweden, the Czech Republic and South Africa. The brainstorming stage has been highly fertilised by *Daniel Fox*, president of the *Milbank Memorial Fund*. He has participated in workshops and electronic discussions with enthusiasm, stringency and creativity, when identifying the foci of our theme. His foundation, which is communicating results of health research to a wider audience, contributed with financial support to the workshops.

The decision to increase the number of case histories was taken because the theme and questions of the project are central to the activities of PhoenixTN European Thematic Network on Health and Social Welfare Policy. PhoenixTN has since then been engaged financially and actively by several of its members in all

stages, including the printing of the report. The network has been very valuable in helping the project to its end and provides important channels for the dissemination of results to scholars and stakeholders in Europe. The project received financial support from the Bank of Sweden Tercentenary Foundation and the Swedish Research Council. The Swedish National Institute of Public Health, which has a responsibility for the communication of scientific knowledge for policy making and implementation in public health issues, joined us with support and inspiring interest during the final stage of the production process. We are very pleased by this link to practise.

Personally, I am very grateful for all the inspiring and fruitful discussions within a group of scholars from so many disciplinary backgrounds and parts of the world. It has cross-fertilised our understanding of the theme. I am also sending a wholehearted thanks to professor *Laurinda Abreu*, coordinator of PhoenixTN, its scientific board and secretariat. They became an almost daily backup and feedback. Assistant professor *Sam Willner* has been my co-writer of the Swedish case, and partner in logistical matters, both jobs handled with great enthusiasm and forbearance. Senior lecturer *Mickey Chopra* has, besides with working on the South African case, improved the linguistic standards of the texts. He has also made valuable contributions in order to check and suggest improvements of their logical clarity. Our diligent administrative assistants *Yvonne Blixt* and *Maria Antonsson* made many tasks easier and PhD student *Victoria Nygren* helped us to standardise the layout. Research engineer *Peter Berkesand* has, with his usual expedient manners, inserted the files into their complete electronic and paper based versions. Thanks to all of you!

November 2004

Jan Sundin

Introduction: Health and Social Change Past and Present Evidence

Jan Sundin

It is widely recognised that the health of individuals and populations is influenced by more than biological factors. Uncountable contributions from many disciplines have shown that the way a society functions, and the ways in which it changes, affects health positively or negatively. Comparing a selection of historical and contemporary processes of social change with each other in respect to their impacts upon health, is one way to further understand the mechanisms at work. That is the main purpose of this volume.

Before commenting upon the cases and some lessons we may learn from them, a few words need to be said about the two key concepts. '*Social change*' is, in this context, used in its wider sense to include socio-economic, cultural and political changes. Special attention is paid to times and places where these processes have been profound and occur with a certain speed. Attempts are made to identify certain elements within this spectre that are particularly important for health. At the same time the sophisticated interrelationship between different sectors of society must be acknowledged, which sometimes makes it difficult or impossible to estimate the exact weight of single factors. Even so, the authors believe that an analysis of a single case as a "narrative" based on theoretical assumptions about the mechanisms of the process, can provide valuable insights when compared with other narratives with similar ambitions.

When seen in connection with human societies, '*health*' must be defined as something wider than the deviation from biological normality. Good health is necessary for individuals and populations to fulfil reasonable vital goals. Social obstacles to fulfil these goals are not part of health itself but they might directly affect health negatively or, often, make certain pre-existing health problems worse. Refusal to provide support to those who are in greatest need, denying a certain group of people access to basic material and psychological resources, or stigmatising persons with certain health-related problems, are obviously examples of such obstacles. Modern studies, using standard forms to subjectively estimate "self-rated

health", is an example of the growing awareness of the incompleteness of biomedical tests and diagnosis in order to get a more comprehensive picture of the health of a population, especially in connection with theories about social stress and other psycho-social processes.

In quantitative comparison of a large number of cases, the goal is often to measure the likelihood of a certain outcome when one or combinations of independent factors occur. This provides the opportunity to generalise by calculating estimated "risks". Normally, the results are also evaluated in relation to their logical and theoretical credibility and previous results concerning the same question. This method can of course only be used when quantitative data is available, reasonably reliable and valid. None of these conditions are, however, easily fulfilled when the information emanates from different times and different systems of documentation. The number of potentially interacting variables must often be reduced to an extent that limits the possibilities to consider many other explanations. The cases presented in this volume will illustrate this, since the amount and character of available data vary from time to time and place to place. It does not exclude numerical comparisons, but the main goal has been to discuss the findings at a more holistic level, suggesting theoretical interpretations about processes and their links to repeated patterns or unique circumstances strongly influenced by contexts. This constitutes a starting point for the following brief presentation of the case studies as narratives with all their differences but also with similarities.

In *Cornia and Paniccià (eds*), *The Mortality Crisis in Transitional Economies*, cases of rapid social change in today's world are presented, discussed and summarised. Most of them concern former Soviet Union and its satellites in Central Europe. The authors show that the transition from the socialist system to western democracy and market economy, was signified by a, more or less, severe mortality crisis in all countries. This crisis has been halted and reversed in some countries, while it has continued for 15 years in Russia and other parts of former Soviet Union. The timing and other facts suggest that the decline is not primarily caused by cohort effects due to previous sufferings of certain generations, but clearly connected with the events before and after 1989. When summarising the factors that seem to have been strongly correlated to the decline in life expectancy, both similarities and differences are, as expected, found between the countries. Certain social groups have been more vulnerable to change than others, particularly men in their middle ages and among them especially unmarried persons and those who are in less privileged social positions. After a few years, the mortality trend slowed down, stagnated and even changed to the better in some countries, while it remained on a high level in other countries. Socio-economic factors and the stability or lack of stability of the political and social security systems seemed to influence the outcome.

Almost half a decade has passed since that book was published. In this volume *Vladimir Shkolnikov et al.* present results of their own and others updating developments in *Russia*. After a marked improvement during the first two decades after World War II, life expectancy stagnated and, after a while, started to decline slowly. That trend accelerated rapidly after 1989. Albeit with sharp fluctuations, life expectancy has continued to stay at a very low level, particularly among men. Insecure economic development, political instability and a low priority on welfare and health are still factors affecting those who are suffering most from the transition. All social groups tend to have less favourable life expectancy than their counterparts in Western Europe, but those who are at the bottom of the hierarchy economically and educationally suffer more than those who are better off. Middle-aged men still have the highest excess mortality largely contributing to the shortest average life expectancy of men – 59 years. The most striking connection in this group is between alcohol consumption and a number of major causes of death. A long tradition of binge drinking combined with male gender roles in the Russian society, contributes to this effect. According to the authors, unemployment, general insecurity and lack of trust in the political system are psychological factors, which encourage unhealthy drinking habits.

Among women, the greatest disadvantage compared with Western Europe occurs in ages above 60, when many single women are living under great economic constraints. Besides chronic diseases, typical for more affluent societies, infectious diseases are also becoming a growing threat, especially the rapidly growing incidence of HIV/AIDS and tuberculosis. The lack of resources both reduces access to recent technological inventions in medicine, aggravating the number of lethal outcomes of cardiovascular disease, and leads to inadequate resources for preventive and curative measures against infectious diseases. This problem is most evident for poor regions and individuals.

The presentation of the *Czechslovakian/Czech* case by *Petr Svobodný et al.* starts centuries ago and shows how political systems and socio-economic changes influenced health. Different political regimes made their imprints upon the systems, but certain traditions tended to survive. Even several reforms immediately after 1948 realised ambitions expressed during the inter-war Czechoslovak Republic. Having almost reached the western levels in the early 1960's, life expectancy started to lag behind, most clearly observed for men. However, compared with Russia, the 15-year-old Czech Republic suffered from a shorter and less severe mortality increase after 1989. Almost immediately, Czech life expectancy started to rise and continued to do so up to now (2004) - for men even more than for women.

The authors point at several factors that contributed to the positive Czech example: The health system was built on old traditions, blended with a considerable degree of equal access for all during the communist era. Even if it has been reformed and – in certain strategic areas – privatised after 1989, the egalitarian

ideology is still said to be strong among the citizens. Health services have been accessible to all independent of wealth – although private additional service is available for those who can afford it. Investments in the health sector as a percentage of GNP have almost doubled since 1989. That does, of course, not protect certain traditionally vulnerable groups – the unemployed, those who have the least educational and occupational resources or are too old to exploit the new opportunities – from being losers. The manageable size of the Czech nation, compared to the huge Soviet empire, and its sense of unity during the first years of national autonomy helped to create 'the velvet revolution'. With limited economic resources, the public sector tried to maintain a sense of "communality" and solidarity, balancing between market solutions and the protection of vulnerable groups.

During the last decades, the leaders in *China* have watched events in Eastern Europe carefully. Liberalisation of the economy, including privatisations, has been seen as a necessary condition for economic growth. The rapid erosion of the political system and social and economic chaos in Russia has, however, not been an attractive scenario. Basically, the political power remained in the hands of the party, while the economic and social transition accelerated year by year. Economic growth is rapid and the average standard of living has followed the same track. At the same time, *Hong Wang* shows that the process has not taken place without social implications for certain groups. The social security systems, including support to the sick and access to medical care, are no longer guaranteeing basic safety for everybody. Unemployment and withdrawal of social support from employers has left large groups without their previous, albeit limited, help. A stream of people migrates from the poor countryside, where the problems are worst, to the urban areas, where the jobs are created. Some become winners, others lose out.

A new system for social security, based more on private initiatives and solutions, has been implemented instead of the old one, which guaranteed support by the state and local collectives to everybody. Combined with growing individualism, weaker family ties, a weaker sense of collective responsibility for one's kin and less access to social networks, these reforms have increased inequality in access to health and basic welfare. New lifestyles are also contributing to health risks, for instance smoking, consumption of fatty food, sexual liberty and increased risks of being infected by HIV. Non-profitable public health supply has been suffering from the new market economy. The total effects on health from all these changes cannot be evaluated in exact figures. One alarming fact is, however, that infant and child morality has not improved since 1985 and average life expectancy has only risen slightly. In the author's opinion, economic growth and increased literacy has not been followed by the expected improvements in the nation's health, especially in poor regions and vulnerable population groups. His recommendations for future

health policies reflect a belief that institutional change has to accompany social changes in order to accommodate society to the new conditions.

Both Russia and China have recently opened their economies to the rest of the world. The same happened in *South Africa* when apartheid was abandoned and democracy and formal equality was granted to the majority population, symbolised by the first free elections in 1994. The economic and social problems following Freedom Day are rooted in previous times and democracy did not immediately lead to prosperity in previously disadvantaged populations. The starting point of *Mickey Chopra* and *David Sanders* is taken as the globalisation of the economy and free trade when the borders were opened to foreign competitors post 1994. Although an unavoidable event, it has caused domestic re-organisation of industry and agriculture and increasing unemployment especially amongst the unskilled.

Abolition of 'pass laws' opened the doors to mass migration from the countryside "homelands", where the majority population had been forced to live on insufficient means of production and seasonal migratory work. Rural areas have continued to suffer from an unfavourable age structure and split families. Impoverished, inadequately supplied and socially unstable urban suburbs host a flow of immigrants. As a result, economic and other inequalities have remained or even increased between the well to do and the poorest population. The health situation of the latter group remains very difficult. HIV/AIDS, in synergy with TB and other diseases, erodes family structures and robs the future of persons in their productive ages. Drugs and alcohol are painkillers, especially for men in socially uprooted societies, contributing to early deaths and general insecurity. Age-specific mortality data are gradually revealing the differentials between ethnic groups in a still geographically segregated country. AIDS is affecting both men and women and violence and other external causes are exceptionally high among young and middle-aged men. As in Russia, democracy alone is not able to bring immediate prosperity, when economic realities are difficult or even worse than before for the most vulnerable populations. This is unfortunately also true when the regime, as in South Africa, is taking affirmative actions in order to compensate for previous disadvantages. The authors of the case study argue that great efforts need to be made in order to create a policy that enforces the provision of safe and healthy communities and welfare for all.

A question is sometimes raised whether developing countries can learn from the history of the demographic and epidemiological transition that took place in Western Europe during the last two centuries. The authors of the South African case are at least not convinced that their country will automatically follow the historical example. It would, of course, be very naïve to claim that the question could be answered with an unequivocal "yes". But it does not mean that a comparison of the present and the past is completely without interest. The *Swedish* early nineteenth century experience, presented by *Jan Sundin* and *Sam Willner*,

undoubtedly expose patterns that are similar to the ones found in Russia and South Africa today. In all three cases, the transformation changed the social and economic conditions profoundly. Structural changes of the economic and social system meant that old customs and protective systems were no longer adapted to the new situation. Although on a quantitatively smaller scale, new groups of poor immigrants in the cities were facing social destabilisation and problems to make their living in early nineteenth century Sweden too. Kinship and family ties became fewer due to migration and less stable marital unions, which weakened their roles as networks for mutual protection. Persons living as singles and middle-aged men were the losers, socially and in average life expectancy. As in Russia and South Africa drugs such as alcohol were used to dull the pain and disappointment of the new society and its consumption was made easier than before, when informal social control was more lenient or disinterested. Crimes of poverty and violence also increased in all three cases.

It took about two generations before the conditions were visibly improved in Sweden, a point in time that has no yet been reached in Russia or South Africa. In certain respects, Sweden was, however, in a better position. Even if the country did not have the material resources to handle the socio-economic crises, the political system was relatively stable and the local administrations continued to work with unbroken authority and willingness to adapt to the new public health messages. The plagues from infectious diseases decreased, which contributed to the decline of mortality among infants, children and young women. Although producing losers, the proportion was considerably smaller in nineteenth century Sweden than in Russia and South Africa during the recent decades. Problems existed, but on a smaller scale and in a more favourable context.

Reasonable economic resources are a necessary precondition for social welfare and health and economic growth increases the chances for improvements. But is this enough to produce a positive outcome, always, for all and within a reasonable time? In the traditional Swedish agrarian society, the cornerstones of social protection were families, households, villages, craftsmen's guilds and parishes. This protection did not exist for many members of the growing proletariat. During the early phases of population growth without much industrialisation, the national and local elites did not recognise the causes of the changing situation, defining the poor as immoral, undisciplined, causing their own problems and socially dangerous. The winners became more prosperous and were seldom ready to share their wealth with the poor. Manchester liberalism and laissez-faire provided arguments for non-intervention in social affairs, especially during the first half of the century.

Industrialisation gave the working class better conditions in Sweden during the last three decades of the nineteenth century. A difficult problem emerged, when the urban areas could not handle the hygienic problems as fast as immigration created them. This "Klondike" situation was, however, quickly overcome after a couple of

decades. Family structures became more stable, new informal networks and associations created new forms of social safety and trust, which was beneficial for the health and survival of adults and, indirectly, for children. The mortality of both sexes and all age groups went down almost without interruption. But a simultaneous changing attitude among the elites in the local society, who had to take the decisions and pay for sanitary reforms and a minimal support for the poor, was also important.

Simon Szreter demonstrates how industrialisation caused a disruption for the majority population in *Great Britain*. Economic growth alone was not enough to change that situation. Looking on its early modern period, he concludes that the English poor law was actually an effective instrument to provide the population with reasonable security even for the landless rural population, illustrated by an early disappearance of famine mortality. Health and welfare became an engine for economic growth, instead of being only a product of the same growth. Agricultural growth became a precondition for the industrial revolution but, ironically, urbanisation and anonymity of the urban immigrants eroded the poor law system's protective force. The industrial proletariat got little support and turned into objects of social control, as could also be observed in Sweden during the beginning of the nineteenth century. Like in Sweden, "undeserving" poor were sentenced to compulsory work at public institutions.

Before the middle of the century, Edwin Chadwick and others advocated the need for social and sanitary reforms, not just for the poor but also for the society as a whole. As in Sweden during the same period, the effects of such ideas did not materialise immediately. It was in the local societies that things had to improve and their political elites had to agree and act. The mental and social gap between those who had and those who did not have was too big for a policy of mutual trust and support. Only when democracy was successively brought to a wider group of the population, new associations emerged, mobilising and voicing the interests of the less privileged majority of citizens, and new generations entered the leading positions within local governments, did the hygienic revolution speed up during the last decades of the century. The effects on the urban population's health and rates of survival were eminent. Szreter compares the nineteenth century experience with the development during the last decades of the next century, an era of economic and social change making previous social systems less functional and creating new groups of winners and losers. As in early nineteenth century political distrust for collective interventions have emerged.

The *French* case by *Patrice Bourdelais* also covers the late nineteenth-century era of urban public health and "hygienism". The author underlines that the timing, the importance of the local nature of problems and reforms, and the social impacts of the development are key components for the understanding of the process of change. Industrialisation and a rapid influx of migrants to industrial cities caused a

mortality crisis and a decline in life expectancy. It affected most age groups and both sexes, but particularly women and children. There was also a social gradient with the highest mortality figures in the poorest part of the population. The trend was reversed during the last three decades of the century. Mortality declined and life expectancy increased in all groups. This was to a large extent accomplished through a combination of paternalistic interventions from industrialists and a new political regime at the local level. The new political bodies were suspicious of welfare provisions organised by catholic institutions or other private associations. Instead they favoured public interventions with standardised rules for social benefits for all in need. The previous indifference towards poverty, sanitary problems and bad health in the cities by the elite was replaced by social conservatism and social liberalism. It was partly based upon the fear of socialism and radicalism, but undoubtedly for some also caused by a real concern for the humanitarian aspects of the bad conditions. The ideological heritage from Enlightenment and the notion of "citizenship" that had emerged during the French revolution did also have an impact on policies. Some reforms, for instance the supply of water could also be good for economics, giving the companies in charge a nice profit.

In many ways, the early phase of industrialisation in France followed the same road as in England or Sweden although with differences in its timing. A period of crisis, with losers among those with the least resources to handle the transition, was followed by political and ideological change and a more positive attitude towards public interventions and social reform. This was implemented on the local scale with arguments and support from a growing number of professionals, "the social engineers", armed with statistical evidence and recommendations by international experts, gathered at hygienic conferences. Public health was a product of nineteenth century ideologies and scientific ideas within a gradually professionalized state on national and local levels.

There has been a convergence of demographic developments and political engagement in welfare policies on national and local levels in Western Europe during the last 150 years. The timing of the process has, however, varied. On the Iberian peninsula, the organisation of population statistics came later than in the north western parts of the continent and social change has been relatively slow. Data on *Portugal,* presented by *Teresa Rodrigues Veiga et al.*, show that most of the mortality decline in that country did not start until the end of the nineteenth century. Little industrialisation, a slow growth of the economy and a climate that is favourable for certain infectious diseases are some explanations why the mortality decline did not start earlier. In spite of a lesser degree of industrialisation, however, big waves of migrants and urbanisation created serious sanitary and health problems in the cities, familiar to what happened in pre-industrial Sweden during the first half of the same century.

For a long time during the nineteenth century, the organisation of welfare and health in Portugal was still not centralised in the hands of secular public authorities to the same extent as in for instance France. Religious institutions were still responsible for a large part of these duties, which may have provided the State with a reason to pay more attention to colonial matters than its interior affairs. Political instability and periods of autocratic government also contributed to a situation that did not favour mobilisation, at all levels, for the population's health problems. Instead resources focused upon military spending and need to invest in an apparatus for political and social control.

Mortality started to decline in Portugal after 1900, but it was still comparatively high by the middle of the twentieth century. The new political regime during the last quarter of that century coincides with a re-direction of the policy towards a welfare system more similar to the one in other Western European countries. Portugal's integration into the European Union is another potential reason for the remarkable improvement that has taken place economically, socially and demographically. Life expectancy for women is today at the same level as in the rest of the Union, while it lags behind with a few years for men. The case of Portugal needs further investigation and analysis before it is possible to give a more precise explanation for this progress. It does, however, show that rapid social change does not necessarily have to cause a health crisis. The commitment of public institutions to invest in the protection and support of potential losers is, according to all examples in this volume, a way to smoothen the path of transition. If politics can enhance social cohesion, stability and trust in the society, the negative effects may also be less severe.

The last case in this volume consists of a discussion by *Bruce Fetter* about aspects of health and social change in the *United States* since the 1880s – "a mixed system and a mixed blessing" according to the author. Between 1880 and 1930 life expectancy increased rapidly, mainly due to reduced infant and child mortality. US cities were as unhealthy as European ones during the period of heavy in-migration and the urban-rural divide was large at the beginning of the period. The medical profession was, according to Fetter, less well educated than its European colleagues and the main reason for the improvement was public health reforms, particularly improving the cities' infrastructure for water supply, sewerage and waste disposal. The engagement of the federal government and the states in welfare and health supply was very limited compared with Europe but numerous voluntary associations helped to maintain social security for its members. The crisis came during the great depression of the 1930s when unemployed members were unable to pay the fees, paving the way for the Social Security Act of 1935 and the State accepted greater responsibility. The weakness of the system was, consequently, that it worked reasonably well for those who had jobs and could invest in their own health, but less well for the most vulnerable populations. This is clearly seen in the

mortality divide between whites, with the most favourable figures, versus Afro-Americans and Latin-American immigrants. During the early years of the period, the difference was dramatic and it was still there at the end of the period, even if it had become smaller. Overall all groups benefited, but some won more than the others.

Life expectancy has continued to rise in the U.S. during the twentieth century, mainly because of mortality declines in the ages 5 to 50 (later above 50). The ethnic divide between whites and black still exists, especially among male adults. Even average life expectancy of whites is lower than what would have been assumed in the world's wealthiest nation. Wilkinson and others have seen this as a proof that relative inequality in the distribution of wealth, independent of the absolute per capita levels, may be a threat even for the wealthy. A constant health problem still exists in poor uprooted communities, where the social cohesion and political voices are weak. Today, Latin-American immigrants represent a striking contrast. Although they do not belong to the wealthiest part of the population with possibilities to invest in the most sophisticated health care, their mortality equals that of the white population. A selection of the strongest among these migrants and an underestimation of mortality due to the return of the weak to the homelands before dying have been proposed as potential explanations. It is, however, also possible that these groups carry with them stronger traditions of close social networks and family ties that are supportive for their mental and physical health.

The American social security system is, for those who cannot finance it themselves, based on minimum levels, in contrast to many welfare arrangements in Europe. Medicare and Medicaid provides for the solution of this goal with some unattended "white spots". Private solutions remain as the major option for the middle class. North America has, on the one hand, been able to receive an unprecedented flow of immigrants and integrate them successfully in a new affluent society. Private and voluntary solutions have been seen as the first option compared with the European model of public supply of welfare and health. Fetter's perspectives indicate that the system works best for those who are a bit above the level of subsistence, while the access to welfare and health is not yet solved for many descendants of a population once brought there without its own consent.

Hence, certain common themes tend to emerge in the cases histories. First of all, there is, as expected, a close connection between the welfare and material resources of a certain population, or groups within it, and health. However, periods of rapid social change disrupt the equilibrium, including the distribution of these resources, usually to the detriment of those who have the least abilities to adapt to the new socio-economic situation. Even processes that we find positive in the long run may in periods of transition, produce losers. This has been the case in the former socialist states in Eastern and Central Europe and in South Africa during the last decades. Political freedom needs time to establish its institutional frameworks for

social safety. Legacies of a difficult past do not disappear overnight. Adaptations to new economic systems take time and need new solutions. In the meantime, unequal competitive resources among nations and individuals cause painful structural effects. China has consciously taken a more controlled path towards the opening of its country to the new economy, but even there we find winners and losers. The Czech case indicates that possibilities to keep certain safety nets in a reformed version and the preservation of social cohesion during the transition may reduce the transitional costs.

Early nineteenth century Sweden, Great Britain and France faced another transition from the predominantly agrarian ancient regime to an industrialised and urbanised society during the nineteenth century. In all three cases, this did not occur without social problems. In Sweden, industrialisation came later than the proletarianisation of the countryside and the first wave of urban immigration. The national and local government was intact and managed to implement certain improvements for the survival of children and women but uprooted poor families were still exposed to tuberculosis and other infectious diseases. Many middle-aged men did not manage to cope with the uncertainty of life. A second short period of mortality crisis occurred during the fist industrial boom after the middle of the century. Overcrowded areas of migrants were unhealthy places, especially for children and women, like problems that had already occurred half a century before in Great Britain and France. In all three cases the history was similar during the last decades of the nineteenth century: a hygienic movement among medical doctors and public professionals, an increased ideological concern for the improvement of social conditions in the cities based either on fear of socialism or human compassion, technical systems for sanitation and the successive mobilisation of the new industrial classes for their interests and protection. Many roots of the welfare state were planted before the advent of the twentieth century.

This trend was universal in the wealthy parts of the world with certain lags and peculiarities depending on the economic and political situations in different countries. It was a convergence towards the increased involvement of the state and – maybe less recognised – gave a paramount role to local communities in the protection of social security and health. It helped to double the average life expectancy of men and women during the last 100-150 years.

Table 1 compares three very different historical and geographical contexts presented in this book. It summarises empirical patterns of profound social change observed in early 19th century Sweden versus contemporary Russia and South Africa. The Swedish process was mainly initiated and driven by demographic growth and a changing socio-economic system. In Russia and South Africa, the stagnation and crisis started because of political and economic dysfunctions in oppressive states. The negative effects outlived the old systems and even accelerated in some respects. The mortality crisis in Sweden only affected adult men, since the

stability of central government and local administration offered a way to assimilate new ideas about improvements propagated by enlightened pioneers of public health interventions. In Russia many public institutions are still under reconstruction. South Africa's institutional infrastructure was taken over by a democratic government with good will and representing the majority population. Both in Russia and South Africa, these agencies on central and local levels have to struggle with limited financial resources, unemployment, social inequalities, mass migration and the terror of HIV/AIDS (a growing threat in Russia as well) and other infectious diseases.

In all three cases, a mortality crisis occurred among young and middle aged men, maybe the most visible sensitive "thermometer" during periods of rapid social change. Expected to be the primary breadwinners and more exposed to unhealthy lifestyles due to the gender system, they became the vulnerable sex. Women were and are, of course, equally affected by poverty and exposure to infectious disease, but their gender roles tend to act as a protective "vaccine" against certain lethal health risks. The traditional position as caring and forming networks in the closest life circles is said to help them to find positive social capital among kin, neighbours and friends instead of looking for it at pubs or living out their agonies through drugs and serious violence.

However, even women can of course live out their frustration in unhealthy ways and patriarchal power structures can put them in situations they cannot control. The HIV/AIDS epidemic exposes women's lack of control over their own sexuality in patriarchal societies. They are forced into unwanted and unprotected sex within and outside marriage. The weak labour market and total poverty force some women into prostitution although they are aware of the almost certain fate of contracting a mortal disease. The immediate need for survival next day of oneself and one's offspring is paramount to risks that may materialise months or years ahead.

The time horizon for the realisation of vital goals becomes very short for vulnerable groups during rapid social change, which explains behaviours that seem irrational to those who are in better positions to make choices.

Many theoretical perspectives can be applied on the findings. One important aspect would be to try and understand how different resources, essential for health and welfare, are produced and reproduced and how selective mechanisms create winners and losers. Certain patterns are clearly seen - with variations depending on specific epidemiological, economic, cultural and political contexts. First of all, *class differences* made themselves seen in the mortality figures. Further more, transformation of one's way of life from old norms and structures to new circumstances is evidently difficult for young and middle-aged men in many cases. This is confirmed in early nineteenth century Sweden and in Russia and South Africa today. A large part of this surplus mortality is caused by *gender* in the form of male behaviour – excessive drinking, heavy smoking, drug abuse, violence or other

Table 1. Social change in 19th Century Sweden, Russia and South Africa today

Factor	**Early 19th C. Sweden**	**Russia**	**RSA**
Political change	Moderate	Yes	Yes
Economic & Social Change			
Changes in production	Yes	Yes	Yes
Changes in agriculture	Yes	Yes	Yes
De-industrialization	No industrialisation yet	Yes	Yes
Employment crisis	Yes	Yes	Yes
Pauperization	Yes	Yes	Yes
Increased inequality	Yes	Yes	Yes
Welfare provision crisis	Yes	Yes	Yes
Demographic Change			
Population size	Up	->down	->down
Migration to cities	Yes	Yes	Yes
Infant & child mortality	Down	Stable?	->up
Adult female mortality	Down	Up	Up
Adult male mortality	Strongly up	Strongly up	Strongly up
Family/household structure	Crisis	Crisis	Crisis
Epidemiological change			
STD's/HIV	STD's high	Up	Up
Tuberculosis	High	Up	Up
Other infectious diseases	High>down	Low>up	High>?
Health differentials			
By gender	Yes	Yes	Yes
By marital status	Yes	Yes	Yes?
By class/ethnicity/"race"	Yes	Yes	Yes
By region	Yes	Yes	Yes
Urban/rural	Yes	Yes	Yes?
Socio-cultural change			
Uprooted societies	Yes	Yes	Yes
Norm crisis	Yes	Yes	Yes
Social losers`	Yes	Yes	Yes
Abuse of alcohol and drugs	Up	Up	Up
Violence	Up	Up	Up
Juvenile delinquency	Up	Up	Up
Other crimes	Up	Up	Up
Summary			
Political change	Moderate	Yes	Yes
Economic & social change	Yes	Yes	Yes
Demographic change	Yes	Yes	Yes
Epidemiological change	Yes	Yes	Yes
Health differentials	Yes	Yes	Yes
Socio-cultural change	Yes	Yes	Yes

types of risk behaviour. *Sheila Ryan Johansson* talks about '*positive and negative rights*' as two concepts, which can help us to understand how these roles and resources have an impact on health (Johansson 1991). Rights can be seen as privileges: economic, cultural and social resources invested in men or women through gender roles. Positive rights are resources enhancing health. They do, for instance, provide the means to buy clothes, a decent house and food. They are also enhancing the knowledge about healthy and unhealthy food and other substances (narcotics, alcohol and tobacco) and other habits that are a "gift" from one's cultural and social milieu and upbringing. Negative rights can, on the other hand, consist of possibilities to consume too much food or to buy unhealthy drugs. In that sense, gender and health become parts of a complex net in a specific cultural and socio-economic context.

Men usually control larger shares of economic capital than women, either directly as private owners or indirectly through their dominance in economic and political affairs. In spite of that, male surplus mortality has to a great extent been caused by negative gender factors. Male roles and resources invite them to get involved in many risks – wars, automobile accidents and 'rash' lifestyles. Female subordination often reduces their access to food and other material goods, but their roles as the prime caretakers of children and family tend to foster a more careful and healthy lifestyle. In the era of HIV/AIDS, though, the protective effect of such roles is being overwhelmed by gender power imbalances leading to high female levels of infection.

A possible insight into these mechanisms is maybe open by examining the reasons for the particularly high mortality amongst unmarried men. One reason might be *the selective factor*: Just because they suffer from bad health or their behaviour makes them less attractive on the marriage market, certain persons may be unmarried, never married or divorced. That factor might be part of the truth, especially if unhealthy male lifestyles are also correlated with the possibility of being married. Men with alcohol problems or other risky behaviours could, for instance be less successful in finding a willing partner or be left with candidates who share their lenient attitudes towards health. The mortality disadvantage of unmarried persons (especially males) tends to increase from age 20 to age 45, which could be a sign that the least healthy individuals are "left over" on the marriage market. The high mortality of widows and widowers could of course also depend on some negative factor common for both themselves and their partners.

The increasing unmarried/married mortality ratio over age can, however, also depend on the delayed mortality effect of lifestyles that are an effect of being unmarried or emanate from psychosocial problems caused by traumatic experiences of becoming divorced or widows/widowers. *Emile Durkheim*, the father of modern sociology, claimed that marriage strengthens male *social control* and gives them a feeling of *responsibility* as breadwinners and protectors of their families (Durkheim

1991). The marriage ritual signifies a step into a more positive social role and a supportive network. In Durkheim's eyes, the marriage is also providing '*meaning*', a positive goal in life beyond the individual self. Females are already before marriage educated to become the responsible and caring part, more self-controlled and taught practical skills, valuable for the everyday survival. Historical and contemporary studies have also shown that females are often "administrating" the more intimate part of the family's social networks, while men are in charge of the "business side". In times of crisis, women seem to be more trained in finding improvised solutions in collaboration with other women.

Both the selection on the marriage market and the benefice of marriage are plausible and complementary explanations of the low mortality rates for married persons. In many societies, the successful man has to find a woman, have children, protect and support the family. Not living up to that role indicates a lack of social status. That would explain why adult male mortality increases during periods of social change, especially among the non-married with the weakest social networks. They run the risk of compensating by association to subcultures where drug abuse, alcoholism and violence are common. It is therefore logical to expect that the social and medical problems start to become visible at the ages when men are trying to establish themselves on the labour market and become husbands. In urban areas, where social change is often – but not uniquely - manifested in the forms of in-migration, uprooted societies, anonymity, diversity of norms and a choice of more or less healthy lifestyles, some male groups tend to loose out.

A common concept to describe the negative health consequences of social pressure is "*social stress*". It signifies the negative psychosocial effects upon individuals, groups and societies by living through these kinds of pressure. For individuals, it can result in psychological and physiological health problems, reduced capacity to cope with difficulties, frustration, lack of hope for the future, violence, drug abuse, etc. Using Durkheim's term, social and political systems and discourses can be affected by '*anomie*', a negative consequence of change. In former communist Europe after the fall of the Berlin wall in 1989, many respondents feel the pressure of unemployment. They are also expressing a pessimistic view concerning the government's ability to promote better times, neither the political system of the past nor the new regime, squeezed between the need to support the welfare system and the demands to keep a strict public budget in an economy in tough competition on the global market. The result is pessimism caused by forces people feel are outside their influence. Frustration emanating from great hopes for rapid improvement and slow progress may also result in similar feelings in countries like South Africa, even if it is not the name people would normally put on their problems.

Biomedical research has recently become interested in this intriguing connection between social structures, social stress, psychosocial reactions and biological

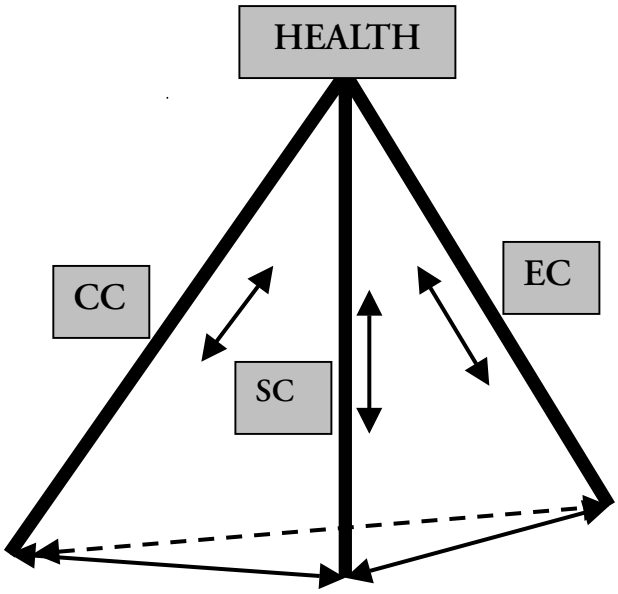
responses, which even leads to serious physiological health problems. We may see it as the link between biography and biology. It is well known that depression affects the immune system negatively, thereby increasing the risk of infections and probably also the risk of diabetes and cancer. Stress has, since long, been seen as one of the causes of gastro-intestinal problems, stroke and different types of cardiovascular diseases among adults. The first signs of a dysfunction may be aggressiveness due to frustration, but in the end vital exhaustion, passiveness and depression emerges, a theory that has been supported by recent studies. The biological link provides us with a reasonable explanation why there is a connection between psychosocial reactions and health risks over a wide scale. The documented risks of drug abuse, alcoholism, frustrated aggressiveness or passive ignorance of normal care of one's own person that are significant for many cases of stress and depression, increase the number of health problems, many of which have been labelled as caused by lifestyles.

Problems of inequity and lack of resources for a healthy life tend to reproduce themselves for long periods from generation to generation. Long after the abolition of slavery, only part of the population with ethnic roots in Africa enjoys the same safe lives as the average North American. *Legacies* of colonialism and apartheid cast their shadows over the majority population in democratic South Africa. These are drastic examples, but "the social heritage" is also having an impact upon other vulnerable populations. The transfer of material resources from generation to generation is of course one of the reasons. Other than purely material factors must, however, also be understood in order to explain the still unsolved issue of inequality and health even in welfare states.

The French sociologist *Pierre Bourdieu* was contemplating the fact that the new generations of wealthy and influential elites were mainly recruited from the same source as the previous ones. His conclusion was that there are, besides with economic resources immaterial resources (capital) that help to produce this result. For Bourdieu, "c*ultural capital*" is "knowledge", even knowledge by doing or "tacit knowledge" provided by upbringing and life experiences. It is knowledge of "how things are or work" in practice or in the dominant perceptions among the people around you or – if you belong to the self-appointed elite – among "the people that matter" in a specific context. In relation to health it can for instance be the obvious advantages of knowing how to feed a child properly or, in general, to have access to the best available information how to protect one's health. Cultural capital is not shaped in individual vacuum. It is provided by formal institutions and family, but also by other informal groups or networks from the cradle to the grave of each individual: voluntary associations, churches, trade unions, political parties, social clubs, neighbours, friends, colleagues at work, and other networks.

This explains why cultural capital is so closely linked to what has been called "*social capital*", Bourdieu's second major concept. Social networks can provide a

Figure 1. Health, economic capital (EC), cultural capital (CC) and social capital (SC)



CC = cultural capital; SC = social capital; EC = economic capital.

feeling of "belonging" (as opposed to isolation), identity, security and therefore also more self-confidence. Shared cultural capital, homogenous norms and beliefs tend to strengthen networks and contribute to mutual trust, a valuable asset for individuals and social coherence. However, it can be hurt, erode and disappear for an individual, for a social group or for a whole society, when the social fabric changes.

In conclusion, the social fabric affects the health of human beings through a process where economic capital, cultural capital and social capital interact with psychosocial and biological mechanisms in a certain epidemiological context. Socio-economic change intervenes in these processes with a capacity to either strengthen or weaken the health of individuals and populations. When putting the different human resources together in a simple model, we have to return to health as the first resource or capital (*Figure 1*). Health is an important – sometimes the most important - resource for the individual. A healthy population is essential for the wealth of families, local communities and nations. Bad health means less productivity and increased expenditure in care and cure independent of who is paying the bill – the individual herself, the family, local community or the state. If health is preserved, work and money can be used for other urgent items, necessary for people's well being.

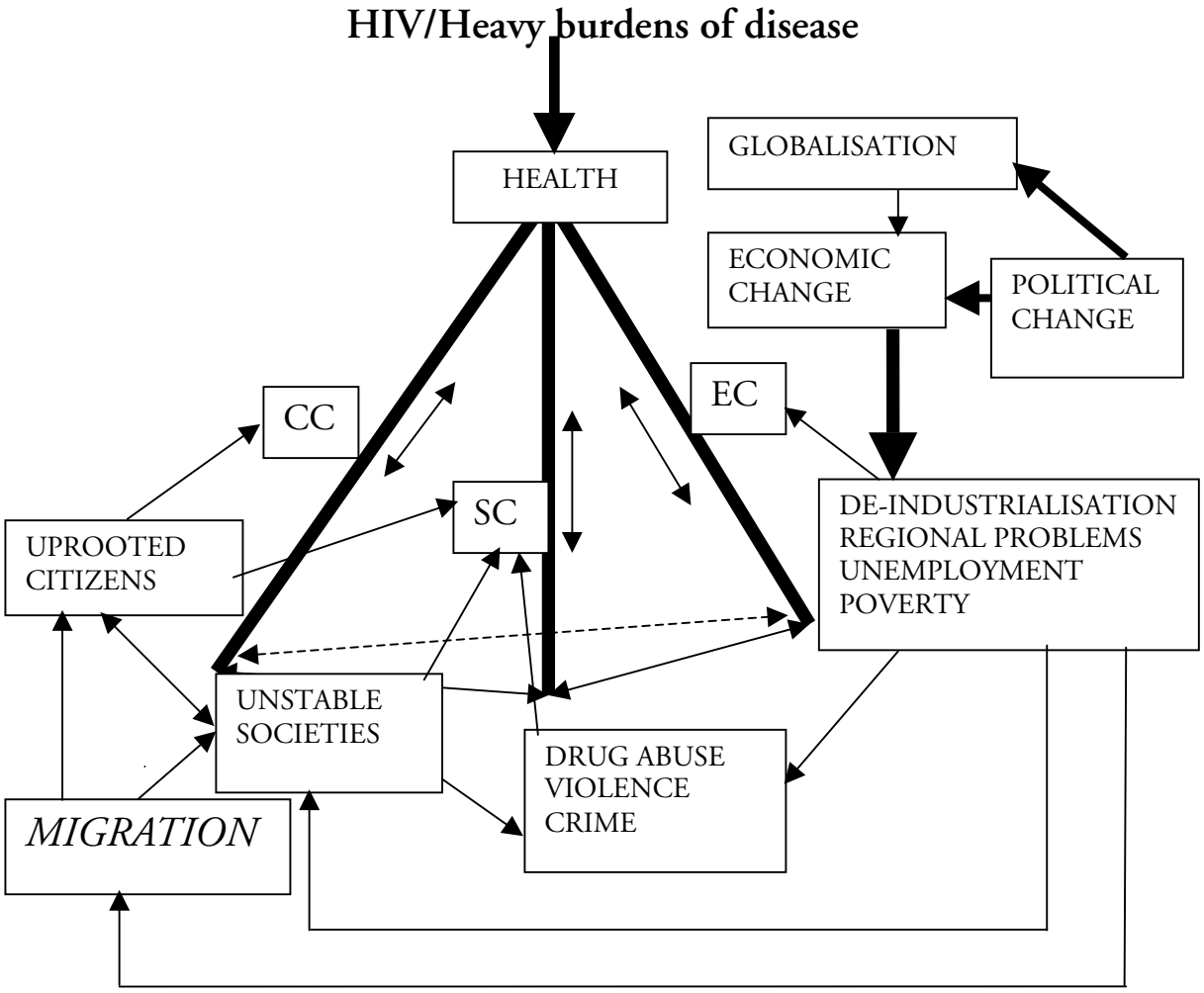
Robert Putnam, an American political scientist*,* turned his attention towards local communities, social networks and their impact on effective political life and a healthy milieu for economic progress. He interpreted the results as proof that social

networks and social capital further trust and a general willingness to collaborate in matters of importance for the local society. Comparing different places in the US, he finds evidence that trust, political participation and even health are positively correlated with the degree of social networking and social capital – in communities and among individuals. Putnam distinguished between two forms of social capital, the first being '*bonding social capital*', characteristic of socially and culturally homogenous groups where the network's first objective is to strengthen the identities and interests of its members. The early modern artisans' guilds in Europe can be used as a typical example of bonding capital, trying to preserve their interests and excluding others from their privileges. Bourdieu's cultural and social capitals can mostly be seen as representations of the 'bonding' typ. There are, however, according to Putnam, other networks, which are creating '*bridging social capital*'. These networks consist of less homogenous groups with limited objects and lesser attachment to specific values, for instance citizens in a local community taking care of the playing ground of their children, a bridge club or a sports club. They increase feelings of mutual belonging to the greater society and create an atmosphere of open-mindedness to other groups, values and ways of living.

One of the contributors to this volume, *Simon Szreter* (Szreter 2003) has pointed at the potential negative effects of bonding capital, for instance organizations aiming at goals of exclusion. He also questions the potential positive strength of bridging social capital, especially if class differences are taken into consideration. Instead, he gives more credit to '*linking social capital*' established by networks, associations and institutions sharing common ideologies. Bonding and bridging social capital work horizontally, while linking social capital is "vertical": Those who have help those who do not have. Politics and public authorities on all levels can participate in linking social capital. In order to be truly beneficial for the whole society, even informal networks and voluntary associations need to act according to an idea of equality and compassion with fellow citizens of different kinds. According to this view, politics and public and private institutions can play a role to create – or undermine – social capital for those who need it, but ideology will be an important part of the process. To conclude, political and voluntary institutions can influence

- The distribution of economic capital
- The forms, quantity and quality and distribution of cultural capital
- The forms, strength and distribution of social capital
- The quantity, quality and distribution of health care and other health services

Figure 2. Health, resources and social change – Russia and South Africa.



CC = cultural capital; SC = social capital; EC = economic capital.

Politics and institutions can, by acting or being passive, to a considerable extent decide the forms and consequences of economic and social change. Linking social capital can therefore have an impact on all parts of the health pyramid. Politics and institutions are tools, accessible and beneficial for different groups and individuals to a lesser or greater extent. It can be used – by legal instruments or in praxis – in order to direct resources (or other forms of capital) in the interest of different groups for more or less altruistic goals.

Figure 2 depicts some important elements affecting people's different types of resources (capital) that will be described in the case studies of dramatic social change in Russia and South Africa. With slight alterations and adjustment of the magnitude, it can also illustrate the situation in Sweden about 200 years ago. The economic, cultural and social capital is endangered for large groups in the society. People themselves and public authorities have problems to keep pace with the process: building houses, providing electricity, water, sewerage, health care, etc.

Consequently, the health situation is in danger. HIV/AIDS, tuberculosis and a generally heavy burden of disease are external epidemiological factors making the situation even more complicated from a health perspective, a progressively growing concern for Russia as well. The loop is complete when deteriorating health reduces the productive strength of present and future generations. Most evidently, this is seen in the growing dependency ratio created by premature deaths from AIDS and dangerous lifestyles.

In the following case stories, the authors fear neither figures nor qualitative entities when composing their accounts. Together they show the ways in which good and bad legacies from the past are setting the scene for the present and the future. As expected, they demonstrate that economic resources are very important for health. But, especially when the economic capital is limited in weak economies, other resources are also essential. Health can be badly hurt or it can be protected, restored or enhanced by the distribution of the society's cultural and social resources. These resources are not automatically distributed in an egalitarian way. Instead they tend to be reproduced from generation to generation within the same privileged groups. Politics and wide grass-root participation in public affairs can empower individuals and vulnerable groups, making it possible for them to get the proper resources in order to fulfil their vital goals. Popular participation, engagement and social coherence have proved to be pivotal for success, especially when activated on the local level. One essential task for central governments is therefore to have the will and knowledge to establish trust and empower local societies so that they can fulfil this role.

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Jan Sundin

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Mortality Reversal in Russia: The story so far

Vladimir M. Shkolnikov, Evgueni M. Andreev,
David A. Leon, Martin McKee,
France Meslé and Jacques Vallin

Care first of the Fatherland
Only then for yourself …
From a popular song of the 1970s by A. Pakhmutova and N. Dobronravov

Introduction

A commentator on population health, viewing the global situation as it was in the early 1970s, could have been forgiven for concluding that the second half of the twentieth century was unfolding as an overwhelming success. Although the world had, relatively recently, experienced a global conflict that had claimed many million lives prematurely, there was much to be optimistic about. Advances in technology were changing many lives for the better. In the area of health care, new drugs, technologies, and ideas were transforming the ability to prevent and treat disease. Many of the common infectious diseases that had taken children from their families were being vanquished and one, smallpox, was on the brink of eradication. Almost everywhere, life expectancy was increasing, in some places faster than at any time in recorded history. Indeed, many commentators were predicting, with confidence, sustained improvements, with the UN Population Division assuming that countries where life expectancy at birth was still under 62 years would experience a gain of 2.5 years in each period of five calendar years, after which the gain would decrease to about two years.[1] They had grounds for confidence as, until then, mortality trends in industrialized countries, as well as in

1 United Nations, *World population prospects as assessed in 1980* (New York, United Nations, 1981), p 3.

Asia, Latin America and Africa, had been remarkably resilient to major events outside wartime[2], even including the Great Depression of 1929–33.

Yet thirty years later it is clear that this optimism was misplaced. It is true that, in most of the world, people are healthier than ever before. Yet in a few places the earlier gains are being reversed.[3] The two greatest examples are sub-Saharan Africa, where infection with HIV has wreaked a horrendous toll, and the countries of the former Soviet Union, where the health gains of the post-war period have been reversed.

This chapter addresses the second of these examples, and in particular the largest successor state of the USSR, the Russian Federation. The experience of Russia during the last three decades represents the most long-standing and well-documented case of mortality reversal, an exception from the global convergence towards a low-mortality regime. Russia and its neighbours in the then USSR, as well as the Soviet satellite states in Eastern Europe (until the 1990s) show how socio-economic, socio-psychological and socio-cultural circumstances can lead to sustained increases in mortality.

The inability of the USSR to improve the health of its population since the mid-1960s was especially surprising in view of its earlier achievements. The communist system had placed a high priority on universal access to albeit basic health care, with a particular emphasis on prevention. In the post-war period it moved quickly to reduce the toll from vaccine preventable diseases. It established primary care facilities throughout a vast, and extremely dispersed, geographical area, using a model that became an inspiration for many other countries following the Alma-Ata conference in 1978. These achievements appeared sustainable; after all, this was the first country to place a satellite, and subsequently a manned spacecraft, in space. During the 1950s, the Soviet economy grew faster than that of any other European country and twofold faster than that of the other superpower, the United States.[4] In the 1950s the Soviet health care strategy leaded to a great success in fight with infectious disease, rapid reduction of infant mortality and increase in life expectancy.[5] Yet there were signs that all was not well as, in the mid-1960s, even as

2 P. Demeny, 'Investment allocation and population growth', *Demography,* 2 (1965), 203–232.

3 G. Caselli, F. Meslé, J. Vallin, 'Epidemiologic transition theory reversals', *Genus,* 58(1) (2002), 9–52; AJ McMichael, M. McKee, V. Shkolnikov, V. Valkonen, 'Mortality trends and setbacks: global convergence or divergence?', *Lancet,* 363 (2004), 1155–9.

4 R. Skidelsy, *The Road from Serfdom: The Economic and Political Consequences of the End of Communism* (New York, Allen Lane, 1995).

5 F. Meslé, J. Vallin, V. Shkolnikov, 'Reversal of mortality decline: the case of contemporary Russia', *World Health Stat Q,* 51 (2000), 191–206; F. Meslé, J. Vallin, V. Hertrich, E. M. Andreev, V. M. Shkolnikov, 'Causes of death in Russia: assessing trends since the 1950s', in

the economy continued to grow (although at somewhat slower pace than it did in the 1950s), the upward trajectory in life expectancy came to a halt. In retrospect the deterioration in health can be seen as the first sign of the crisis facing the Soviet system, providing a warning that preceded that of any of the conventional macroeconomic indicators. Over the following twenty years, mortality continued to increase steadily, interrupted only by a short-lived improvement in 1985–1987, coinciding with Mikhail Gorbachev's wide-ranging anti-alcohol campaign.[6] In the early 1990s deterioration resumed. During the 1990s mortality was predominantly increasing and Russia entered the 21st century with an extremely low life expectancy for an industrialized country: 59 years for men and 72 years for women in 2002.

In summary, therefore, the experience of Russia is in stark contrast with that of many other countries, with the exception, until the early 1990s, of the countries of central and eastern Europe. This has meant that, while in the 1970s, the life expectancy gap between Russia and western countries was about 2–3 years for males and less than one year for females, it has now risen to 15–17 years for males and 7–8 years for females. The recent gains in Czech Republic, Hungary, Poland, Slovakia, and Slovenia have led to the emergence of a new mortality gap in Europe, between Russia and its former Central and Eastern European satellites.[7]

In spite of numerous demographic, epidemiological and public health studies, we still do not fully understand forces behind both chronic health crisis since the mid-1960s and its more acute phase in the 1990s. It is fundamentally important to understand why Soviet society began to fail in the fight with emerging chronic and man-made diseases at the very moment of its maximum economic and military power and what factors were fuelling this process in a way that has had such prolonged effects. It is even more important to understand why now, in an era of new opportunities associated with the market economy, Russia remains so different from countries of Eastern Europe, continuing to fail in the struggle to reduce premature death.

Although many pieces of the jigsaw remain unknown, what is known deserves greater attention. This paper summarizes those studies that we have conducted during the last 15 years as well as drawing on other relevant work. The study documents the mortality reversal in Russia in a systematic way. It begins by examining the principal trends in aggregate indicators of mortality and health since 1970, decomposing them by time period, sex, age, major causes of death and

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Population of Central and Eastern Europe. Challenges and opportunities, Ed by Irena E. Kotowska and Janina Jozwiak (Statistical Publishing Establishment, Warsaw, 2003), pp. 389–414.

6 S. White, *Russia goes dry* (Cambridge, Cambridge University Press, 1995).

7 F. Meslé, 'Mortality in Central and Eastern Europe: long-term trends and recent upturns', *Demographic Research*, 2004, Special Collection 2, Article 3. www.demographic-research.org.

population groups. The second part reviews current explanations for the health crisis in Russia, looking at their strengths and weaknesses. The concluding summary synthesises this evidence.

Trends and Patterns of Mortality and Health Expectancy

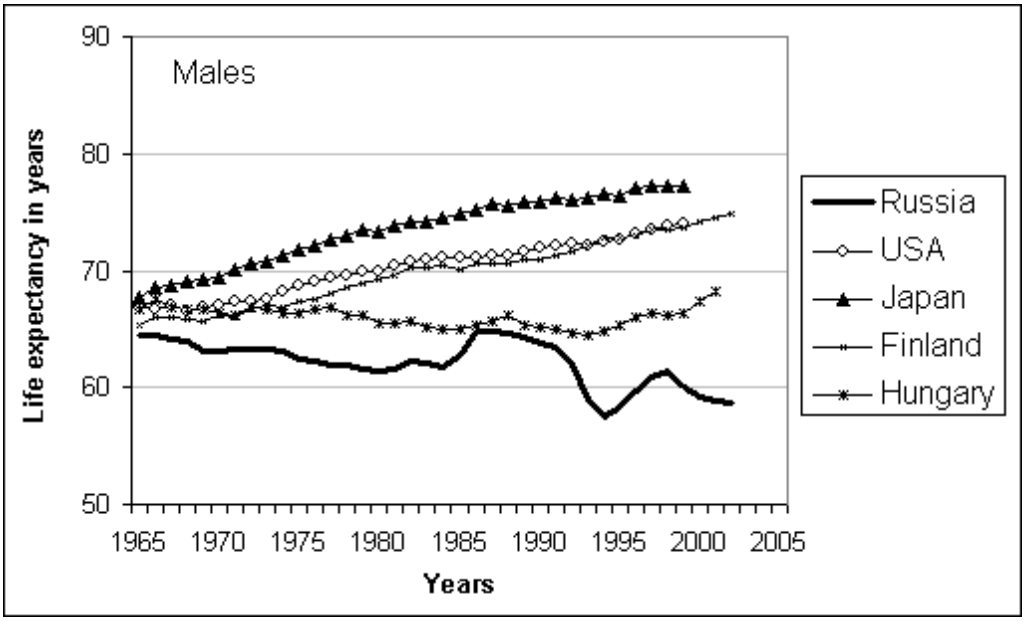
Trends in Life Expectancy

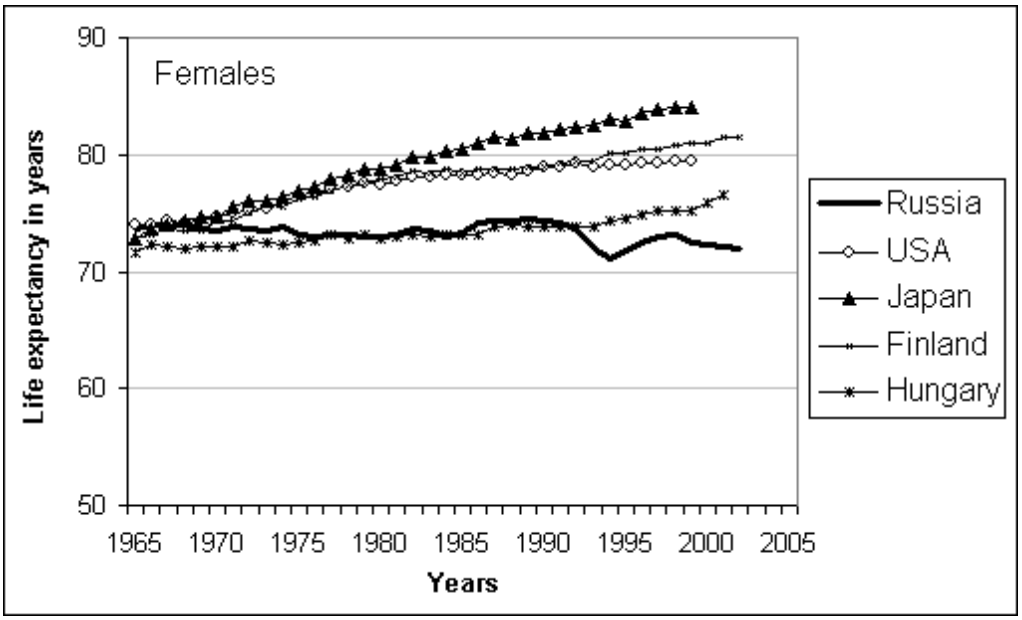
Figure 1 shows life expectancy at birth for men and women since 1970 in Russia and several comparator countries. Male life expectancy in Russia in 1965 was only 1 to 3 years lower than that in Japan, the USA, and Finland. From 1965 to 1984, Russia experienced a steady long-term decline in male life expectancy. This decline was followed by a series of acute fluctuations. First, there was a sudden increase in life expectancy from 1985 to 1987, followed by an equally rapid decline, which accelerated after 1991, reversing briefly between 1994 and 1998 before continuing its downward trajectory. Many associate the sudden improvement in the second half of the 1980s with Mikhail Gorbachev's anti-alcohol campaign launched in May 1985.[8] The sharp mortality increase in the early 1990s coincided with a return to high alcohol consumption and with political and economic collapse of the Soviet state socialist system, followed by an unexpected and massive transformation of the Russian society.[9] In 1995–98 the situation seemingly stabilized, but following the economic crisis of 1998 mortality has continued to increase. Four decades after its upward course was arrested, life expectancy at birth for men has reached 59 years. This is a unique value for an industrialized country in the beginning of the 21st century.

8 F. Meslé, VM. Shkolnikov, J. Vallin, 'Brusque montée des morts violentes en Russie', *Population,* 3 (1994), 780–790; White, (1995); AV. Nemtsov, 'Alcohol-related human losses in Russia in the 1980s and 1990s', *Addiction,* 97 (2002), 1413–1425.

9 A. Avdeev, A. Blum, S. Zakharov, E. Andreev, 'The reactions of a heterogeneous population to pertubation. An interpretative model of mortality trends in Russia', *Population: An English Selection,* 10(2) (1998), 267– 302; D. A. Leon, L. Chenet, V. Shkolnikov, S. Zakharov et al., 'Huge variation in Russian mortality rates 1984–1994. Artefact, alcohol or what?', *Lancet*, 350 (1997), 383–388; V. Shkolnikov, D. Leon, S. Adamets, E. Andreev, A. Deev, 'Educational level and adult mortality in Russia: an analysis of routine data 1979 to 1994', *Soc Sci Med,* 47 (1998), 357–369; V. Shkolnikov, G. A. Cornia, 'Population crisis and rising mortality in transitional Russia', in *The transition's mortality crisis,* eds. Cornia G. A., Paniccià R. (Oxford, Oxford University Press, 2000).

Figure 1. Trends in life expectancy at birth since 1970 in Russia, Finland, Japan, Hungary, Lithuania, and the USA.





Source: Human Mortality Database, 2004.

The trend in life expectancy among women was quite similar to that of men. However, the pace of change was significantly more gradual.[10] Before the 1990s the situation was essentially one of stagnation rather than deterioration. In 2002 life expectancy for women was 72 years, producing one of the widest gender gaps ever recorded anywhere, at 13 years.

10 F. Meslé, J. Vallin, 'Évolution et variations géographiques de la surmortalité masculine Du paradoxe français à la logique russe', *Population*, 53(4–5) (1998), 1079–1102.

The comparator countries each provide important contrasts. Japan is a late beginner in the epidemiological transition. In the 1950s, life expectancy at birth had been almost identical with that in Russia. Yet by the end of the twentieth century its position was the highest in the world due to a continuous and rapid progress in reduction of mortality from infectious diseases in the 1950s–60s and cardiovascular diseases in the 1970s–1990s. Finland was late to enter the major reduction of the cardiovascular mortality. This country started in 1965 from relatively low values of life expectancy at birth. Yet, unlike Russia, it maintained steady progress during the 1970s–1990s. The other superpower, the USA, also maintained steady progress in spite of relatively high levels of mortality from some causes of death such as cardiovascular disease, violence and HIV/AIDS, with the African-American population especially badly affected.[11] The increase in life expectancy in the USA was continuous, but somewhat slower than either in Finland or in Japan. In Hungary, as in Russia, life expectancy was decreasing or stagnating in the 1970s and 1980s, but by the early 1990s it embarked upon what can now be seen to be a sustained upward trend. Finally, Lithuania, a country of the former Soviet Union and a new member of the EU, has always had a slightly higher life expectancy than Russia.[12] It experienced exactly the same steady deterioration in the 1970s and the same mortality fluctuations between the mid-1980s and the early-1990s. However, after a sharp mortality increase in 1991–93 it has experienced a decline in mortality and now seems to be departing from the Soviet mortality pattern.

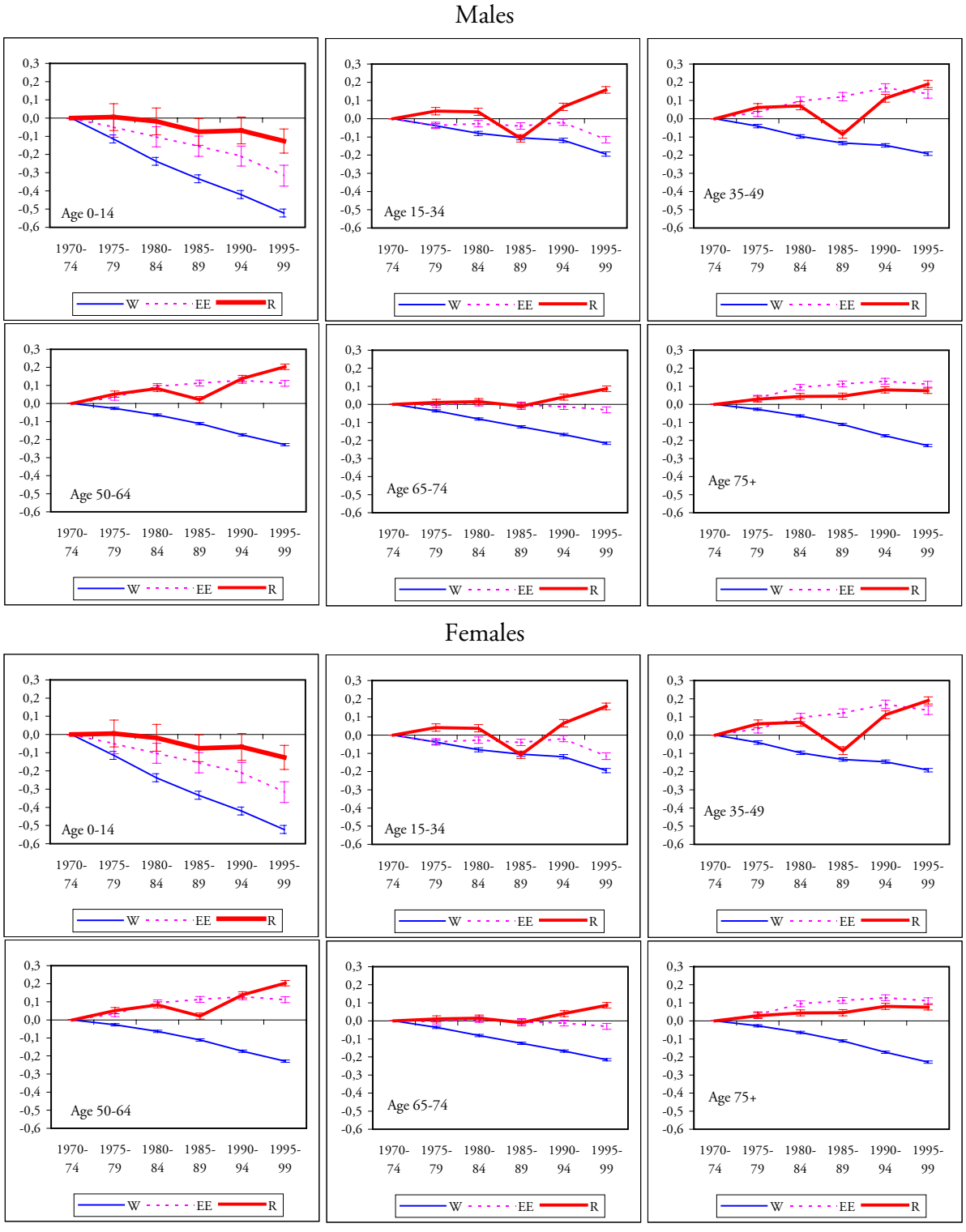
Age Patterns of Mortality

Figure 2 is a result of regression analysis of log-mortality rates on time periods for six age groups: 0–14, 15–34, 35–49, 50–64, 65–74, and 75+. It makes it possible to compare proportional changes in mortality rates at different ages in Russia with those in Eastern Europe (represented by Bulgaria, Czech Republic, and Hungary) and in the West (represented 12 countries of Western Europe plus Canada, Japan, and the USA). At all ages there is a clear contrast between Russia and Eastern Europe on one hand and other developed countries on the other. At age 0–14 mortality is decreasing everywhere, but its decrease in Russia is slower than that in Eastern Europe and much slower than that in the West.

11 K. D. Kochanek, J. D. Maurer, H. M. Rosenberg, 'Why did black life expectancy decline from 1984 through 1989 in the United States?', *Am J Public Health,* 84 (1994), 938–44.

12 Meslé, (2004).

Figure 2. Effects of 5-year calendar periods on logged death rates for six age groups in Russia, Eastern Europe and the West for men and women.



Notes: Coefficient of OLS regressions linking looged death rates for all country-year-age combinations with 5-year calendar periods. "Eastern Europé" includes Bulgaria, Hungary, and Czech Republic. "West" includes Austria, Canada, Denmark, England and Wales, Finland, France, Italy, Japan, the Netherlands, Norway, Spain, Sweden, Switzerland, the USA, and West Germany.

Source: Human Mortality Database, 2004.

Between 1970–74 and 1980–84 Russian men experienced mortality increases at young adult and middle ages, while their Eastern European counterparts experienced mortality increases only at middle ages. Russian and Eastern European men aged 65–74 experienced mortality stagnation and some mortality increase at ages 75+ between 1970–74[13] and 1980–84. In 1985–89 mortality among Russian men dropped substantially at all ages under 75 and then sharply increased in the 1990s to values, with levels 18 to 22 percent higher than that in 1970–74. In the 1990s, mortality among Russian men at ages 65–74 and 75+ also increased significantly, eventually reaching a figure that is about 10 percent higher than in 1970–74. In Eastern Europe, mortality among men shows some signs of improvement in the 1990s.

Among women, mortality in Russia and Eastern Europe generally stagnated between 1970–74 and 1980–84 at all ages except those under 15, where it declines. The positive effects of the anti-alcohol campaign are seen in 1985–89 for Russia at all adult ages under 75 years for men and under 65 years for women. In the 1990s, adverse mortality trends among Russian women at all working and old ages contrast with a very significant downturn in Eastern Europe.

To conclude, since 1970 mortality trends in every age group have reflected the general health crisis in Russia. Although mortality of infants and children has been declining, this decline was slow. Mortality among men has increased in all adult age groups, especially at working ages. Mortality of adult women was stagnating in the 1970s and the 1980s and deteriorated in the 1990s.

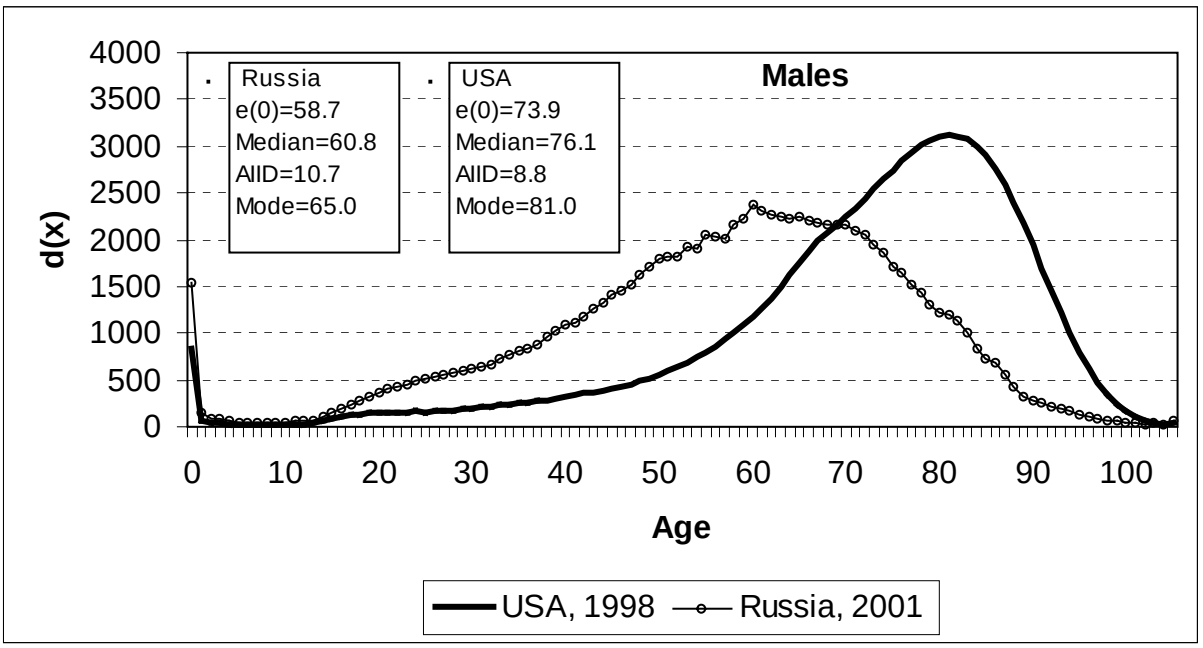
It is notable that the steepest mortality increase was observed among working-aged men. This group appears to be the most affected by the health crisis, while the traditionally vulnerable children and the elderly were less affected.[14] In 2001 the probability that a 20-year old man would survive to age 65 was 44 percent *vs*. about 80 to 90 percent in western countries. In our earlier studies, we showed that mortality among adults had the strongest impact on changes in life expectancy at birth in the 1960s–1990s.[15]

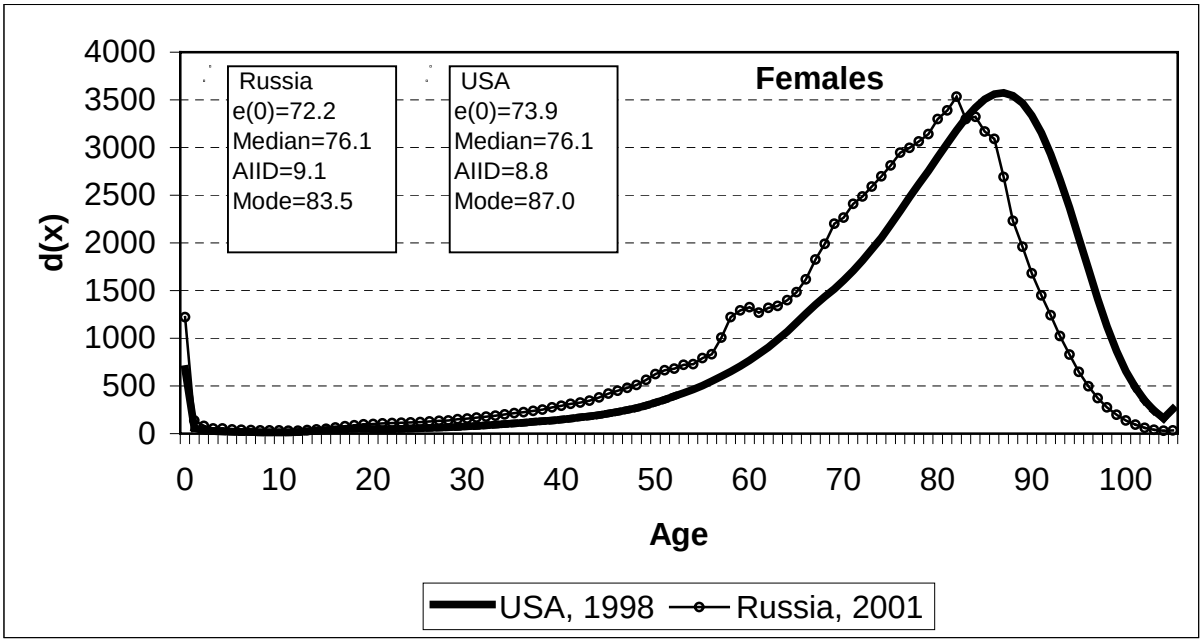
13 In this section analysis begins from 1970 since quality of mortality statistics at advanced ages before 1970 was not high.

14 L. Chen, F. Wittgenstein, E. McKeon, 'The upsurge of mortality in Russia: causes and policy implication', *Pop Dev Rev*, 22 (1996), 517–530; Leon et al. (1997).

15 Meslé et al., (2000); V. M. Shkolnikov, G. A. Cornia, D. A. Leon, F. Meslé, 'Causes of the Russian Mortality Crisis: Evidence and Interpretations', *World Development,* 26 (1998), 1995–2011; V. M. Shkolnikov, F. Meslé, 'Russian epidemiological crisis as mirrored by mortality trends', in *Russia's Demographic "Crisis",* ed. J. DaVanzo (Santa Monica, CA, RAND, 1996), pp.113–162.

Figure 3. Age distributions of the life table deaths for males (upper panel) and females (lower panel) in Russia, 2001 and the USA, 1998.





Source: Our calculations from the *Human Mortality Database*, 2004 data.

Figure 3 compares the age distributions of deaths *d(x)* from period life tables in Russia and the USA. The latter country experiences a relatively high (by western standards) mortality at working ages and has in this sense some similarity with Russia. Figure 3, however, demonstrates a huge difference, favouring the USA over Russia. For men, not only is the average length of life shorter in Russia, but it is also more unequal, as measured by the average inter-individual difference in age of

death (AIID)[16]. The shapes of the distributions are strikingly different. The Russian distribution has much larger tail on the left side, reflecting the large toll of premature death in infancy and, especially, in adulthood. In Russia 60 percent of male deaths occur under the age of 65. In the USA the equivalent proportion is only 25 percent. Thus, many fewer Russian men survive to the age when many of the common fatal diseases of industrialised countries could be expected to become apparent.

Among women, the difference between Russia and the USA is less dramatic since an overwhelming majority of deaths in both populations occur at old ages. However while the two distributions have similar shapes, the Russian situation is still considerably worse, being shifted leftwards by about 4 years compared to the US distribution. Premature deaths of women remain more frequent in Russia, with 25 percent of female deaths occurring under the age of 65 compared with 14 percent in the USA.

Modal age at death is usually considered an expression of the natural life span.[17] A 16-year gap between the Russian and the US men tells that accelerated accumulation of health hazards over the life course leads to earlier aging of the Russian men. For women the Russia-US gap is much smaller.

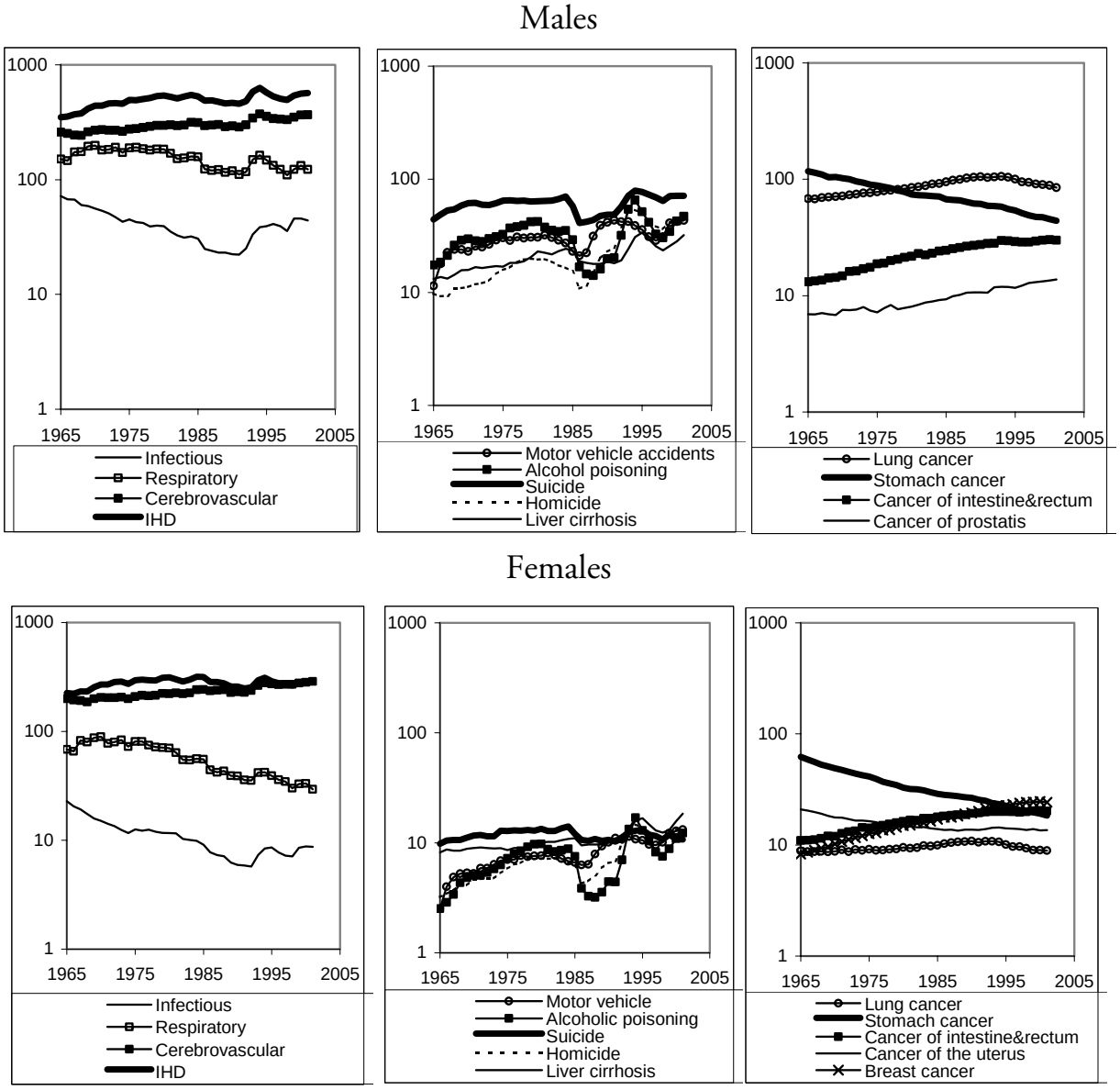
Causes of Death

Figure 4 shows trends in the Russian mortality rates for a selection of 14 causes of death, divided into three groups. The first group of causes represents mortality from the main classes of chronic diseases such as ischaemic heart disease, cerebrovascular disorders, respiratory and infectious diseases. Tuberculosis constitutes over 80 percent of the last of these classes. Mortality from ischaemic heart disease and cerebrovascular disorders generally increase over the whole period, while mortality rates from respiratory and infectious diseases were decreasing until the beginning of the 1990s and then either levelled off (respiratory) or increased (infectious). Although none of these causes traditionally has been thought of as being caused by alcohol consumption, they all demonstrate significant fluctuations coinciding with the anti-alcohol campaign beginning in 1985. The observation that, since the beginning of the anti-alcohol campaign in 1985, trends in mortality

16 AIID=G(0)*e(0), where G(0) denotes the Gini coefficient of inter-individual inequality in age at death and e(0) is the average life expectancy at birth (see Shkolnikov, Andreev, Begun, 2003 for more details).

17 V. Kannisto, 'Measuring the compression of mortality', *Demographic Research*, 2000, volume 3, article 6, www.demographic-research.org.

Figure 4. Age-standardized death rates per 100,000 for a selection of principal causes of death: Russia, 1970–2001.



Note: The WHO European standard of the population age structure was used for standardization.
Source: Updated continuous series of causes of death for Russia (Meslé et al., 1996).

from the major cardiovascular diseases are so closely correlated with trends in violent and alcohol-related mortality is of a fundamental importance and will be discussed later in section 3.

The second group includes violent causes, motor vehicle injuries and causes directly connected with alcohol such as poisoning by alcohol and liver cirrhosis. Mortality rates from these causes also generally increased, experiencing large fluctuations after 1985. The proportional magnitude of these fluctuations is substantially greater than that in the first group of causes of death. The greatest

proportional increase during the 1990s, and indeed over the whole period, is observed with homicide.

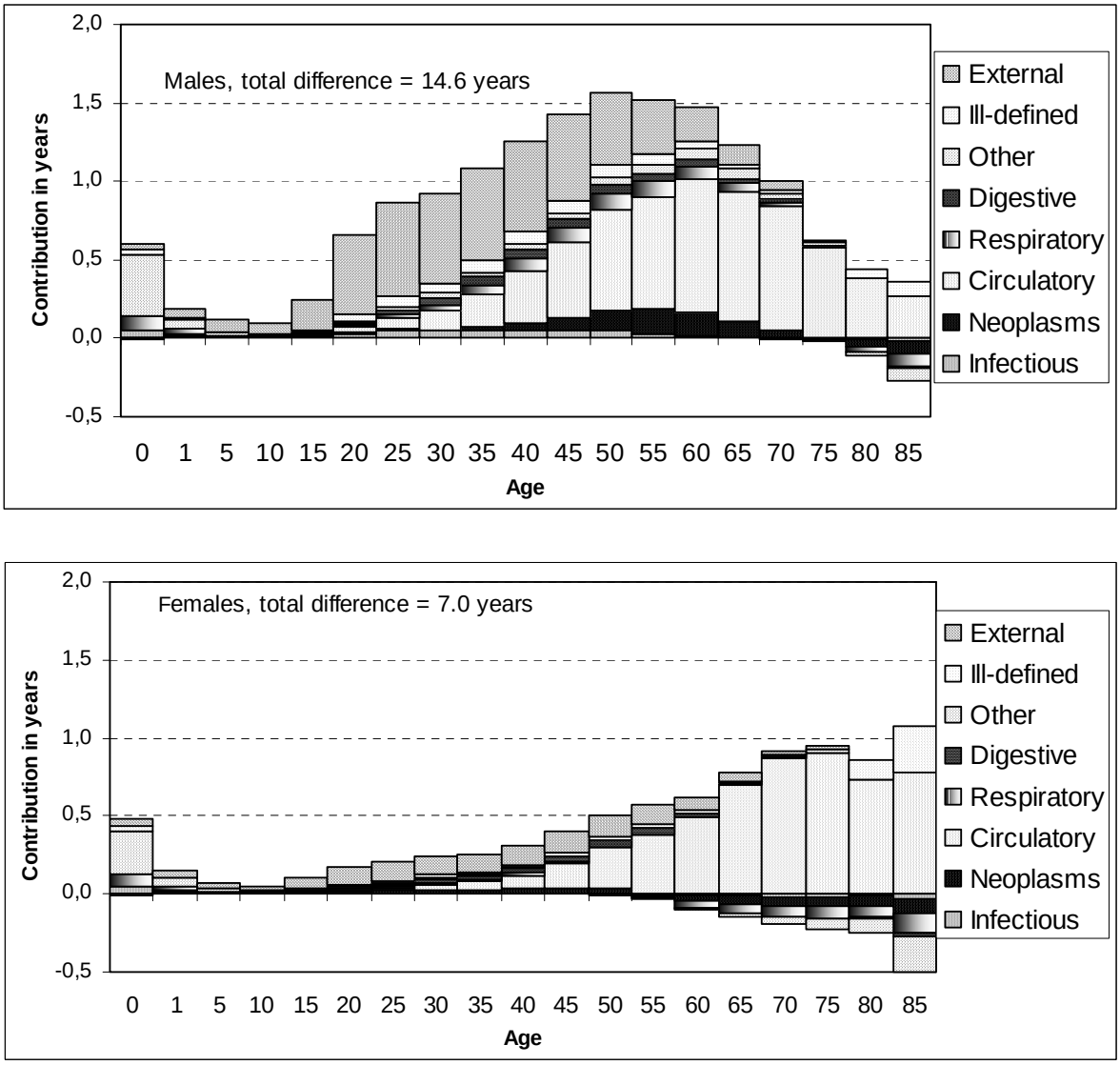
The third group of causes of death consists of cancers at the most frequent sites. They demonstrate long-standing and gradual increases or decreases, with no fluctuations due to period effects. In general, mortality from cancers is driven by biological factors and accumulated behavioural factors, often characterized by long time lags between exposure and illness. Mortality from stomach cancer continuously decreases as does mortality among women from cancer of the uterus, while mortality from cancer of the intestine and rectum, prostate, and female breast increases. Only mortality from cancer of the bronchus and lung, which has been increasing until the 1990s, turns downwards in the 1990s. However this unexpected change can be attributed to changes in the prevalence of smoking between birth cohorts and (perhaps) some problems in registration of causes of death.[18] In general, Russia is characterized by relatively low female mortality from malignancies with an especially large gender gap in mortality from lung cancer.

For many causes of death, mortality trends for women are somewhat less adverse than those for men. One can also note several differences between sexes in relative levels and temporal changes among causes of death. Mortality from ischaemic heart disease in women has increased less than that in men, while mortality from cerebrovascular disorders has increased by about the same in both sexes. Consequently, the initial gap between these two causes has disappeared among women. Mortality from liver cirrhosis and homicide has become relatively more common among women than among men, while mortality from suicide among women has lost its highest position among external causes of death, another difference from men.

Additional comparisons with the USA, a country with a relatively high (by western standards) mortality from external causes, sheds further light on the present cause-of-death pattern in Russia. The first step is to examine the contributions of deaths at different ages and from different causes to the total life expectancy gap between the two countries. Then we will compare actual mortality rates for a more detailed list of causes of death.

18 V. Shkolnikov, M. McKee, D. Leon, L. Chenet, 'Why is the death rate from lung cancer falling in the Russian Federation?', *Eur J. Epidemiol,* 15 (1999), 203–206; V. M. Shkolnikov, M. McKee, J. Vallin, E. Aksel, D. Leon, , L. Chenet, F. Meslé, 'Cancer mortality in Russia and Ukraine: validity, competing risks, and cohort effects', *International Journal of Epidemiology*, 28, (1999), pp. 19–29.

Figure 5. Decomposition of the US-Russia gap in life expectancy by age and major classes of causes of death. (USA, 1999 vs. Russia, 2001).



Source: Our calculations from the original Goskomstat's data for Russia and from the WHO Mortality Database of 2003.

Figure 5 shows that the overall gap for men is almost 15 years, with the greatest contribution being made by differences between mortality rates at ages from 40 to 65 years of age. Excess mortality in Russia from external causes (accidents, poisonings, and violence) plays a crucial role at ages between 20 and 50. At older ages circulatory diseases play a major part. The contribution made by cancers is considerable, but much less significant than those of cardiovascular and external causes. Respiratory diseases and infectious diseases contribute even less.

For women the gap in life expectancy at birth is 7 years and its structure by age and cause-of-death is quite different from that for males. First, the greatest contribution to the overall life expectancy gap is from excess mortality in Russia at ages over 60. Second, cardiovascular diseases play a much greater role, with smaller

Table 1. Age-standardized death rates for a selection of causes of death per 100,000 in Russia, 2001 and in the USA, 1999.

Cause of death	ICD-10 items	Males			Females		
		Russia	USA	Ratio	Russia	USA	Ratio
Major classes							
Total	*AAA*	*2087.8*	*918.6*	*2.3*	*1024.2*	*613.2*	*1.7*
Infectious	A00-A99,B00-B99	42.6	24.9	1.7	8.5	15.0	0.6
Neoplasms	C00-C97,D00-D48	282.4	233.7	1.2	136.9	160.3	0.9
Circulatory	I00-I99	1056.4	346.3	3.1	630.7	230.6	2.7
Respiratory	J00-J99	118.8	85.1	1.4	27.9	57.0	0.5
Digestive	K00-K93	65.8	33.3	2.0	31.0	21.8	1.4
Other	Res	140.1	107.9	1.3	61.9	92.9	0.7
Ill-defined	R00-R94,R96-R99	85.5	8.8	9.7	56.1	6.3	8.9
External	V01-Y89	369.3	78.5	4.7	87.4	29.3	3.0
Selected causes							
Tuberculosis	A15-A19	36.4	0.5	78.3	4.6	0.2	25.0
Cancer, aerodigestive	C00-C15, C32	22.0	14.1	1.6	3.1	3.7	0.9
Cancer, stomach	C16	42.9	5.9	7.2	17.9	2.9	6.2
Cancer, lung	C33-C34	94.7	72.8	1.3	9.6	39.0	0.2
Cancer, intestine, rectum and anus	C17-C18	29.2	23.0	1.3	19.6	16.0	1.2
Cancer, breast	C50	0.4	0.3	1.3	23.7	25.9	0.9
Cancer, uterus	C53-C55	0.0	0.0	-	13.2	6.7	2.0
Cancer, prostatis	C61	13.4	23.9	0.6	0.0	0.0	-
IHD	I21-I25	544.0	209.7	2.6	268.2	118.5	2.3
Cerebrovascular	I60-I69	351.3	49.3	7.1	267.9	45.3	5.9
Liver cirrhosis	K70,K74	28.1	14.1	2.0	14.4	8.4	1.7
Alc. psychosis, poisoning by alcohol	F10, T51	45.5	4.1	11.2	12.0	0.9	12.8
Motor vehicle accidents	V01-V49	41.8	12.0	3.5	12.8	5.4	2.4
Accidental falls	W00-W19	16.1	5.5	3.0	4.1	2.7	1.5
Suicide	X60-X84	69.2	17.8	3.9	10.5	4.1	2.6
Homicide	X85-Y09	44.5	9.4	4.7	13.0	2.9	4.4

Note: The WHO European standard of the population age structure is used for standardization.
Source: Our calculations from the original Goskomstat's data for Russia and from the WHO Mortality Database (2003) for the USA.

contributions from external causes of death. Cancers actually make a negative contribution, being lower in Russia than in the USA.

Table 1 shows in more detail the data on causes of death around the year 2000 with age-standardized death rates for major classes of causes of death and, within them, 16 specific causes. This shows the scale of the excess mortality in Russia across causes of death. Russia clearly combines extremely high mortality from natural and external causes. Mortality from ischaemic heart disease is 2.6 times higher than that in the USA among males and 2.2 times higher among females. The corresponding figures for cerebrovascular disorders are a 7-fold difference among males and a 6-fold difference among females. For stomach cancer the differences are 7-fold among males and 6-fold among females. For suicide, homicide, and motor vehicle accidents the differences are 3 to 4-fold.

Other causes of death, while less significant in terms of the absolute difference in overall mortality, are important because of what they contribute to understanding the nature of the Russian health crisis. Thus, although absolute numbers of death are small compared with, for example, ischaemic heart disease, the large relative differences in mortality from tuberculosis, causes directly related to alcohol, and liver cirrhosis are especially informative. Mortality from cancers of the breast and prostate are higher in the USA than those in Russia. Mortality from lung cancer is higher in Russia than that in the

USA for men and lower for women reflecting the traditionally low prevalence of smoking among the Russian women.[19]

In summary, compared with other industrialised countries, the high mortality in Russia is driven by three principal elements. First, the level of mortality from cardiovascular diseases in Russia is very high and there has not been the sustained decline over recent decades seen in other countries. While the burden of disease is exceptionally high among those of working ages, it is also relatively high among children and older men and women. Second, mortality from external causes, and in particular those associated with alcohol and with violence, is extremely high, pointing to the relationship between mortality, alcohol, and social stress. Third, there is a high mortality rate from causes amenable to health care, such as tuberculosis, hypertension and cerebrovascular diseases, indicating weaknesses of the health care system.

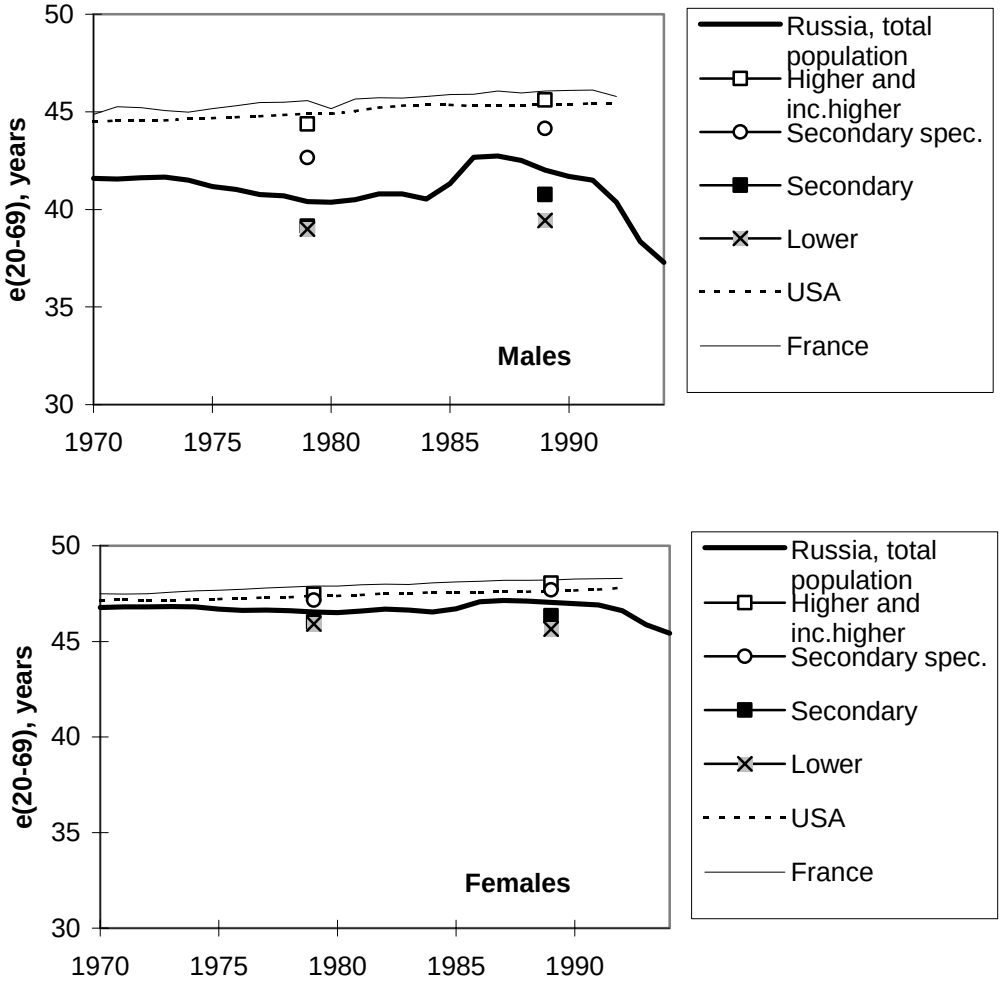
Inequalities in the Face of Death

So far this chapter has looked at aggregate mortality in the Russian population. It showed that great numbers of Russians, especially Russian men, die before reaching old ages. It is reflected by high values of average inter-individual difference in age at death in Russia (see Figure 3). Within this inter-individual inequality, there are significant differentials in mortality between socio-demographic groups, with mortality significantly higher among the single, the least educated and manual workers compared with the married, the highly educated and non-manual workers.[20]

19 M. McKee, M. Bobak, R. Rose, V. Shkolnikov, L. Chenet, D. Leon, 'Patterns of smoking in Russia', *Tobacco Control,* 7 (1998), 22–26.

20 V. M. Shkolnikov, E. M. Andreev, 'Differences by education and character of labor', in *Neravenstvo i smertnost v Rossii,* [*Inequality and Mortality in Russia*] ed. Shkolnikov V. M., Andreev E. M., Maleva T. (Signal, Moscow, 2000), pp. 34–43.

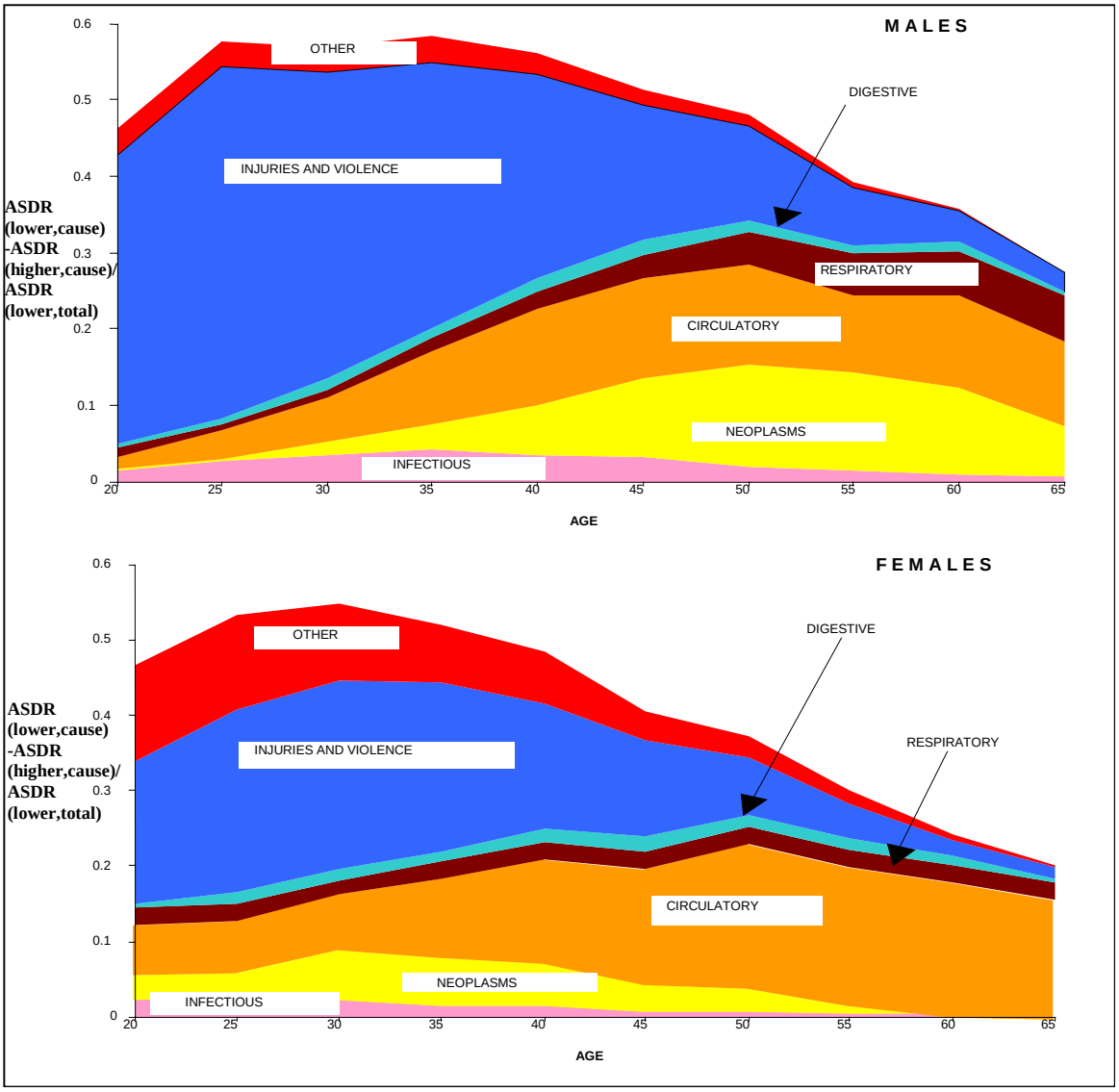
Figure 6. Temporary life expectancy between exact ages 20 and 70 in Russia, France, and the USA: annual figures for the total populations and estimates by educational group for 1979 and 1989.



These inequalities have been longstanding, with a study of mortality at the time of the 1979 and 1989 censuses showing that life expectancy of Russians with university education was similar to the average in western countries while those with the least education very much lower[21] (Figure 6). As in western countries, the education-related differential in mortality is greater for men than for women, it decreases slightly with age, and differs according to cause of death, with educational gradients insignificant or even reversed for some causes, such as cancer of the breast

21 Shkolnikov, Leon et al. (1998).

Figure 7. Proportional differences in age specific death rates between the populations of lower and upper educational classes by cause of death at ages from 20 to 64, 1989.



Notes: Lower educational class corresponds to secondary, incomplete secondary and lower education, upper educational class corresponds to higher (university), incomplete higher and secondarry special education.

Source: Shkolnikov, Leon et al., 1998.

or leukaemia, while being very large for others, such as lung cancer, tuberculosis, external and alcohol-related causes, and cardiovascular diseases.[22]

22 L. Chenet, D. Leon, M. McKee, S. Vassin, 'Deaths from alcohol and violence in Moscow: socio-economic determinants', *Eur J Pop,* 14 (1998), 19–37; Shkolnikov and Andreev, (2000); V. M. Shkolnikov, V. V. Chervyakov, Ed., *Policies for the Control of the Transition's Mortality Crisis in Russia*. Project No RUS/98/G51, UNDP/Russia, Moscow, 2000, 159 p. (In Russian and English languages).

Figure 7 demonstrates that the contribution of deaths from different causes and at different ages to the educational gap in mortality in the Russian population is, in many ways, similar to that driving the gap between Russia and countries with low mortality, with cardiovascular diseases and external causes of death constituting most of the gap, although their relative weights vary by age.

These studies do, however, suffer from the limitation that they combine data on deaths and population from different sources (census self-reporting and post-mortem reporting by relatives) and do not link them for each individual, which could produce numerator-denominator bias in estimates of mortality by population group. This disadvantage of unlinked mortality estimates made it difficult to draw definitive conclusions from the data or to make precise international comparisons. However a more recent study has been able to do this, taking advantage of data from a cohort of approximately 8,000 men from Moscow and St. Petersburg recruited to the Lipid Research Clinics (LRC) study in the mid 1970s, so avoiding the risk of numerator-denominator bias. It was found that the educational gradient in the largest Russian cities is steeper than those in Helsinki or Oslo, from where there were comparable data, both in absolute and relative terms[23] (Tables 2&3). These findings have important implications for research on health inequalities elsewhere as, in Russia, the link between education and income has been quite different from that in the west, with many jobs requiring a high level of education bringing few financial rewards.[24] Importantly, Table 2 also suggests that even the highest educational group in Russia experiences a substantially greater mortality than do equivalent population groups in low-mortality countries.

23 V. M. Shkolnikov, E. M. Andreev, A. Z. Begun, 'Gini coefficient as a life table function: computation from discrete data, decomposition of differences and empirical examples', *Demographic Research*. Vol. 8, article 11, 2003, www.demographic-research.org.

24 H. Domanski, 'Distribution of incomes in Eastern Europe', *International Journal of Comp Sociol,* XXXVIII (1997), 249–270; G. Pirogov, S. Pronin, 'The Russian case: social policy concerns', in *Poverty in Transition and Transition and Transition in Poverty. Recent Developments in Hungary, Bulgaria, Romania, Georgia, Russia and Mongolia,* Ed. Atal Y (New York, Oxford & Paris, UNESCO, Publishing & Bergham Books, 1999); Field M, 'The health crisis in the former Soviet Union: a report from the 'post-war' zone', *Soc Sci Med,* 41 (1995), 23–34; V. M. Shkolnikov, B. A. Rozenfeld, 'Zdravoohraneniye i Krizis Obschestvennogo Zdorovya v Rossii', ['The medical care and health crisis in Russia'] *Komputerniye Tekhnologii v Medicine,* 1 (1997), 18–23.

Table 2. Age-standardized* death rates for the range of ages 40 to 74 by level of education in three male cohorts: LRC (Moscow-St. Petersburg), Helsinki and Oslo (per 100,000 person-years lived between the mid-1970s and the late 1990s).

City	Low	Middle	High	Total
LRC (Moscow-StPb)	2969 (192)**	2019 (151)	1346 (110)	2194/2491*** (82)
Helsinki	1905 (36)	1405 (44)	974 (44)	1614 (24)
Oslo	1731 (48)	1270 (48)	890 (50)	1407 (28)
Ratios to the SDRs of the high education group				
LRC - Russia-StPb	2.2	1.5	1.0	1.6/1.7
Helsinki	2.0	1.4	1.0	1.7
Oslo	1.9	1.4	1.0	1.6
Ratios to the SDRs of Oslo				
LRC - Moscow-StPb	1.7	1.6	1.5	1.4/1.6
Helsinki	1.1	1.1	1.1	1.1
Oslo	1.0	1.0	1.0	1.0

Notes: *European population standard of the WHO is used. **Doubled standard errors are given in brackets. ***Actual value for the LRC cohort / expected value with the all-Russia educational composition.

Source: Shkolnikov, Deev et al, 2003

Table 3. Indices of inequalities based on age-standardized death rates of educational groups and their population weights.

	Index of dissimilarity (ID)		Regression-based indices	
	Relative (%)	Absolute (per 100000)	Relative index of inequality (RII) (times)	Slope index of inequality (SII) (%)
LRC	29.6	636	3.8	2587
LRC with all-Russia educational composition	23.2	583	3.1	2530
Helsinki	20.8	336	2.7	1467
Oslo	21.3	300	2.6	1251

Note: See Shkolnikov, Deev et al, 2003 for details about calculation of indices of inequality.
Source: Shkolnikov, Deev et al, 2003. The indices are described in detail in the original paper.

Finally, there is also evidence suggesting that the striking mortality increase in the 1990s was concentrated among people with low levels of education. Analyses of the

LRC data from both Moscow and St. Petersburg reveals no increase in mortality among men with university education, but a large increase in those with lower levels of education.[25] It suggests that disadvantaged socio-demographic groups made a disproportionately high contribution to the mortality increase in the 1990s and that the current level of mortality in these groups is very high.

It is likely also that the socio-economic changes of the 1990s have resulted in a significant growth of marginalized groups such as people without permanent residence (homeless) or people exposed to the criminal justice system. Mortality in these groups, especially from certain "social" causes of death is likely to be at extremely high levels. Unfortunately, these groups are invisible in general mortality statistics and it is very difficult to reach by any kind of epidemiological study.

Burden of Ill-Health and Health Expectancy

This study has its main focus on mortality. However, mortality data provide only a partial picture of population health and, self-evidently, while past trends provide some indication of future prospects, they only relate to those who are no longer alive. This section provides a brief overview of knowledge about the overall burden of disease in the Russian population.

The pattern of mortality in Russia has certain specific features that complicate extrapolation from findings elsewhere. In particular, a disproportionate share of premature deaths are sudden, whether from injury or cardiovascular disease, from which deaths in Russia are much more likely to be sudden than elsewhere.[26] For this reason, it might be expected that, despite the high death rate, rates of preceding morbidity might be unusually low. On the other hand, research from the early 1990s found that levels of self-rated poor health were much higher in Russia and Eastern Europe than in the west, perhaps reflecting an unknown amount of disabling, but less fatal conditions, such as those due to poor mental health.[27]

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25 S. L. Plavinsky, S. I. Plavinskaya, A. N. Klimov, 'Social factors and increase in mortality in Russia in the 1990s: prospective cohort study', *BMJ,* 326 (2003), 1240–1242; VM Shkolnikov, A. D. Deev, Ø. Kravdal, T. Valkonen, 'Educational differentials in male mortality in Russia and northern Europe. A comparison of an epidemiological cohort from Moscow and St. Petersburg with the male populations of Helsinki and Oslo', *Dem Res*, 2003; 10: Article 1, www.demographic-research.org/.

26 M. McKee, V. Shkolnikov, D. A. Leon, 'Alcohol is implicated in the fluctuations in cardiovascular disease in Russia since the 1980s', *Ann Epidemiology,* 11 (2001), 1–6; D. B. Shestov, A. D. Deev, A. N. Klimov, C. E. Davis, H. A. Tyroler, 'Increased risk of coronary heart disease death in men with low total and low-density Lipoprotein Cholesterol in the Russian lipid research clinics prevalence follow-up study', *Circulation,* 88 (1993), 846–853.

27 P. Carlson,'Self-perceived health in East and West Europe: Another European health divide', *Soc Sci Med,* 46 (1998), 1355–1366.

Clearly it is important to assess the scale of the overall burden of disability and premature death.

Direct use of morbidity statistics is problematic due to various biases related to the nature of these data. They depend on the methods of registration, availability of medical facilities, health seeking behaviour, clinical judgement, and many other factors. However, for certain categories of socially important diseases, there are special systems for registration and surveillance with standardized procedures for data collection. These exist for tuberculosis, sexually transmitted diseases, HIV, and some psychiatric disorders including alcohol and drug dependence. Estimates of incidence of these conditions can also be biased (mostly downward) due to the aforementioned factors, but they deserve serious attention since even existing official data look very worrying. Major concerns relate to steep rises of sexually transmitted diseases, HIV and tuberculosis.

The following data are taken from the section on population health of the 9th annual report "Population of Russia"[28]. According to this source, annual number of patients with newly diagnosed syphilis increased from 5,000 to 278,000 between 1990 and 1997 and then decreased to 144,000. The latter decrease could be partly due to a spread of private medical practices offering anonymous treatment of this disease. In the second half of the 1990s Russia experienced a rapid growth of newly registered HIV cases from 1,500 in 1996 to 88,000 in 2001. In the middle of 2002 the total number of registered patients with HIV in Russia was 208,000. The overall number of deaths from AIDS among registered patients was 2,700. These numbers may reflect a rapid increase in the epidemic, but they are believed to underestimate its level. According to indirect estimates by UNAIDS[29], the number of people with HIV in Russia in 2001 was about 700,000 and the number of deaths due to AIDS about 9,000.

The number of newly registered cases of tuberculosis increased from about 30,000 to about 80,000 between 1990 and 2001. The officially registered incidence of the disease was about 100 (140 for men and 40 for women) per 100,000 in 2001. This level is about 2.5-fold higher than in Hungary, Bulgaria, and Slovakia, about 5-fold higher than in Czech Republic and about 10-fold higher than in Great Britain and the Netherlands.

In Russia both tuberculosis and HIV are concentrated among those of working age, from 15 to 50. However, the major burden of chronic disease and ill-health at

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28 B. B. Prokhorov, E. M. Andreev, V. I. Sakevich, 'Zdorovye', ['Health'] in *Naseleniye Rossii 2001. Devyatiy Ezhegodniy Demografitcheskiy Doklad,* [*Population of Russia 2001. The Ninth Annual Demographic Report*] ed. by. A.G.Vishnevski (INP RAN, Moscow, 2002), pp. 70–98.

29 UNAIDS, 2002. Russian Federation. Epidemiological Facts Sheets on HIV/AIDS and sexually transmitted diseases. 2002 update. Available at http://www.who.int/emc-hiv/fact_sheets/pdfs/Russianfederation_EN.pdf.

middle and old ages remains invisible due to an absence of valid data on morbidity and health. Estimating health from survey data is a good alternative to using unreliable statistics. Such information can be combined with mortality data to yield levels of health expectancy, or the expectancy of being alive and either in good or poor health.[30] We have undertaken this exercise in Russia, comparing it with countries in Western and in Eastern Europe on the basis of surveys of the mid-1990s.[31] The Russian health data were taken from the 1995 wave of the Russian Longitudinal Monitoring Survey[32], while data for Western Europe (Belgium, France, UK, Italy, Spain, West Germany) and for Eastern Europe (Bulgaria, Czech Republic, Hungary, East Germany, Poland) were extracted from the World Value Surveys[33].

Health status was derived from a standard question on self-rated health, which is widely regarded as a valid and reliable measure of health[34], correlating well with other measures of morbidity.[35] We found that the frequency of poor health increases with age much more rapidly in Russia than in Western Europe. For example, 20 percent of Russian men have unhealthy status by age 60–64 and 20 percent of Russian women have unhealthy status by age 50–54. The equivalent quintiles for Western Europe are 85+ and 75–79 years for men and women, respectively.[36]

The values of health expectancy are shown in Table 4. They are very low in Russia in the mid-1990s and there is a large gap between Russia and Eastern Europe on one side and Western Europe on the other with Russia being still worse than Eastern Europe. Importantly, Russian women seem to be carrying especially high burden of ill-health.

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30 J-M. Robine, C. D. Mathers, M. R. Bone, I Romieu, eds., *Calculation of health expectancies: harmonization, consensus achieved and future perspectives* (London, John Libbey Eurotex, 1993); J-M. Robine, I. Romieu, E. Cambois, 'Health expectancy indicators', *Bulletin of the WHO*, 77(2), pp. 181–185, 1999; DF. Sullivan, 'A single index of mortality and morbidity', *HSMHA health report,* 86 (1964), 347–54.

31 E. M. Andreev, E Nolte, V. M. Shkolnikov, E. Varavikova, M. McKee, 'The evolving pattern of avoidable mortality in Russia', *Int J Epidemiol,* 32 (2003), 437–446.

32 RLMS. Russia Longitudinal Monitoring Survey. http://www.cpc.unc.edu/rlms/.

33 World Value Surveys, 2003. World Values Surveys and European Values Surveys 1981–1984, 1990–1993, and 1995–1997. Inter-University Consortium for Political and Social Research. ICPSR No 2790.

34 P. Martikainen, A. Aromaa, M. Heliovaara, T. Klaukka, P. Knekt, J. Maatela, E. Lahelma., 'Reliability of perceived health by sex and age', *Soc Sci Med,* 48 (1999), 1117–22.

35 O. Manor, S. Matthews, C. Power, 'Self-rated health and limiting longstanding illness: inter-relationships with morbidity in early adulthood', *Int J Epidemiol,* 30 (2001), 600–7.

36 Andreev et al., (2003).

Table 4. Life expectancy e(x) and healthy life expectancy h(x)* at different ages: Russia, Eastern and Western Europe (years).

Sex	Country/ Region	At age 20		At age 40		At age 65	
		e(x)	h(x)	e(x)	h(x)	e(x)	h(x)
Males	Russia	41.9	36.7	22.4	17.3	11.4	6.7
	Eastern Europe	49.1	41.9	26.6	20.5	12.7	8.3
	Western Europe	54.5	50.4	31.2	27.6	15.0	12.5
Females	Russia	54.2	40.6	31.1	18.5	15.2	5.8
	Eastern Europe	56.8	44.5	32.8	22.7	15.9	9.3
	Western Europe	60.2	53.7	36.0	30.3	18.1	14.0
Female-male	Russia	12.3	3.9	8.7	1.2	3.9	-0.9
gap	Eastern Europe	7.6	2.6	6.2	2.2	3.3	1.1
	Western Europe	5.7	3.3	4.8	2.7	3.1	1.5

*Health expectancy is calculated by Sullivan's method ((Sullivan, 1964), (Robine et al.;1993)).

Source: Andreev, McKee, Shkolnikov, 2003.

Self-reported health data are subjective by nature. Thus, a note of caution is needed as the possibility that gender-specific cultural features could influence differences in self-reported health.[37] However, our findings suggest that the relative advantage of Russian women in terms of life expectancy is not matched by an advantage in health expectancy. The prevalence of ill-health among older Russian women appears high and so far this has been poorly recognised.

Yet this, in retrospect, should not be surprising, given the ill fortune that contemporary elderly Russian women have accumulated throughout lives that spanned the second world war, illustrated by the observation that older Russian women are three times as likely as men of the same age to live alone and to live in poverty. This evidence supports the argument advanced by Aneshensel et al[38] that adverse life events affect men and women differently, with men reacting to stress with hostility and anger, often accompanied by substance abuse, with fatal consequences, while women are more likely to respond with less frequently fatal affective or anxiety disorders.

37 R. Sadana, C. D. Mathers, A. D. Lopez, C. J. L. Murray, K. Moesgaard-Iburg, 'Comparative analysis of more than 50 household surveys of health status', in *Summary Measures of Population Health: Concepts, Ethics, Measurement and Applications*, editors Murray C.J.L., Salomon J. A., Mathers C. D., Lopez A. D. (Geneva, WHO, 2002), pp. 369–386.

38 C. S. Aneshensel, C. M. Rutter, P. A. Lachenbruch, 'Social structure, stress and mental health: competing conceptual and analytical models', *Am Sociol Rev*, 56 (1991), 166–78.

An explanatory Framework for the Mortality Reversal

The mortality experience of a population is determined by factors acting at several levels. First, there are the immediate causes of death, captured by mortality statistics, such as cardiovascular diseases, cancers and injuries. These have already been discussed in some detail above. Underlying them are a series of proximate risk factors, often referred to as behavioural or lifestyle-related, some of which are well understood, at least in western industrialised countries, where they have been subject to research. However, as has been noted above, they include many factors that are less well understood. Underlying these factors, influencing patterns of exposure to them by, for example, constraining the choices that people can make, include a range of more distal factors, including poverty and inequality. Acting at all levels are a range of factors that fall within a broad psychosocial category, impacting directly on an individual's vulnerability or resilience to health threats as well as their ability to make healthy lifestyle choices. Once disease has occurred, the health care system influenced the outcome for the individual, as modern methods of diagnosis and treatment are increasingly able to prevent premature death. This chapter continues by looking at how these factors have contributed to the pattern of mortality in Russia.

Echoes of the Past

First, it is important to recognise how the health of the people of Russia today partly reflects a mixture of contemporary and historical circumstances, with individuals' health influenced by their accumulated experience throughout life.[39] Most obviously, the enormous toll exacted by the terror in the 1930s, and then by the Second World War[40], means that those now over the age of 60 are a selected group from a larger population. Those who were born or spent their early childhood at certain critical times, such as the famine of 1932–33 and suffering during WWII, have been bequeathed an increase risk of death.[41] A study of the

39 D. A. Leon, 'Common threads: underlying components of inequalities in mortality between and within countries', in *Poverty, Inequality, and Health*, ed. D. A. Leon, G. Walt (Oxford, Oxford University Press, 2001), pp. 58–87.

40 M. Haynes, R. Husan, *A century of state murder: death and policy in twentieth century Russia* (London, Pluto Press, 2003).

41 B. Anderson, B. Silver,'Patterns of the cohort mortality in the Soviet Population', *Pop Dev Rev*, 15 (1989), 471–501.

survivors of the siege of Leningrad found increased blood pressure and a greater risk of cardiovascular death than in those not caught up in the siege.[42]

The link between adverse circumstances in childhood and adult mortality is especially strong for some diseases, such as stomach cancer, which arises following infection with a bacterium, *heliicobacter pylori*, which is most commonly acquired in childhood. However the association between life events and adult mortality can also be seen in the case of lung cancer, mortality from which provides an indicator of historical smoking rates in a population, with a lag between the age of taking up smoking and the maximum death rate being about 40 years. An age-cohort analysis of lung-cancer mortality suggests that smoking rates were high among Russian men reaching adulthood in the post World War II period and especially high among those reaching adulthood during the war[43]. The incidence of breast cancer today can be partly explained by childbearing histories and even *in utero* growth of women.[44] It could be that circumstances in early life or early adult life affect today's levels of prostate cancer.[45]

In summary, an understanding of contemporary mortality in Russia must take account of events and conditions in the past. In particular, generally high level of stomach cancer and its continuous decline, increasing breast cancer and somewhat elevated mortality in cohorts of the early 1930s and 1940s can be at least partly attributed to echoes of the past. However, our prior analyses suggest that these causes of death are not the major components of the high level and unfavourable dynamics of Russian mortality. They can explain only a small part of temporal changes in mortality between the 1960s and 1990s. In particular, they cannot explain the large fluctuations in mortality experienced since the mid-1980s, for which other explanations must be sought. The following sections examine the role of, first, certain behavioural and lifestyle factors, specifically alcohol, tobacco, and poor nutrition, before moving on to look at the psychosocial response to communism and subsequent political and socio-economic transition.

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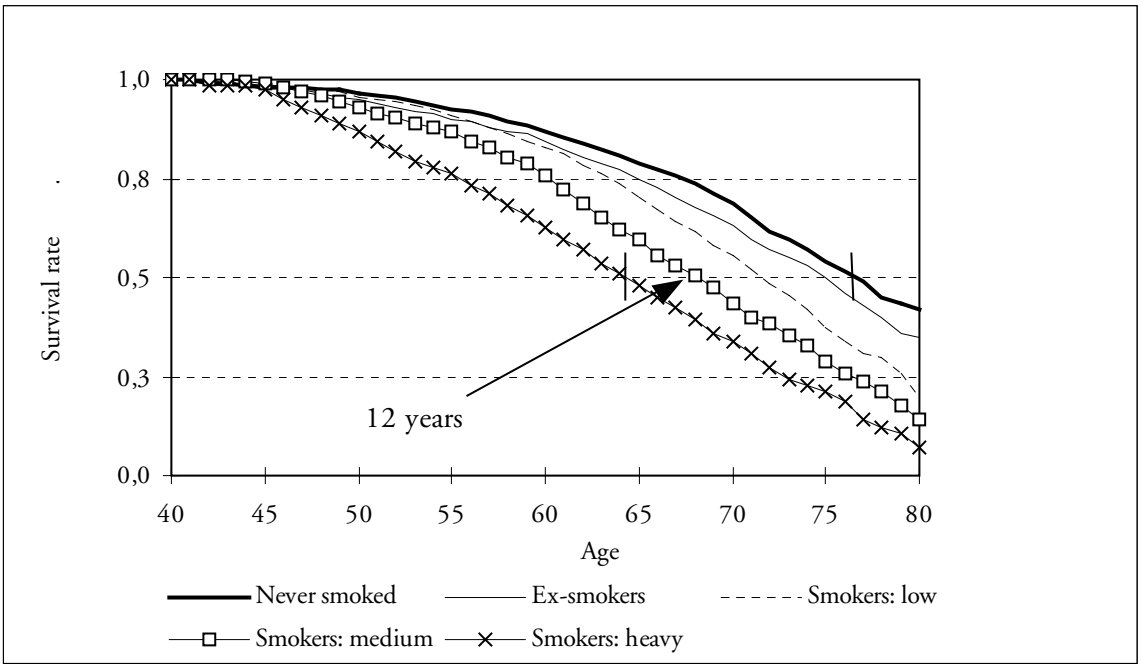
42 P. Sparen, D. Vagero, D. B. Shestov, S. Plavinskaja, N. Parfenova, V. Hoptiar, D. Paturot, M. R. Galanti, 'Long term mortality after severe starvation during the siege of Leningrad: prospective cohort study', *BMJ,* 328 (2004), 11.

43 V. M Shkolnikov, M. McKee, J. Vallin, E. Aksel, D Leon, L. Chenet, F. Meslé, 'Cancer mortality in Russia and Ukraine: validity, competing risks, and cohort effects', *International Journal of Epidemiology*, 28, (1999), pp. 19–29.

44 D. A. Leon, (2001); G. Davey Smith, D. Gunell, Y. Ben-Shlomo, 'Life-course approaches to socio-economic differentials in cause-specific motality', in *Poverty, Inequality, and Health*, ed. D. A. Leon, G. Walt. (Oxford, Oxford University Press, 2001), pp. 88–124; IDS Silva, V. Beral, 'Socioeconomic differences in reproductive behaviour', in *Social Inequalities and Cancer,* eds. Kogevinas M, Pearce N, Susser M, Bofetta P (Agency for Research on Cancer, 1997), pp. 285–308.

45 Leon, (2001).

Figure 8. Cohort survival rate at ages from 40 to 80 by smoking status estimated from the Moscow and St.Petersburg Lipid Research Clinics data.



Note: Low smoking stands for less than 15 cigarettes per day, medium smoking stands for 15 to 19 cigarettes per day, heavy smoking stands for 20+ cigarettes per day.

Source: Deev and Shkolnikov, 2000.

As in all industrialised countries, tobacco is a major cause of premature mortality. In Russia, data from the 1970s-1990s, from the LRC cohort, show that the impact of smoking on survival in Russians is large and entirely consistent with what has been observed elsewhere. Figure 7 shows a 12-year gap in median life expectancy between men who have never smoked and men who smoked 20 or more cigarettes daily. Analysis of relative risks by causes of death in the same cohort shows that (as elsewhere) smoking is associated with lung cancer, ischaemic heart disease and cerebrovascular disorders.[46]

Smoking is widespread among Russian men, with about 55–60 percent of adult men smoking in the 1980s and 90s.[47] During World War II the Soviet authorities made strenuous efforts to ensure that cigarettes, at least, were available to the Red Army, with Stalin issuing an order to the party chief in Abkhazia, a tobacco

46 A. Deev, V. Shkolnikov, 'Neodnorodnost' smertnosti: amaliz individualnikh dannyh', ['Heterogeneity of mortality: analysis of individual-level data'] in *Neravenstvo i Smertnost v Rossii* [*Inequality and Mortality in Russia*], Eds., Shkolnikov V., Andreev E., Maleva T. (Moscow, Carnegie Center, 2000).

47 McKee et al. (1998).

growing area in Georgia, to increase production to supply those on the front line at Stalingrad.[48] As already noted, there is evidence of a cohort effect in lung cancer mortality, reflecting trends in uptake of smoking among young men. This is consistent with the knowledge that, as soon as the war ended, the struggle to rebuild war-damaged infrastructure and to industrialise the USSR took priority over production of consumer goods, including cigarettes. Young men reaching adulthood at this time thus carried with them a lower frequency of smoking. Finally, the situation again reversed in 1953 with the death of Stalin, as Khrushchev redressed the balance in favour of consumer goods and uptake of smoking among a new generation of young men increased.

Existing evidence suggests that smoking has increased during the 1990s in the former Soviet Union and that content of noxious substances in cigarettes is higher than in cigarettes consumed in western countries[49]. In the 1990s Russia's borders were opened to the transnational tobacco companies. They brought aggressive new marketing and distribution methods, paradoxically at a time when smoking rates in the west were falling, linking smoking with images of westernisation.[50] Subsequently they established a manufacturing presence, allowing them to use arguments about employment as a means of influencing tobacco control policies.[51] As a consequence, smoking rates among Russian men rose further, reaching 60–65 percent.[52] However the most important consequence of the influx of western tobacco companies has been the increase in smoking among Russian women, a group whose smoking rates were traditionally low.[53]

Our study on cardiovascular deaths of men aged 20 to 55 found that high prevalence of smoking among Russian men and the associated cardiovascular hazard resulted in a very high population attributable risk of 41 percent.[54] This estimate

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48 S. Seebag-Montefiore, *Stalin. The court of the red Tsar* (London, Weidenfeld & Nicholson, 2003).

49 A. Prokhorov, 'Cigarette smoking and priorities for tobacco control in the Newly Independent States', in *Premature Death in the New Independent States,* eds. J.-L. Bobadilla, C.A.Costello, and Faith Mitchell (National Academy Press, 1997), pp. 275–286.

50 A. Gilmore, M. McKee, 'Moving east: how the transnational tobacco companies gained entry to the emerging markets of the former Soviet Union. Part I: Establishing cigarette imports', *Tobacco Control,* 13 (2004), 143–150.

51 Gilmore and McKee, (2004).

52 N. Zohoori, L. Henderson, K. Gleiter, B. Popkin, *Monitoring Health Conditions in the Russian Federation: The Russia Longitudinal Monitoring Survey 1992–2001*. Report submitted to the U.S. Agency for International Development. (Carolina Population Center, University of North Carolina at Chapell Hill, North Carolina, 2002); McKee, Bobak et al. (1998).

53 A. B. Gilmore, J. Pomerleau, M. McKee, R. Rose, C. W. Haerpfer, D. Rotman, S. Tumanov, 'Prevalence of smoking in eight countries of the former Soviet Union: results from the Living conditions, Lifestyles and Health study', *Am J Publ Health,* (in press).

54 V. M. Shkolnikov, Meslé and Leon, (2002).

corresponds well with the 45 percent estimate by Peto et al.[55]. Smoking could be responsible for a substantial part of high basic level of mortality, but it cannot explain the mortality fluctuations after 1985 and especially the sharp mortality increase in the 1990s. It is actually the reverse since (as we saw) there was some decrease in mortality from lung cancer in the second half of the 1990s.

Alcohol

It is impossible to ignore the impact of alcohol on Russian society, even leaving apart its impact on mortality. Commentators have described the consequences of heavy drinking in Russia since at least the thirteenth century[56]. The reasons why alcohol plays this role are, inevitably, complex. They include climatic conditions, with the major source of sugar for fermentation being grain rather than grapes, leading to a drinking culture based on spirits rather than wine, as well as living conditions that are shaped by long, cold and dark winters in which social interaction is often dominated by heavy drinking. In these respects, Russia is not unique, and populations at the same latitude, such as the Nordic countries in the past have experienced similar problems.[57] However a second set of factors relate to governmental policies on alcohol. In imperial Russia the Tsars held a monopoly on alcohol production and sales, yielding about a third of their total income. There was an obvious disincentive to do anything that would disrupt this flow of revenue. At the same time, alcohol, or more explicitly, drunkenness, was seen as a means of keeping the masses compliant. The situation changed briefly in the period between 1919 to 1926 during the New Economic Programme instituted by the Bolshevik government after the October revolution, when Lenin sought to reduce the supply of alcohol because of its damaging effects on the economy. But the lure of revenue from its sale was too enticing and in 1926 the restrictions were terminated by Stalin, who needed the money to pay for industrialization. Importantly, in a society that produced virtually no consumer goods, it provided one of the very few means of recirculating roubles. By the 1980s, however, when the stagnation of mortality could no longer be ignored, as well as the major negative impact that alcohol was having on economic production through absence from work or inebriation at work, it became necessary to act. The ability to do so arose when Gorbachev emerged as the first secretary of the Communist party, launching his campaigns of glasnost and perestroika together with a wide ranging anti-alcohol campaign, the effects of which have been noted previously.

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55 Peto et al. (1994).

56 M. McKee, 'Alcohol in Russia', *Alcohol Alcoholism,* 34 (1999), 824–829.

57 Wilner, 1999

These historical reasons as well as contemporary socio-psychological conditions, contribute to high alcohol consumption in Russia. At present, official statistics are misleading because of under-recording of sales and illegal production. However estimates derived using a variety of methods suggest that its true level is probably between 12 and 15 litres of pure ethanol per capita per year.[58] It is now widely agreed that alcohol has been especially important in the sharp fluctuations in life expectancy since the middle of the 1980s, with the imposition of the anti-alcohol campaign and its subsequent abandonment.[59]

It is increasingly recognized also that the damaging effects of alcohol consumption in Russia stem not only from the quantity consumed but also the way it is consumed.[60] Unlike, for example, Mediterranean countries, where significant amounts of alcohol are consumed, but in a regular daily pattern, often with meals, in Russia the same weekly amount is more likely to be consumed on a single occasion[61], a pattern that has been termed binge drinking or episodic heavy drinking. Thus, in one study, 31 percent of Russian men admitted to drinking at least 25 cl of vodka at one go at least monthly, and this figure is likely to be an underestimate.[62]

Quite clearly, alcohol is directly and causally involved in a range of causes of death such as acute alcohol poisoning and the chronic effects of alcohol exposure on various organs, including the liver (cirrhosis), the heart (alcoholic cardiomypoathy), the brain (stroke and micro-vascular dementia). However it also predisposes individuals to a much wider range of causes of death. These are, first of all, various types of external causes.[63] Some, such as many types of injury and violence, arise as a consequence of inebriation, with the effects not only limited to those who are drunk but extending to those who come in contact with them. The obvious example is driving while drunk. A study of the very high rate of homicide in Russia found that a very high proportion of both victims and perpetrators were drunk at

58 Nemtsov, (2002); V. Treml, 'Soviet and Russian statistics on alcohol consumption and abuse', in *Premature Death in the New Independent States*, Eds. Bobadilla, J.-L., Costello, C. and Mitchell, F. (Washington DC, National Academy Press, 1997), pp. 220–238; J. Simpura, B. Levin (eds.), *Demystifying Russian Drinking. Comparative Studies from the 1990s.* Research Rep 85. (Helsinki, Gummerus Kirjapaino OY, 1997).

59 Shkolnikov et al. (1998); Avdeev et al. (1998); W. C.. Cockerham, *Health and Social Change in Russia and Eastern Europe* (Routledge, New York, 1999).

60 Treml, (1997); Nemtsov, (2002).

61 P. Carlson, D. Vågerö, 'The social pattern of heavy drinking in Russia during transition: evidence from Taganrog 1993', *Eur J Publ Health,* 8 (1998), 280–285.

62 M. Bobak, M. McKee, R. Rose, M. Marmot, 'Alcohol consumption in a national sample of the Russian population', *Addiction,* 94 (1999), 857–66.

63 Meslé et al. (1994).

the time of the murder.[64] Subsequent work has demonstrated the close geographical association between homicide rates and indicators of heavy alcohol consumption in Russia.[65] However an examination of trends in mortality following the 1985 anti-alcohol campaign suggests that the effects of heavy drinking may be even greater than this, with large fluctuations in deaths from pneumonia occurring simultaneously with those more directly associated with alcohol. This association is plausible, given the risk of aspiration of vomit by those who are drunk, as well as the depressed immune function found in heavy drinkers. The latter effect also contributions to the association between heavy alcohol consumption and tuberculosis.

Earlier we also demonstrated that cardiovascular causes of death exhibited the same fluctuations associated with the anti-alcohol campaign and further sharp changes in alcohol consumption. These observations challenge the conventional view that alcohol consumption is cardioprotective, with one authoritative source arguing that this effect extended to "all levels of consumption".[66] Since then, a systematic review[67] has shown that, while regular moderate consumption does appear to be cardioprotective, at least in the populations in which it has been studied, episodic heavy consumption is likely to be causally associated with cardiovascular death, in particular sudden death among young men. That study also explored the potential mechanisms that could explain this apparent paradox and found that the effects of the two patterns of drinking differ markedly for a range of physiological measures, involving lipid metabolism, blood clotting, and myocardial irritability, with in each case the effect of episodic heavy consumption favouring sudden cardiac death.[68] These findings have led to a reassessment of the role of alcohol in cardiovascular disease, with researchers demonstrating similar effects in other populations where episodic heavy drinking is common.[69] For completeness, it should be noted that a suggestion that this association may be due to misattribution

64 V. V. Chervyakov, V. M. Shkolnikov, W. A. Pridemore, M. McKee, 'The changing nature of murder in Russia', *Soc Sci Med,* 55 (2002), 1713–1724.

65 W. A. Pridemore, 'Vodka and violence: alcohol consumption and homicide rates in Russia', *Am J Public Health,* 92 (2002), 1921–30.

66 C. J. L. Murray, A. D. Lopez (eds)., *The global burden of disease* (Boston MA, WHO, Harvard School of Public Health, World Bank, 1996), pp 307–8.

67 A. Britton, M. McKee, 'The relationship between alcohol and cardiovascular disease in Eastern Europe: explaining the paradox', *J Epidemiol Comm Health,* 54 (2000), 328–332.

68 M. McKee, A. Britton, 'The positive relationship between alcohol and heart disease in eastern Europe: potential physiological mechanisms', *J. R. Soc.Med.*, 91 (1998), 402–7.

69 P. Mäkelä, T. Valkonen, K. Poikolainen, 'Estimated numbers of deaths from coronary heart disease "caused" and "prevented" by alcohol: an example from Finland', *J Studies Alcohol,* 58 (1997), 455–463; C. Evans, J. Chalmers, S. Capewell, A. Redpath, A. Finlayson, J. Boyd, J. Pell, J. McMurray, K. Macintyre, L. Graham, '"I don't like Mondays" day of the week of coronary heart disease deaths in Scotland: study of routinely collected data', *BMJ,* 320 (2000), 218–219.

of sudden deaths actually due to alcohol poisoning does not seem to be the case. In our prior study on this matter, we found elevated levels of alcohol among men, who died from (officially registered) cardiovascular causes at ages from 20 to 55.[70] However, blood concentrations of alcohol were much lower than they should be in cases of alcohol poisoning.

Several important epidemiological studies have failed to explain high cardiovascular mortality in the former Soviet Union and Russia by conventional mechanism of atherosclerosis related to gradual cumulation of hazard due to cholesterol and smoking.[71]

These findings, and the significant fluctuations in cardiovascular mortality during and after the natural experiment of the anti-alcohol campaign, indicate the importance of non-conventional mechanisms of cardiac pathology described by Britton and McKee[72] and probably effects of interactions with additional factors such as psychosocial stress or medical care.

At the same time, there is already a first piece of direct individual-level evidence linking binge drinking with early deaths from cardiovascular diseases. Our recent case-control study of deaths of men aged 20 to 55 in Udmurtyia, revealed two different types of relationship with alcohol for violent and cardiovascular deaths.[73] Risk of death from accidents and violence was associated with any alcohol drinking, whereas the risk of cardiovascular death was associated with heavy doses of alcohol only and did not depend on drinking alcohol as such.

In summary, there is now compelling evidence that alcohol directly and indirectly plays a major role in both the high underlying mortality in Russia and, in particular, the fluctuations that have occurred in the period since the 1980s. Of

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70 V. M . Shkolnikov, M. McKee, V. V. Chervyakov, N. A. Kyrianov., 'Is the link between alcohol and cardiovascular death among young Russian men attributable to misclassification of acute alcohol intoxication? Evidence from the city of Izhevsk', *J Epidemiol Comm Health,* 56 (2002), 171–174.

71 A. M. Vikhert, V. G. Tsiplenkova, N. M. Cherpachenko, 'Alcoholic cardiomyopathy and sudden cardiac death', *J Am Coll Cardiol,* 8 (1986), 3A–11A; E. Ginter, 'Cardiovascular risk factors in the former communist countries. Analysis of 40 European MONICA populations', *Eur J. Epidemiol,* 11 (1995), 199–205; B. H. Dennis, G. S. Zhukovsky, D. B. Shestov, C. E. Davis et al., 'The association of education with coronary heart disease mortality in the USSR Lipid Research Clinics Study', *Int. J. Epidemiol* 22 (1993), 420–427; M. Kristenson, Z. Kucinskiene, 'Possible causes of differences in coronary heart disease mortality between Lithuania and Sweden: the LiVicordia Study', in *Heart Disease: Environment*, *Stress, and Gender,* ed. by G. Weidner, M. Kopp, M. Kristenson. (Amsterdam, IOS Press, 2002), pp. 328–340; M. Averina, O. Nilssen, T. Brenn, J. Brox, A. G. Kalinin, V. L. Arkhipovsky, 'High cardiovascular mortality in Russia cannot be explained by the classical risk factors. The Arkhangelsk Study 2000', *Eur J Epidemiol*, 18 (2003), 871–8.

72 Britton and McKee, (2000).

73 Shkolnikov, Chervyakov et al. (2004).

course, this then raises a further question; why do Russians drink in such a hazardous way? That issue will be returned to later.

Nutrition

As with alcohol, research in the former Soviet Union is providing new perspectives on the role of nutrition in health. The relationship between macronutrient intake and disease is well understood but, as already noted, there is evidence that lipids, perhaps the most extensively studied diet-related risk factor, do not behave in the same way in Russians as in western populations, at least in explaining variations in cardiovascular disease. Nonetheless, there are many reasons to avoid a diet that is high in fat and low in carbohydrates. Yet this is the opposite of the standard Russian diet, in which consumption of bread and potatoes decreased between the 1960s and the late 1980s, while consumption of meat, eggs and diary increased so that, by the end of the 1980s, consumption of fat was 10–15 percent higher than that recommended by the WHO.[74] However, during the 1990s, consumption of more expensive diary and meat products decreased, while consumption of cereals increased. In the mid-1990s the level of energy received from fat was around the norm. Despite increasing impoverishment, there is no evidence of widespread malnutrition.[75] Yet energy intake is only one half of the equation. It is essential to consider overall energy balance, looking at the level of participation in exercise, and thus energy expenditure. What evidence exists suggests that this is very low in the Russian population, contributing to rising levels of obesity.[76]

It is, however, micronutrient intake that has attracted most attention[77], including evidence of a high rate of anaemia among women and children[78] and low consumption of fresh fruits and vegetables. These are increasingly recognised as

74 N. G. Kisseleva, 'Nutrition'. Annex 7.3. in *Inception Report: Preventive Health Care*. Tacis-project, Annexes, Volume II. (Moscow, 1998).

75 B. M. Popkin, N. Zohoori, L. Kohlmeier, A. Baturin, A. Martinchik, A. Deev, 'Nutritional risk factors in the former Soviet Union', in *Premature Death in the New Independent States,* Eds. Bobadilla, J.-L., Costello, C. and Mitchell, F. (Washington DC, National Academy Press, 1997), pp. 314–334.

76 H. Palosuo, I. Zhuravleva, A. Uutela, N. Lakomova, L. Shilova, *Perecived Health, Health-Related Habits and Attitudes in Helsinki and Moscow: A Comparative Study of Adult Populations in 1991.* A10/1995. (Helsinki, National Public Health Institute, 1995).

77 R. Paniccià, 'Transition, impoverishment, and mortality: how large an impact?', in *The mortality crisis in transitional economies*, Ed. by G.A. Cornia, R.Paniccià. (Oxford, Oxford University Press, 2000), pp. 105–126.

78 Prokhorov et al., (2002).

having an essential role in protecting against cardiovascular disease and some cancers.[79]

The Inadequacies of the Health Care System

The issue to be considered is the way in which the Soviet, and subsequently Russian health care system has responded to the principal health challenges of the time.

The creation of the Soviet health care system represented a tremendous achievement. Before the liberation of the serfs in 1861, health care in rural Russia was virtually non-existent. Although a basic system was put in place after 1864 as part of Tsar Alexander II's implementation of the '*zemskii vrach*' system of local government, whose responsibilities included health[80], but even by the end of the nineteenth century the situation in many remote areas was extremely rudimentary.[81]

The Bolsheviks gave a high priority to health, in particular prevention, faced with widespread epidemics of typhus following the civil war. The pre-war Soviet government developed a widespread network of health facilities. This included a hierarchy of hospitals, from the most specialised all-Union facilities in Moscow to small district ones, with only a few beds and the most basic of facilities. A leading role was given to the policlinic, staffed by district physicians *(uchastkovii vrach*), each serving a geographically defined population, typically of 1,700 adults (or 1,200 children), complemented by 'outpatient specialists'. The system was, however, highly fragmented, also having specialised outpatient dispensaries caring for patients with specific diseases (e.g. tuberculosis, oncology, sexually transmitted diseases, mental disorders, and addictions), as well as parallel systems for those in certain occupations, such as the military or the railway system (or the nomenklatura, in the elite facilities of the Fourth Directorate of the Ministry of Health). The Soviet model favoured cities rather than rural areas[82], the parallel systems rather than those providing for the majority of the population, and hospitals rather than primary

79 K. Lock, J. Pomerleau, L. Causer, M. McKee, 'Low fruit and vegetable consumption', in *Comparative Quantification of Health Risks: Global and Regional Burden of Disease Due to Selected Major Risk Factors,* eds. Ezzati M., Lopez A. D., Rodgers A., Murray C. J. L. (Geneva, WHO) (in press).

80 P. Krug, 'The Debate over the Delivery of Health Care in Rural Russia: The Moscow Zemstvo, 1864–1878', *Bull History Med,* 50 (1976), 226–241.

81 A. P. Chekhov, *The island: a journey to Sakhalin* (London, Pimlico, 1987).

82 C. Davis, *The economics of the Soviet health system* (Cambridge, Cambridge University Press, 1979).

care[83] However it did manage to deliver universal access to basic care to an extremely dispersed population.[84]

Yet even in the 1960s weaknesses in the system were already appearing.[85] The health system was funded on the "residual" principle; in other words it received what was left when other needs, such as those of the military-industrial complex, had been met.[86] As other priorities gained more importance, the health system's share of a shrinking economy declined further, from an estimated 6 percent of GDP in the 1960s to 3 percent in the late 1980s.[87] The signs of decline were everywhere. The primary care system, which had been held up by the USSR as an example to the world at the World Health Organization's Alma-Ata conference[88], was increasingly seen as ineffective, unable to respond to the deteriorating health status of the population, with a failure to engage in prevention particularly notable.[89] In the hospital sector, even by 1990 about half of facilities lacked hot water, showers or bathrooms, while 15 percent were without any running water.[90] The situation was especially bad in hospitals and other facilities in rural areas. Salaries of health professionals were about 30 percent lower than the average in the economy as a whole and the skill mix was increasingly out of line with health care elsewhere, with large numbers of low-paid and predominantly female doctors performing very basic tasks because there was nobody else to do them. Nursing was especially poorly developed, with the ratio of nurses to physicians about half of what it was in the west.

At a time when health care in the west was being changed fundamentally by developments in pharmaceuticals and technology, the USSR struggled to keep up. It was unable to develop a modern pharmaceutical industry, depending extensively

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83 M. Ryan, J. Stephen, 'General practitioners and family doctors in the Russian Federation', *Br J Gen Pract,* 46 (1996), 487–9.

84 M. G. Field, *Doctor and Patient in Soviet Russia* (Cambridge, MA, Harvard University Press, 1957).

85 M. G. Field, 'The Soviet legacy: the past as prologue', in *Health care in central Asia*, McKee M., Healy J., Falkingham J. (Buckingham, Open University Press, 2002).

86 E. Mezentseva, N. Rimashevskaya, 'The Soviet country profile: Health of the USSR population in the 70s and 80s. – An approach to a comprehensive analysis', *Social Science and Medicine*, 31 (1990), 867–877.

87 M. Field, 'Postcomunist medicine: morbidity, mortality, and the deteriorating health situation', in *The Social Legacy of Communism*, ed. J. Millarand S. Wollchik. (New York & Cambridge, UK, Woodrow Wilson Center Press and Cambridge University Press, 1994), pp. 178–195.

88 D. Banerji, 'Reflections on the twenty-fifth anniversary of the Alma-Ata Declaration', *Int J Health Serv*, 33 (2003), 813–8.

89 J. B. Wyon, 'Deteriorating health in Russia- a place for community-based approaches (comment)', *Am J Public Health*, 86 (1996), 321–3.

90 B. R. Cassileth, Vlassov V. V., Chapman C. C., 'Health care, medical practice, and medical ethics in Russia today', *Sociol Soc Research,* 76 (1995), 81–84.

on imports from its satellites in Eastern Europe and in the Indian sub-continent. Its problems also stemmed from the failure of Soviet science with its emphasis on ideology rather than empirical evidence.[91] As a consequence, it used many ineffective physical treatments, involving radiation, electricity, light, and magnetism. These had the benefit of being an inexpensive means of appearing to do something useful. Technology that worked was more difficult to acquire, in part because of western regulations on transfer of technology that might have a military application.

It is now clear that, by the 1980s, the outcomes achieved by the Soviet health care system were lagging increasingly far behind the west, especially where modern health care was able to make a difference to mortality.[92] For example, the MONICA study found that Russian outcomes following myocardial infarction were markedly worse than elsewhere.[93] A study of mortality amenable to health care (deaths that should not occur in the presence of effective and timely care) found that, as such deaths steadily declined in western countries from the mid-1960s onwards, they remained resolutely high in Russia and other Soviet republics. In the late 1990s, mortality amenable to health care constituted about one fifth of the Russia-West gap in life expectancy of birth for males and about one quarter for females.[94]

Although, after 1991, some aspects of health care improved, as the opening of borders made it possible, at least in theory, to obtain modern drugs and technology, the economic crisis made them largely unaffordable. By 1994, health care expenditure was 10 percent lower than in 1990.[95] Although the implementation of a new system of health care financing, based on health insurance, was relatively successful, about one in ten Russians remained without cover.[96] However, reform of health care delivery proved more problematic. Although it was now possible to invest in labour-saving technologies and introduce innovative models of care, with patients remaining in the community, the government has been unwilling to

91 N. L. Krementosov, *Stalinist Science* (Princeton NJ, Princeton Univ. Press, 1997).

92 M. G. Field, 'Noble purpose, grand design, flawed execution, mixed results: Soviet socialized medicine after seventy years', *Am J Public Health,* 80 (1990), 144–5.

93 H. Tunstall-Pedoe, K. Kuulasmaa, M. Mahonen et al., 'Contribution of trends in survival and coronary-event rates to changes in coronary heart disease mortality: 10-year results from 37 MONICA Project populations', *Lancet,* 353 (1999), 1547–57.

94 E. M. Andreev, M. McKee, V. M. Shkolnikov, 'Health expectancy in the Russian Federation: a new perspective on the health divide in Europe', *Bull WHO,* 81 (2003), 778–788.

95 C. Davis, 'Economic transition, health production and medical system effectiveness in the former Soviet Union and Eastern Europe'. Paper prepared for the Project Meeting on Economic Shocks, Social Stress and the Demographic Impact, April 17–19 1997, Helsinki; J. Shapiro, 'Russian health care policy and Russian health', in *Russian Political Development* (London, Macmillan, 1997).

96 D. Balabanova, J. Falkingham, M. McKee, 'Winners and losers: The expansion of insurance coverage in Russia in the 1990s', *Am J Publ Health,* 93 (2003), 2124–2130.

provide the necessary funds.[97] As a consequence, the financial situation of health care facilities steadily worsened. This was happening at a time when the demands on the system were increasing[98], with growing level of non-communicable diseases, a resurgence of previously controlled infections, in particular tuberculosis[99], and the appearance of new ones, in particular HIV/AIDS.[100] These new threats are characterised by an unprecedented level of complexity. In the past, when health care had relatively little to offer, the care provided could be basic yet adequate, in comparison with that available elsewhere. Chronic non-communicable diseases, such as diabetes, which affects many different body systems and thus requires the combined efforts of the array of narrow medical specialists that characterise the Russian system, provide a new challenge. So do the complex communicable diseases, exemplified by HIV but also including multi-drug resistant tuberculosis. It is not clear that the Russian system, as presently configured, is in a position to respond to these threats.[101]

One can also look at the Russian medical care situation in the 1990s from a comparative perspective in the context of recent experiences of other transitional countries in Eastern Europe. In particular, detailed analyses by Rychtarikova[102] of components of mortality decrease in the Czech Republic together with changes in health-related behaviours and in medical care, clearly suggest a very important (if not decisive) part played by medical care. The overall mortality decrease was largely due to reduction of cardiovascular death at middle and old ages. It coincided with substantial increase in the health budget from 5 percent in 1990 to 7.4 percent in 2001 and dramatic increases in use of new beta-blockers, calcium channel blockers, lipid lowering drugs and other modern pharmaceutical preparations. There was also a striking growth in invasive cardiac procedures, such as coronary artery by-pass grafts, valve replacements and angioplasties. The author argues that, over this period, lifestyle factors have not changed so much. Smoking and alcohol consumption have slightly increased, while consumption of vegetable oil has partly replaced animal fat. The author concluded that technical progress in health care is

97 *Human Development Report 1995*. Russian Federation. (Oxford, Oxford Univ. Press, 1995).

98 T. H. Tulchinsky, E. A. Varavikova, 'Addressing the epidemiological transition in the former Soviet Union: strategies for health system and public health reform in Russia', *Am J Publ Health,* 86 (1996), 220–238.

99 R. Coker, 'Control of tuberculosis in Russia', *Lancet,* 358 (2001), 434–5.

100 J. A. Kelly, Y. A. Amirkhanian, 'The newest epidemic: a review of HIV/AIDS in Central and Eastern Europe', *Int J STD AIDS,* 14 (2003), 361–71.

101 R. J. Coker, R. A. Atun, M. McKee, 'Health care system frailties and public health control of communicable disease on the European Union's new eastern border', *Lancet,* 363 (2004), 1389–92.

102 J. Rychtarikova, 'The case of Czech Republic. Determinants of the recent favourable turnover in mortality', *Demographic Research*, 2004. Special collection 2, Article 5.

an important cause of the recent mortality decline in the Czech Republic, although this analysis may underestimate the consequences of dietary change.

It seems likely that the situation is similar in other countries, which experienced large mortality downturns in the 1990s such as Hungary, Poland, and Slovenia. In each, mortality reduction was especially significant at ages over 65 and from cardiovascular diseases: The decline ranged from about 20 percent in Hungary to about 40 percent in Slovenia.[103]

Thus, successful Eastern European countries have managed to increase their health care resources and introduce efficient methods of treatment and prevention of cardiovascular disease. This provides a sharp contrast with Russia. In the Czech Republic, Hungary, Poland and Slovenia, health expenditures in 2001 as a percentage of Gross Domestic Product were 7–9 percent *vs*. only 2.9 percent in Russia.[104]

In summary, the Russian health care system, despite its many historical achievements, has failed to keep pace with developments over the past four decades. It was largely due to unwillingness or inability of the government to deliver sufficient resources. It now requires adequate funding sustained over a long period, linked to fundamental reform, if it is to be able to respond to the many challenges it now faces.

Russian Society, the Psychosocial Responses to Communism and the Transition

More than seventy years of communist rule did not prepare the Russian population well for the transition they experienced in the 1990s. The Soviet ideology placed the interests of the state above those of the individual[105], a policy whose terrible consequences were most clearly manifest in the phenomenon of the Gulag.[106] People were taught to sacrifice their lives to build communism and to compete with the West; the value of individual life and health was low.

In exchange, the paternalistic state promised to take care of people from birth to death by providing cheap food, apartments, and transport, with free health care and education. The quality was not high but at least they were universally accessible (although there was always a shortage of housing, this was ameliorated to some

103 HFA-MDB. Mortality by leading causes of death. Supplement to European Health for All Database. WHO Office for Europe, 2003. http://www.who.dk/hfadb.

104 HFA. European Health for All Database. WHO Office for Europe, 2003. http://www.who.dk/hfadb.

105 Shkolnikov and Meslé, (1996).

106 A. Applebaum, *Gulag: A History of the Soviet Concentration Camps* (London, Allen lane, 2003).

extent by a strict system of residence permits). This situation engendered a feeling of passivity, with most people believing that the state would help should a disaster, such as a serious health problem, arise. One consequence was the creation of a culture in which it was felt that there was little that individuals could do to protect their own health.[107]

By the 1960s and the 1970s it was becoming increasingly clear that the aspirations of the communist ideology were unrealistic, a view encouraged by events in Hungary and Czechoslovakia, where Eastern European "friends and allies" of the USSR were less than happy with "real socialism". As chinks appeared in the "iron curtain" in the 1960s and 1970s, Russians began to see the gap opening up between their living standards and those in the west. Unpublished surveys revealed a growing popular disillusionment with the communist system[108] and an erosion of social norms and values.[109] This disillusionment was exacerbated by the increasing evidence of corruption, reaching to the heart of the ruling elite. As a consequence, people were becoming increasingly alienated from the state and from official institutions.

Individuals and communities faced numerous constraints. There was no legitimate scope to increase income and little on which to spend what they had. Official organisations, such as the communist youth movement, or pioneers, took the place of the civil society organisations that developed spontaneously in the west. In other words, there was little scope for self-realisation. This, coupled with the "effort-reward" imbalance[110] that many people experienced at work, led to psychological stress. Young men with little social support, in particular the unmarried, were most vulnerable.[111]

In these circumstances, it was inevitable that a sudden shock to the system would be traumatic. When this occurred as the Soviet Union broke apart in 1991 and major economic reform began in 1992, the already upward trajectory of mortality accelerated. The population was unable to cope with the new socio-economic realities.[112] Over the following three years, the speed of change increased, although

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107 I. Nazarova, 'Self-rated health and occupational conditions in Russia', *Soc Sci Med,* 51 (2000), 1375–1385.

108 R. Service, *A history of twentieth century Russia* (London, Allen Lane, 1997).

109 P. Makara, 'Policy implications of differential health status in Eastern Europe: the case of Hungary', *Soc Sci Med,* 39 (1994), 1295–1302.

110 J. Siegrist, 'Place, social exchange and health: proposed sociological framework', *Soc Sci Med,* 51 (2000), 1283–1293.

111 P. Watson, 'Explaining rising mortality among men in Eastern Europe', *Soc Sci Med,* 41 (1995), 923–934; P. Hajdu, M. McKee, F. Bojan, 'Changes in premature mortality differentials by marital status in Hungary and in England and Wales', *Eur J Publ Health,* 5 (1995), 259–64.

112 J. Shapiro, 'The Russian mortality crisis and its causes', in *Economic Reform at Risk*, Ed. A.Aslund (London, 1995), pp. 149–178.

the transition was uneven and those in the areas experiencing the most rapid transition fared worst[113], with large increases in mortality, especially from cardiovascular diseases and from injuries and violence.[114]

A weakening of many state institutions, with their accompanying systems of control, contributed to growing uncertainty. There was widespread erosion of social norms, cohesion[115], and of law and order. One manifestation was a marked increase in the murder rate, with an increasingly diverse range of people involved, both as victims and perpetrators.[116] Another was the growth in use of narcotics, as alienated young people sought relief from the hopelessness all around them.

By the end of the 1990s, therefore, Russia was becoming an increasingly fractured society, with a few people at the top achieving enormous wealth while large numbers fell to the bottom, marginalised from mainstream society.

Although the psychosocial stress explanation is plausible in light of the timing of mortality upturns in 1992 (after the beginning of reforms) and in 1999 (after the 1998 economic crisis) and is supported by the arguments presented so far, direct evidence linking psychological stress with health and mortality is still very limited. The study by Bobak et al.[117] found a strong association of perceived control over one's life with low self-rated health and poor physical functioning in a nationally representative sample of the Russian population. It is not clear, however, to what extent self-rated health predicts largely violent or sudden mortality among men at working ages, which was a core part of mortality increase in the early 1990s. Another study in Novosibirsk revealed a strong association between the effort-reward ratio and depression[118]. A study in Taganrog[119] revealed an association between heavy alcohol consumption in men and economic pressures on families and family conflicts. It seems, however, that this relationship could also work in a reverse direction. The Udmurt study[120] showed associations between premature deaths of men at ages from 20 to 55 and several measures of psychological stress.

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113 G. A. Cornia, R. Paniccià, 'The transition mortality crisis: evidence, interpretation and policy responses', in *The mortality crisis in transitional economies*, Ed. by G. A. Cornia, R. Paniccià (Oxford University Press, 2000), pp. 3–37.

114 P. Walberg, M. McKee, V. Shkolnikov, L. Chenet, D. Leon, 'Economic change, crime and Russian mortality crisis: a regional analysis', *BMJ*, 317 (1998), 312–318.

115 M. Bobak, H. Pikhart, C. Hertzman, R. Rose, M. Marmot, 'Socioeconomic factors, material inequalities, and perceived control in self-rated health: cross-sectional data from seven post-communist countries', *Soc Sci Med,* 51 (2000), 1343–1350; R. Rose, 'How much does social capital add to individual health? A survey study of Russians', *Soc Sci Med,* 51 (2000), 1421–1435.

116 Chervyakov et al., (2002).

117 Bobak et al., (1998)

118 Pikhart et al., (2004).

119 Carlson and Vågerö, (1998).

120 Shkolnikov and Chervyakov, (2000).

Unfortunately, the information on stress in the deceased was collected from proxy informants and could be biased.

Finally, at the physiological level, the LiviCordia study, which compared Vilnius (Lithuania) and Linköping (Sweden)[121] sought to explain the four-fold difference in mortality from coronary heart disease between 50-year old men from Lithuania and Sweden. It found elevated levels of psychosocial stress, job strain, social isolation, poor coping skills, low self-esteem, exhaustion, and depression along with attenuated cortisol responses to stress in Vilnius.

Summary and Conclusion

Amartya Sen, winner of the 1998 Nobel Prize for economics, in an influential 1995 lecture, considers mortality as a key measure of the success or failure of a country's development.[122] This inspiring idea is grounded in the fact that mortality is a reflection of society's ability to transform its economic resources into the most important public good, its nation's health. Simple indicators of mortality can often say more about the level and direction of a society's development than complex macro-economic indicators. Following this line one can conclude that Russian socio-economic development in the 20th century was generally poor. In the first half of the 20th century, Russian mortality was very high because of the traditional causes, including very high infant mortality due to infectious disease. Between the October revolution of 1917 and the death of Stalin in 1952, the Russian population faced enormous demographic disasters caused by the two world wars, famines, and Stalin's political repressions. This legacy did not prevent Russia from making a spectacular progress in the 1950s, with a radical reduction in mortality among children following universal access to primary health care, immunisation, and antibiotics.

However, by the mid-1960s mortality began to increase and this trend has continued until now with only two short interruptions in the second halves of the 1980s and the 1990s. This has been the first example of sustained mortality reversal in the 20th century. Mortality began to increase at the very moment when the Soviet Union was at the height of its economic and military power, even at a time when the USSR was enjoying economic growth, indicating a fundamentally negative process at the core of the Soviet society.

121 Kristenson and Kucinskiene, (2002).

122 A. Sen, 'Mortality as an Indicator of Economic Success and Failure'. Inaugural Lecture. Instituto degli Innocenti, 1995.

After the fall of communism and the disintegration of the Soviet Union, the mortality increase in Russia has become steeper. This differentiates it from the former communist countries of Eastern Europe, which have experienced a substantial reduction in mortality in the 1990s. The worsening mortality situation in Russia once again documents a failure of Russian socio-economic development in this new stage of its political history.

The present study provides a systematic description of adverse mortality trends and summarizes the scientific evidence on the nature of the health crisis in Russia available so far. We begin by looking at the timing and the age- and cause-of-death patterns within the overall mortality increase. Mortality fell briefly during Gorbachev's anti-alcohol campaign and then began to increase sharply in 1992, just after collapse of the Soviet Union and the subsequent painful socio-economic transformation, with a further deterioration after the economic crisis of 1998.

The underlying excess mortality in Russia and its sharp increase in the 1990s were very much concentrated among men of working age with low level of education, especially those who were not married. Mortality among highly educated Russians is about the average level of western populations. However, even mortality in this most advanced section of the Russian population is substantially higher than in their western counterparts who have high education. Among men the adverse situation is mostly driven by high mortality from circulatory diseases at middle and old ages and from external and alcohol-related causes of death at young adult and middle ages. Excess mortality among women is mostly related to higher mortality at ages over 60 from circulatory diseases. In both men and women, there is a heavy burden of reported ill-health at old ages.

Although conventional risk factors such as smoking and elevated blood pressure are relatively frequent in the Russian population, they can explain only a part of the excess mortality in Russia compared to the West or of the mortality differentials across groups within the Russian population. We thus considered a number of explanations that are supported by evidence from the work of ourselves and others on mortality and health in Russia during the last ten years.

While some patterns of the Russian mortality such as changes in mortality from lung and stomach cancers can be linked to events in the past, these do not play a principal part in the recent increases in Russian mortality.

The consequences of smoking for mortality are very similar to those observed in other countries. However, the high prevalence of smoking among Russian men suggests a high population attributable risk from this factor, with smoking elevating mortality from ischaemic heart disease and cancers of the lung, aerodigestive tract, and some other sites. Although smoking in Russia increased in the 1990s, the mortality fluctuations of the late 1980s-1990s are unrelated to current patterns of smoking.

The impact of alcohol on mortality and especially on these fluctuations between 1985 and 1995 appears to be much stronger than expected. This can be attributed to the episodic pattern of drinking, involving consumption of large amounts of vodka, resulting not only in excess deaths from alcohol-related and external causes, but also in large numbers of premature deaths from cardiovascular causes.

The role of nutrition is less clear. It seems that a high intake of fatty foods combined with low physical activity is likely to be contributing to the growth of obesity and subsequent ill-health, especially among Russian women. It also seems likely that a low intake of micronutrients, in particular those derived from fresh fruit and vegetables, is contributing to the high rate of cardiovascular disease and of some cancers.

The inadequacies of the Russia health care system are increasingly recognized. Its past strengths are no longer adequate for the challenge it now faces. It is clearly failing to deal with a rising tide of complex chronic disease. The situation may be getting worse during the early 1990s with an increasing gap between needs and funding, as well as a failure to adopt new technologies and working methods for treatment and prevention. According to some estimates, one fifth to one quarter of the Russia-West gap in life expectancy at birth could be attributed to deaths from conditions amenable to health care. These signs of decline are especially worrying in the face of emerging threats of HIV/AIDS and multi-drug resistant tuberculosis.

Finally, there is a fundamental question about some more general societal reasons why the health crisis in Russia has been so deep and persistent. Obviously, the often chaotic political and socio-economic transition of the 1990s created high levels of psychosocial stress, resulting in many premature deaths. The psychosocial stress affects men more than women, as the latter have, traditionally, found support from their roles as carers for families. This stress can be a direct cause of ill-health and even death but, more often, its effects are indirect, leading to heavy drinking and other health damaging behaviour as a way to cope with it and so to "escape" from the grim reality that is life for many people in Russia today.

Yet the health crisis began much earlier than the 1990s. How can one explain, for example, the persistence of adverse health behaviours among Russian men? We argue that the core of the problem can be related to the very nature of the communist and post-communist societies in Russia. Both the oppressive communist regime and the emerging "hour-glass" post-communist society have given a low priority to the health of the individual. There has been a continuous neglect of social and health care needs when deciding resource allocation, reducing the prospects of the worst-off groups in the population from achieving adequate living standards or access to effective services, including health care.

This society has failed to develop a legal system that offers equal chances to everyone. This in turn restricts life chances and leads to a large-scale effort-reward

imbalance, especially among people whose initial situation is weakest, who are then unable to cope with rapidly changing economic conditions.

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Continuity and Discontinuity of Health and Health Care in the Czech Lands during two Centuries (1800–2000)

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Introduction

During the last two hundred years the Czech Lands have undergone not just socio-economic changes but also dramatic political upheavals. We describe the connection between social and political transformation on the one hand and the state of health of the population on the other from the end of the 19th century to the present with two main aims: Firstly, to show the clear continuities and discontinuities of health trends on our territory, and secondly to provide at least basic data for comparison with other countries. The emphasis is placed on the transformation period 1990–2000, during which the impact of political, economic and social changes on the health of the population and the quality of life have been the most obvious. The text presented is the collective work of five authors (historians and sociologists), who approach the theme from different standpoints.

General Overview[1]

Historical Development

The Czech Republic (CR) is a very young state, proclaimed in its present form only on the 1st January 1993. Previously its territory (the historical lands of Bohemia, Moravia and Silesia) had been part of the Austrian Empire (1526–1918) and then Czechoslovakia (1918–1992). Political changes in the Czech Lands (or the states that they used to be a part of) often had a strong influence on the health of the population, as did economic and social change. For example, the roots of the modern health care system can be identified in the large-scale reforms carried out by the enlightened Habsburg monarchs from the 1750s. The substantial reforms of the health system were part of efforts to transform the Habsburg Empire from a backward feudalistic absolutist monarchy into a constitutional monarchy with a developed civic society (especially in its western part). Despite its striking cultural and economic progress, especially from the 1860s, the political emancipation of the Czech people in the multi-national monarchy was restricted by ethnic tensions or even open conflicts between the Czech majority (2/3) in the Czech Lands and the German minority, which was in many ways privileged by the centralising policies of Vienna. This was partially resolved with the establishment of the Czechoslovak Republic in 1918.

In addition to the economically, socially and culturally advanced Czech Lands (provinces of the former Austrian part of the monarchy) the new republic also contained the less economically and socially advanced (including the level of health and standard of health infrastructure) Slovakia and Ruthenia (originally integral parts of Hungary). The continuing tension between the state "Czechoslovak" nation (and indeed between Czechs and Slovaks despite their supposed union within the new nationality) and the national minorities (especially the Germans) proved a burdensome legacy. The establishment of the Republic was the first of many social-political upheavals throughout the 20th Century. Other include: the transition from monarchy to republic (1918), the end of democratic republic (1938) and the Nazi occupation (1939–1945), reconstruction of pre-war conditions and short period of so called "limited democracy" (1945–1948), the beginning and the end of the totalitarian, Soviet-oriented communist regime (1948–1989), the beginnings of new democratic era after 1989, and the break-up of Czechoslovakia in 1992/93. All these events can also be understood as milestones of transition in the

1 (P. Svobodný, E. Krízová, H. Hnilicová, H. Janecková).

health care system. Every new regime declared its own health policy, but real changes in the system was often a very different matter.

Socio-Economical Development

After the removal of political barriers industrialisation proceeded at high speed during the 1870s. As a result we can characterise Czech society at the turn of the 19th/20th century as industrial-agrarian (like Lower Austria), in contrast to the surviving predominantly agrarian-industrial societies in the other Austrian provinces and the purely agrarian society of the Hungarian part of the monarchy. The industrialisation of the Czech Lands coupled with the change in the social structure of the population during the first half of the 19th century resulted in a new distribution of economic, social and, by extension, health conditions and problems. This was compounded by increasing urbanisation, both in the sense of a rising number of larger settlements, and in the sense of a growth in their populations, during this time. The other side of industrialisation and urbanisation in the 19th century was growing migration and emigration.

In the period of the 1st Czechoslovak Republic (CSR, 1918–1938) we can characterise the Czech Lands as an industrial-agrarian society, with a high proportion of industrial working class (over 50%) with an important middle class (especially amongst the civil service). The post-war revival of the Czechoslovak economy was faster than in the surrounding countries; in 1924–1929 it experienced a strong boom, especially in the Czech Lands. In the autumn of 1929, however, the CSR was hit by the world economic crisis (causing a steep rise in unemployment, peaking in 1933). Naturally the crisis had serious social and political consequences, and its negative effects on the health of the population require further research.

More dramatic changes in the structure of employment and the social structure, as well as changes in the regional distribution of population (migration to major industrial centres) took place after 1945, and then after 1948 with the political and economic measures taken by the communist regime (liquidation of the private sector, the reconstruction of industry with an emphasis on heavy engineering, planned economy, the orientation of foreign trade to the USSR and its satellites, the collectivisation of agriculture). Despite initial successes, the centrally directed and planned economy of socialist Czechoslovakia was already running out of breath by the late 1950s (a plan for economic reforms was one of the starting points of what was known as the "Prague Spring" of 1968). Its increasing economic problems in the 1970s and 1980s contributed very significantly to the collapse of "real socialism" in 1989.

The new Czech Republic also experienced a major socio-economic transition in the last decade of the 20th century. After the political changes a market-oriented

economy was re-introduced based upon massive privatization of national industries. The economy as a whole has been structurally reoriented from heavy industry towards the consumer and the construction industry, which involves small businesses and the development of a tertiary sector. Although viewed as generally positive, this restructuring has created unemployment, which is a new phenomenon after 40 years of full employment ensured by the communist regime. The economy has also suffered heavily from an underdeveloped and insufficient banking sector. In 2000 the gross domestic product of the CR was approximately 3 to 4% less than it was in 1989–1990. In spite of some negative trends, there are also positive signs of economic development. Labour productivity has increased by about 10% since 1990.

Political transition in 1989 also brought many changes in the everyday life of Czech citizens – freedom of movement and travelling, freedom of assembly, new civic associations and institutions, freedom of conscience and speech, freedom of beliefs and political orientations etc. On the other side, the economic aspects of transformation have caused a new type of injustice and inequalities, unemployment, wealth and poverty, winners and losers. Undoubtedly, all the social changes mentioned have had a strong impact on the quality of life of Czechs.

Demographic Development

The demographic trend in the Czech Lands in the earlier 19th century can be characterised as one of long-term, relatively stable growth, especially compared to the catastrophic developments up to the end of the 1780s. Acceleration in population growth is particularly clear from the beginning of the 1820s, with a later period of stagnation caused by World War I and a fall as a result of World War II (casualties, movements of population). A renewed gradual growth in population set in at the end of the 1950s and speeded up at the turn of the 1970/1980s, only to stagnate and even start to fall from the turn of the 1980/1990s. Up to the beginning of the 20th century the result of the generally favourable development was a classic stable age structure characterised by a low age pyramid with a broad base, which did not change until WWI. The overall upward trend of population included structural changes in natality and mortality rates, and even large-scale emigration did not threaten it. Thus the population of the Czech Lands grew from roughly 4.3 million in the mid-1780s to 6.8 million at the end of the 1840s to 10.1 million before WWI (the same before WWII), with a drop to 9.3 million in 1945, and recovery of the pre-war level (10.1) in the later 1970s to its current level of 10.3 million.

The originally high natality rate (42–44 live births per 1000 population with the exception of the period of the Napoleonic Wars) fell in the mid 1820s and until the 1870s oscillated around 37–40 per mille. From the 1870s a long-term trend of

decline set in (from 39 in 1870s to 35 in the 1890s and 28 by 1915). A steep decline set in during the 1st World War and natality continued to fall to the level of 15 in the mid-1930s. During the 2nd World War there was a revival in the birth rate and another short-term baby boom set in after 1945 (in the later 1940s it exceeded 21 per mille). From the beginning of the 1950s natality once again declined. Sparked by the enlarged social and maternity benefits as a part of the political and social "normalisation" strategy after the 1968 crisis the early 1970s witnessed an exceptional baby boom. Since the mid-1970s population peak (around 17 per mille) the decrease in live births has been constant with an accelerated regression after 1989 (the current level is 8.8 per mille in 2001, while total fertility rate decreased from 1,9 in 1990 to 1,1 in 2001). In the transition period of the 1990s the number of live births was approximately only 50% of the mid-1970s. In 2002 the drop in natality has slowed down slightly as a consequence of the large population cohorts of the 1970s baby boom reaching fertile age.

The trend in mortality (number of deaths/1000 population) has exhibited much more dramatic swings especially in the 19th century. At the turn of the 18th/19th century the mortality curve oscillated at the very high level of between 30 and 40 per mille, with high levels during catastrophes – wars, famines and epidemics (1796–1802 smallpox, 1805–1814 Napoleonic Wars accompanied by epidemics of smallpox and typhoid, absolute peak – 57 per mille – in the year of the Battle of Austerlitz 1806). From the beginning of the 1880s there was distinct and definitive change to the better; a drop in mortality from 29 per mille (early 1880s) to 19.5 just before the World War I (but naturally with a short-term rise during the war itself), and this continued into the 1920s and 1930s (reaching a minimum of around 13 per 1000 population in the mid-1930s). After a short-term rise in the early 1940s (WW II) the mortality rate once again fell (to between 10–11 per mille in the 1950s–1960s), only to rise in the 1970s–1980s (12–13 per mille). After 1989 a stable decline in mortality set in with the present mortality at 10.5 per mille in 2001. Since 1994 the number of deaths has consistently exceeded the number of births and a natural population decrease has been slightly reduced only thanks to a positive migration balance. The process of population ageing implied by the long-term drop in natality and increasing life expectancy continues and is expressed by a crescent age preference index (i.e. the number of persons aged 65+ years per 100 children up to 14 years) that achieved 87.0 in 2000. Life expectancy in both sexes has increased notably during the 1990s and has reached 72.1 years in males and 78.5 in females.

For almost the whole 19th century infant mortality (number of deaths per 1000 live births) in the Czech Lands was extremely high in comparison with the other European countries. From the 1820s to the early 1890s it oscillated between 240 and 265 per mille. Variations in infant mortality did not, however, follow the curve of overall mortality (one reason was probably that natural immunity of infants protected them in times of epidemics). The mid-1890s saw a fundamental change

for the better and infant mortality gradually (even if with a delay compared to the rest of Europe) fell to 189 per mille before the WW I. The falling trend (after a temporary reverse in wartime) continued under the First CSR (from 155 per mille at the beginning of the 1920s to 96 at the end of the 1930s). The substantial drop from the early 1950s was attributed to the successes of the new socialist health care system (from a post-war 87 to 47 per mille at the beginning of the 1950s to an average of 11.5 in the later 1980s). Another major improvement was visible after 1989 as infant mortality dropped again (from 11 in 1990 to 4.0 in 2001).

During the transformation era of the 1990s a decline in the number of marriages (the lowest since 1918) and, conversely, an increase in the divorce rate have been observed. The number of children born to cohabiting couples is continually growing. A positive sign of the demographic development of the 1990s is a continuing and stable decline in numbers of legal abortions. In summary during the 1990s the CR has gradually progressed towards the so-called western demographic model thanks to decreasing mortality, a drop in natality, abortion and marriage rates. The only deviations from the model are the ongoing high divorce rate and the instability of families with small children.

Structures, Principles, Institutions[2]

The Health of the Population 1800–1945

Systematic identification of rates of morbidity and mortality from individual kinds of disease is extremely difficult at least for the first and to some extent even for the second half of the 19th century because of the ambiguity and changeability of period classifications of disease. More complete data on disease specific mortality in the Czech Lands make it possible to identify a turning-point in the incidence of these lethal diseases from the 1880s as a result of improvements in hygiene conditions in the larger towns and reforms in the health system: the last cholera epidemic in 1866, the last smallpox epidemic in 1872–73 (sharp fall in incidence from the beginning of 1890), the last epidemic of diphtheria 1877–78. Tuberculosis remained a continuing threat.

While changes of population as a rule reflect political and social changes, territorial changes and differences are also important. Different regions of the new Czechoslovak Republic followed their own development path and differed

2 (H. Mášová, E. Krízová, P. Svobodný).

considerably in their economic and health-care level for a long time. The situation shortly after 1918 was characterised by the immediate consequences of the war – increased incidence of infectious diseases (tuberculosis, typhus, cholera, sexually transmitted diseases and Spanish influenza) and physical exhaustion and pauperisation of the population, resulting in extensive malnutrition. The health condition of the population in the CSR was not in keeping with the economic and cultural level of the country. For instance, the rate of neonatal mortality and incidence of tuberculosis could not bear comparison with European standards. Even here, the contrast between the eastern and western provinces of the country was striking. The higher population increase (accompanied by higher emigration) in Slovakia and Ruthenia can be explained in terms of the less developed agrarian society of these regions.

The accuracy in establishing the cause of death was rather uneven, both for particular years and in particular parts of the country. The incidence of epidemic typhus (besides infant mortality, an indicator of poor hygiene) was sporadic and always due to foreigners in the western part before the war. After the war it was completely eradicated there. In the East it was endemic in the indigenous population (like trachoma); after the war, the epidemic nature of the disease was suppressed but the hazard persisted, also because of the risk of transmission from the Baltic region and the Balkans. Typhus and paratyphoid also ranked among the most serious health problems. Typhoid was of a somewhat endemic nature in pre-war Bohemia and decreased at the turn of 1930. In rural regions of Slovakia and Ruthenia the incidence of typhus was much higher, though there was a considerable decrease in comparison with the pre-war period and the large wartime epidemics. The mortality for typhus was several times higher than in Western Europe, but lower than in Spain or Italy for instance. The tuberculosis rate in some parts of Czechoslovakia was among the highest in Europe at the beginning of the 20th century (TB ceased to be a threat to the Czechoslovak population only in the early 1960s.)

By the mid-1930s infectious diseases mainly infested the economically and socially less advanced eastern regions of the country as well as the northern regions of the west, where industry was concentrated. In the early 1930s the main causes of death changed and mortality from infectious diseases rapidly declined in the western parts of the CSR (in Slovakia later – after World War II). The so-called "diseases of civilization" (cardiovascular and oncological diseases) began to prevail in the Czech Lands at that time.

The relative order of causes of death kept changing in the following years. Infectious diseases, including TB as the most lethal, moved from the second and third position in 1937 and 1948, respectively, to as low as the sixth position in 1959. Cardiovascular diseases (more in men), which had been a major cause of death even before the World War II, moved upwards on the list after the war. Neoplasms

became the second most frequent cause of death (more in women). Two other groups became a serious problem: diseases of the nervous system (including strokes, taking third place) and – even more seriously – accidents (including poisoning), which affect the younger age groups of men. The differences between Slovakia and the Czech Lands persisting in the 1950s mainly reflected a different structure of population. By the end of 1950, there were still fewer neoplasms, neurologic disorders, cardiovascular diseases and accidents among the causes of death, but more infectious, respiratory and early age diseases in Slovakia.

After World War II, "well-being" was encouraged by the hope that a socially and economically fair society would overcome old miseries. In the second half of the century the diseases connected with other than external social factors (although the inability to overcome pollution and an unhealthy way of life is also related to social organization), took top positions in statistical tables of morbidity and mortality. The differences between the East and the West of the country and between its urban and rural parts were systematically equalized, health care was nationalized, but everybody's life was potentially affected by a new menace – by the Cold War and its ideological and economic consequences.

The Health of the Population 1945–1989 and during the Transition Period of the 1990s

Between 1945 and 1960 a remarkable improvement of the health of the population was achieved for every age group, partly due to better social conditions (peace, employment, welfare state) and partly thanks to the state-run health care system that made health care services universally accessible. Not only were financial barriers to healthcare abolished, but the state also took steps to ensure a balanced geographical distribution of health care providers by establishing the network of district and local polyclinics and also through a directive employment system that sent young physicians to insufficiently covered areas. Life expectancy began to rise and a continuous decrease in the incidence and prevalence of many diseases was documented in all population groups. From 1960, however, the positive development of the population health stagnated; no additional improvement was achieved despite new investments in the healthcare sector. The 1980s witnessed the culmination of years of slow decline and was documented in a highly critical report by local experts (though this report was accessible only to the leaders of the Communist Party). Life expectancy in both sexes lagged behind Western Europe, and was associated most obviously with excessive cardiovascular mortality in middle-aged men (50–60 years) as well as the increasing burden of other chronic diseases. Diseases of the circulatory system were responsible for more than half of the total mortality. The incidence and prevalence of diabetes, cancer, cardiovascular

diseases, allergies, mental and muscosceletal disorders had grown quickly in all population groups, including children, despite the universal accessibility of health prevention and health care under state direction. The conclusion was that the socialist health care system had exhausted its potential benefits and could no longer motivate either the population or the providers. The paternalism of the socialist state had deprived citizens of a feeling of co-responsibility for their health and led to a passive attitude. Hence, one of the main explicitly declared goals of the transformation of the healthcare system after 1989 was an improvement of the general population health and a decrease of mortality and morbidity indicators.

The separation of health funding from the state budget and establishment of public insurance companies in 1991–1992 led to an unusual input of resources during the early transformation period. Modern technological resources were quickly enlarged and the latest technological interventions as well as pharmacological options introduced on a mass scale for the treatment of many diseases (see below). Further, positive changes in lifestyle as well as the democratic climate characterised by civic freedom also influenced the population's health, if in a less measurable way. The prevalence of smoking has slightly decreased, but on the other hand the abuse of illicit drugs has increased. Generally speaking, the motivation for health in an achievement-orientated society has been restored to a considerable extent, especially among the young and middle-aged. Although the number of people with a high BMI and a sedentary lifestyle increased between 1993–1999, there has been a noticeable improvement in dietary habits indicated by lower intake of meat and animal fat. Recently, the mass media has contributed substantially with articulation of health topics with new and more trustworthy coverage.

A remarkable decline in mortality and a rapid increase in life expectancy have been documented during the transition in the 1990s. Not only has crude and standardised mortality declined, but specific mortality from circulatory, respiratory and gastrointestinal diseases, neonatal and infant mortality have decreased as well. A slight drop in the suicide rate is evident, too, but the trend is oscillating. The number of deaths from malignant neoplasms as the second main mortality cause has stagnated. Since 1990, a dozen new cardiosurgery centers has been established in the CR, so that in each region the newest cardiosurgical interventions are currently available. The total number of cardiosurgery operations rose from 1610 in 1989 to 10797 in 2002. This change in the availability of cardiosurgery technology is most probably responsible for the drop in cardiovascular mortality and accounts for a large part of the increase in life expectancy. Men in the age group 60–69 years and females in the age group 70–79 years contributed most to the life prolongation (1/3), almost 1/2 of the total gain between 1989–1995 is attributed to cardiovascular

diseases.[3] The overall gains in life expectancy between 1990 and 2001 were 4.5 years for men and 3.1 for women and life expectancy currently reaches 72.1 in men and 78.5 in women (Figure 1). Unfortunately, this positive potential was to a certain extent mitigated with an increased mortality in the traffic incidents in males 0–69 years and females in all age groups (1–80+ years).[4]

On the other hand, the burden of chronic disease as documented in the late 1980s has remained essentially unchanged. There has been a positive trend in relation to infectious diseases only. The mean percentage of incapacity for work has increased as average duration of sick leave in days gets longer – while in 1985 mean percentage of incapacity for work was 4.45, in 2000 it was as much as 6.46. The number of people on full invalidity benefits has stagnated, whilst the number of people on partial invalidity benefits has risen. The incidence of malignant neoplasms and diabetes has increased continually in both sexes. Although the average length of a hospital stay has been reduced, the number of hospital admissions has risen by 21%. An increase in the need for psychiatric care and the total number of first consultations in out-patient psychiatric departments was also observed during the 1990s. The subjective perception of health status has not changed notably over the last decade and, viewed comparatively, it still lags behind the European average. Thanks to very low neonatal and infant mortality the number of congenital and developmental defects in children per 10 000 live births as well as the number of children followed up (dispenzarised) has increased steadily.

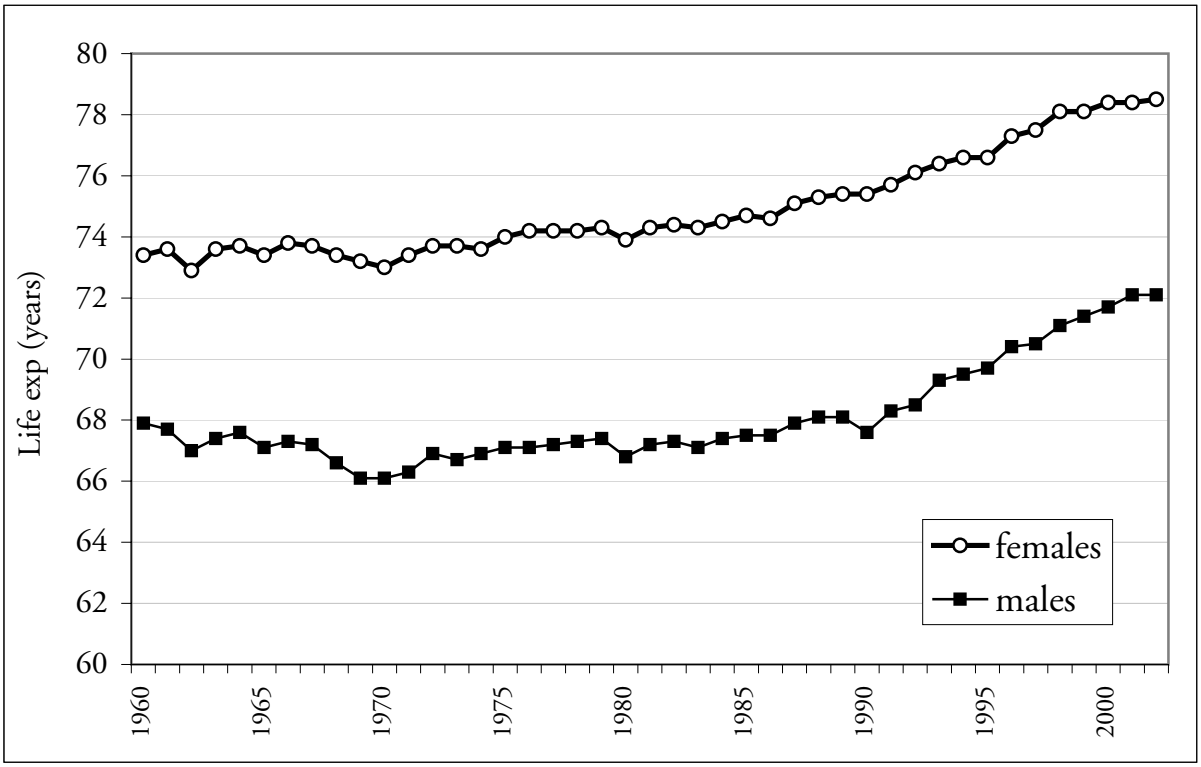
We may assume that the transformation had an uneven impact on the improvement of the health of the population. Some population groups benefited from the technological investments in health care and from the social change disproportionately, while the health of others deteriorated partly for social reasons (loss of state paternalism[5] and lack of personal responsibility for health), and partly for specific structural reasons of the transformation policy (neglect of low priority diseases as mental diseases, for example).

3 J. Blažek, D. Dzúrová, 'The Decline of Mortality in the Czech Republic during Transition: A Counterfactual Case Study' in *The Mortality Crisis in Transitional Economies,* G. A. Cornia, R. Paniccia (Oxford University Press, 2000), 312.

4 Blažek, Dzúrová (2000), 312.

5 Blažek and Dzúrová document an increasing disadvantage caused by the marital status during the last decades (1960–1995) that has an impact on higher mortality rates especially of divorced and widowed men (Blažek, Dzúrová, 2000:313). This may show a changing role of state and family in providing social support and copying with everyday life.

Figure 1. Life expectancy at birth, 1960–2002.



Source: Czech Health Statistics Yearbook, Institute of Health Information and Statistics of the CR.

Health Care System 1800–1918–1948–1989

The Habsburg rulers provided the basis for the later system of public health care with the establishment up of a court (imperial) health commission (1752). Simultaneously the monarchy issued "general health regulations" for individual provinces that included definition of the powers and responsibilities of different categories of health workers, especially in the field of preventive care (i.e. in periods of epidemics). In 1770 the provincial health regulations were augmented by a central Imperial Health Act. The shortcomings of the system, which had little effect at lower levels, were made very apparent in the 1830s when the first cholera epidemic broke out. In Bohemia one response was the drawing up of a reform plan involving the establishment of smaller health districts with their own official physicians. Similar proposals for establishing district and community doctors emerged in connection with administrative reforms after 1848. Basic health reforms were only made possible, however, by the change in political conditions after the fall of Austrian Neo-Absolutism. 1870 saw the issue of a new Imperial Health Act. But political obstruction on the part of Czech politicians and doctors, who were at loggerheads with their German-speaking equivalents, meant that the appropriate provincial health laws (for Bohemia, Moravia and Silesia) were only accepted after

some delay (1880/1890s) The provincial health laws applied the principles of the imperial law in concrete form; they included introduction of the institution of official (state) doctors in political districts and in specially defined health districts, thus substantially increasing and extending access to medical care. Medical care was also rendered more accessible to the poorer classes by legislation making injury (1887) and sickness (1888) insurance compulsory in the Austrian monarchy on the Prussian model. From the end of the 19th century other developments that contributed greatly to the improvement of health care for a ever wider sections of the population included the proliferation of voluntary societies and organisations, the growing number of doctors in private practice, the rapidly growing network of public and private hospitals and, of course, the advancing diagnostic and therapeutic resources of modern medicine.

The 1st CSR saw a general trend to the improvement of the quality and expansion of existing structures (the setting up of the Ministry of Public Health; the extension of compulsory sickness insurance to other sections of the population; rise in the number of health facilities and numbers of staff etc.) and their extension to less advanced areas of the republic (Slovakia, Ruthenia) rather than the reconstruction of the health system as a whole.

The war period (1939–1945) brought a great many institutional and organizational changes in the structure of the healthcare system in the Protectorate of Bohemia and Moravia, all of them introduced without any discussions by the Protectorate or Nazi authorities. At the same time, both underground activists and representatives of the Czechoslovak nation in exile prepared their programs of post-war recovery and reform of the healthcare system. The healthcare system in liberated Czechoslovakia was returned to its inter-war form. The question of health reforms according to the plans of inter-war reformers, the plans of the government-in-exile and its experts in London or the plans of the (not only) communist underground were still open. Trials, hesitations, partial reforms due to differing opinions concerning the future form of public health care were typical for the years 1945–1948.

The communist takeover opened up the way for far-reaching health care reforms, which followed shortly after February 1948. These were nationalisation, unification, and centralisaton of the health care and social insurance system. This put an end to jurisdiction disputes, and was followed by an immediate series legal acts carrying through the socialisation of the health service. Nationalised hospitals, spas and sanatoria were incorporated into the Institutes of National Health. Prophylactic measures against TB and communicable diseases, based on legislation of the same year, were backed by restrictive powers but at the same time provided social security to invalids and their families. The National Insurance Act, for which socialist parties had struggled for so long, could be implemented according to communist concepts from that time on.

By the early 1950s, the system of so-called unified hospitals was complete. In keeping with the principle of integrated health care in the health community system, hospital specialists took care of a hospital's catchment area, which was divided into health care districts. In close association with the hospital, the Institute of National Health (district, works and school health centres: out-patient facilities) pursued therapeutic as well as preventative functions, with a stress on prophylaxis. The discrepancy between prophylaxis and therapy was solved in an administrative way. The so-called "socialist" health care system in Czechoslovakia between 1948 and 1989 was officially declared to be one of the best in the world, "completely different" from the systems that had existed in Czechoslovakia before 1948, 1938 or 1918.

The health and social policy of the government seems to be the important factor influencing the health of population. Socialist Czechoslovakia can serve as an argument in this respect. In a centrally directed authoritarian society after 1948 it equalized the differences in the health of the population between the Czech regions and Slovakia much more rapidly than during the period of the pre-war democratic CSR. The causes of changes can be seen in more sophisticated instruments of medical science, shifts in the social situation of the population, ongoing industrialization and equalization of rural and urban life styles. But the changing role of the health service was essential, with the more consistent integration of prophylaxis and treatment, that had not earlier been required by, or promoted so vigorously, the prewar government.

It was in TB and maternity and child welfare centres that social medicine made the best progress. The disastrous postwar demographic situation and the lack of doctors provided the stimulus for the acceleration of other measures to support children, infants and mothers. Nationalization and unification of health consultation in 1947 was based on this urgent need of the day but – at the same time – prepared the ground for further fundamental measures in the sphere of prophylaxis. Being transferred under direct state administration and implemented by regional authorities (National Committees), it took the form of state-controlled popular institutes of national health.

The "Velvet" Transformation of the Czech Health Care System in the 1990s

The socialist health care system was subjected to heavy criticism in the late 1980s as a part of the "perestroika" movement. Poor population health was indicated by stagnation in life expectancy and an excessively high rate of chronic diseases. From the economic view, long-term underfunding and the growing black market for scarce services or drugs were criticised as well as the production-line character of

healthcare services. The healthcare system transformation was from the very beginning an integral part of the global social transformation. As a political priority it was initiated immediately after the 1989 changes and approved by the government (1990) followed by fundamental legal changes (1991–1992). With respect to historical and cultural tradition, re-establishment of the Bismarckian mandatory health insurance was considered to be the best reform strategy. While universal access to healthcare services on the basis of needs and social solidarity remained the proclaimed principle (as it is guaranteed by the Charter on the Basic Human Rights and Freedoms that is a part of The Constitution) the main transformation strategy consisted in privatisation of ambulatory (outpatient) healthcare services, introduction of health insurance companies, and decentralisation of payers and providers:

- health insurance is mandatory (compulsory) for each earner, a state subsidy is paid for non-earners, so that the total population is covered with the health care;
- nine public health insurance companies are responsible for financing and contracting the care – a regular redistribution process from 60% of their budgets was introduced in order to prevent cream skimming;
- general practitioners and ambulatory (outpatient) specialists became private providers who contract with health insurance companies about the volume of care and the reimbursement – a quarterly negotiation process is defined by law;
- general practitioners are paid mainly on a per capita basis, while outpatient specialists are reimbursed on the fee-for-service basis with a quarterly cap;
- the privatisation of hospitals was stopped, most hospitals remained public and are financed through budgets (volume of care and size of the patients population is controlled);
- the population is entitled to a universal and equal access to healthcare services on the basis of clinical need;
- rationing of expensive treatment options, waiting lists and restrictions in consumer's choice have re-emerged since the shift from fee for-service to prospective financing in hospital care (1997).

In the early period, strongly influenced by adoration of the market and neo-liberal ideology, the idea of competition among statutory health insurance companies and health care providers was central. The intention was also to enhance consumer choice and strengthen individual motivation to health and responsibility for health through drug and other co-payments. However, the market ideology based on competition, freedom and meritocratic justice was grafted onto an egalitarian culture and ethics. Therefore, two scarcely compatible views on the healthcare

system (a rightist and leftist one) have developed without striving for compromise and negotiation. Gridlock at the political level also halted the reform process in the mid 90s. Under social democratic government (since 1998) the emphasis has been laid on equal access to healthcare free of charge, but the system suffers from unsustainability of the quality and accessibility achieved in the early 1990s given current economic resources. Recently, the issue of rationing expensive treatment and drug options as well as the debate on individual contributions at the point of use or via private coinsurance has re-emerged.

The Czech health care system has developed from a state-run tax-funded centralised system to a statutory public health insurance of Bismarckian type. No collapse of services occurred during the transformation period despite decentralisation and privatisation. On the contrary, in the early 1990s a general improvement of quality of care, accessibility of drugs and treatment modalities as well as an improvement of the physician-patient interaction was achieved thanks to an exceptional input of resources, an open market with devices and technologies and free choice of providers. Total health expenses grew from 4–5% of GDP in the late 1980s to 7–8% in 2001. However, the increasing indebtedness of public insurance companies has led to public regulation and the reestablishment of administrative rules of the previous system (e. g. free hospital choice is restricted by the place of patient's permanent residence). Certain patient groups, namely those treated by the newest technologies have profited more than long-term patients like elderly or psychiatric patients. The system lacks a permanent supervision of quality and accessibility of care and cannot prevent lottery elements creeping in. Furthermore, even though the situation of patients has improved remarkably in the 1990s, patients' rights in their entire extent are still not fully respected and protected by autonomous institutions. Public hospitals suffer from the dissatisfaction of physicians and nurses. Currently, further steps must be taken in order to sustain the positive transformation achievements for the future.

Social Change and Quality of Life 1990–2000 A Picture of the Impact of the Transition of Czech Society on the Quality of Life in Social Research[6]

The concept of the quality of life has major consequences for public policy. Its assessment in specific population groups can provide useful information about the effectiveness of the socio-economic policy of the government. Additionally, it makes possible evaluation of the impact of various changes in the social, political

6 (Helena Hnilicová, Hana Janecková).

and biological environment on the everyday life of people and on their perceptions of self-health. From this point of view it is important to know how individual members of the society perceive the life events and situations connected with global social changes and how they are ready to cope with new and often stressful life circumstances.

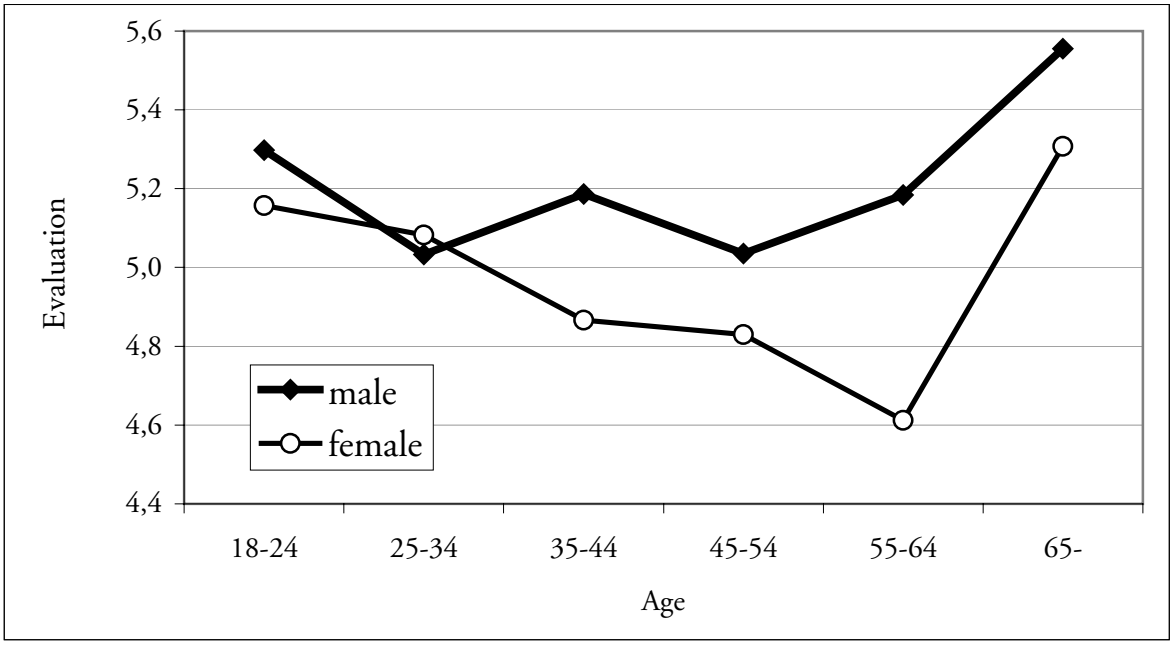
The transition from a totalitarian to a pluralistic political system in the Czech Republic was accompanied by great social and economic changes that represented social and life stress and substantial risk to both psycho-social and physical health. On the other hand, at the same time, some features protective of health could be observed, especially changes in nutrition habits and the quality of healthcare, which contributed significantly to the continuing improvement of the health status of the Czech population. All these processes have influenced the everyday quality of life and created the "winners" and "losers" of the new era.

Losers and Winners of the New Era

A research team of the 1st Medical Faculty, Charles University Prague has attempted to identify the "losers" and "winners" of the rapid transformation in 1989–2000. The question was how people themselves experienced all the rapid social changes in the society. For this reason the project tried to identify the main attributes of the quality of life of the Czech population in the 1990s as well as to clarify the impact of the social changes on the subjectively perceived quality of life during the transition period. The survey was carried out in 2000–2001, investigating the quality of life of a random sample of the Czech population (N=1200). A questionnaire consisted of 49 questions. The majority were constructed as closed questions. Two open-ended questions were also included.

For the purposes of this research, the concept of quality of life was defined as the subjective assessment of the overall quality of life as well as subjective satisfaction with various aspects of life like family, partnership, friendship, job, personal autonomy, success and respect from others, financial situation, leisure time activities, appearance and body weight. Respondents also epressed their opinion on the impact of the transition on their financial situation, work opportunities, interpersonal relations, choices for leisure time, access to information, free opinions expression, professional engagement and job position, enjoyment of cultural events, participation in public policy and finally with the overall quality of life. The principal question was, whether the social changes had caused an improvement or deterioiration in the personal situation of the people. The perceived impact of the changes was analysed by gender, age, education and political orientation. A life

Figure 2. Satisfaction with global quality of life by age (mean value of all items). Comparison of genders.



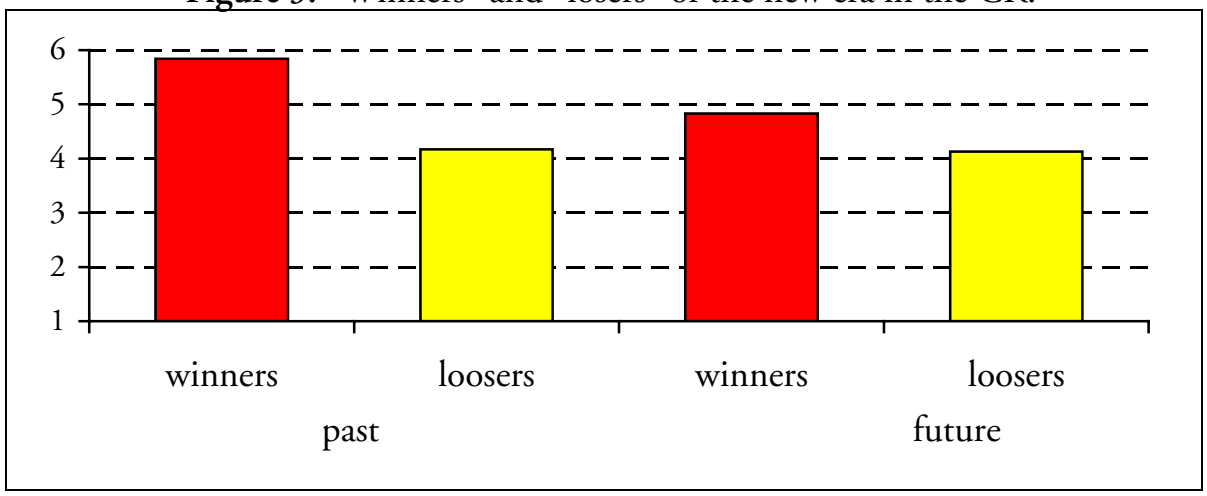
Commentary: Influence of the age on the satisfaction with global QoL is very significant (F (1046/11) =2,39; p = 0,006). Younger people are more satisfied than older people. Influence of gender is approximated to the level of significance (F (1046/1) = 3,75; p= 0,053).

events analysis was also conducted. Self-reported health status was measured on the 5-point scale.

The results showed, that ten years after the political change, Czech people were in general more satisfied than unsatisfied, even if the perceived satisfaction was not very high. For the whole sample the mean value of satisfaction scored 5 on the 7-point scale, described as "often satisfied". Czechs expressed the highest satisfaction with their friends and with their family life and the lowest satisfaction with their financial situation, body weight and physical appearance. The global quality of life differs between age groups. The least satisfaction with quality of life was found at middle age generations between 45–64 years. Women tended to be less satisfied than men. They were less satisfied especially with their life partners. It seems that Czech men have benefited more from partnership than women and that this lower satisfaction in partnership might contribute to the lower quality of life of women (Figure 2).

The most favourably assessed elements of social changes were "the possibility to express personal opinions freely", "availability of objective information" and "choices for leisure time". The changes in "economic situation" and "job opportunities" were rated less successful. The only item rated as having deteriorated with the transformation, was "interpersonal relations". Although Czechs expressed the highest satisfaction with their friends and family life, the development of relations in the society as a whole was not perceived as so good. On average both

Figure 3. "Winners" and "losers" of the new era in the CR.



Commentary: "Winners" evaluated social changes as more positive (1= strong worsening; 7= strong improvement). Differences are very significant for evaluation of past changes (in the years 1989 – 2000) t (133) = 13,87; p<0,0005 as well as for expected changes in the future t (128)=5,83; p<0,0005. "Winners" were men in the age 18–35 years, with university or at least high school education, with rightist political orientation. "Losers" were 45 and more years old women with elementary education or apprenticeship and with leftist political orientation.

men and women reported a mild improvement in the quality of their lives as a whole. The majority of the population (65%) indicated that their life was better than before 1989 and only 12 % felt that their life was worse.

The only item that both men and women appreciated highly was the newly gained freedom of speech. Men perceived higher improvement than women in all other items, especially in their possibilities "to achieve a better position at work". For Czech women the transition changes were less positive than for men. Younger people, respondents with higher education and with a rightist political orientation evaluated transition changes as more positive.

To express our findings in the terms of "losers" and "winners", it is possible to assume, that younger men, with higher education, a rightist political orientation and good health were the group of "winners", which gained the most from the political change. Older women with lower education and left political orientation could be assigned as "losers" of the new era in the Czech Republic. Figure 3 illustrates the conclusion proved by statistical analysis of the research data.

Life events connected with the Czech transformation were significantly correlated of these events with subjective health status. Changes of workplace, resettlement, property increase or restitution were closely related to the feeling of good health (Table 1). For healthy people these events were a challenge, while for people with poor health the negative life events undermined their positive activity.

Table. 1. Economically related life events (% of the whole sample)

	1990–1995	1996–2000
Changed employment	34	41
Removed	20	24
Increased property	10	17
Had a big loan	3	8
Received back property in restitution	4	1
Lost financially	4	11

Experience with Unfairness, Injustice and Inequality

In spite of the rather positive picture of the Czech transformation after the collapse of the past regime, many disappointments and injustice were experienced in the lives of individuals. Respondents were asked about their understanding of the quality of life and their experience with aspects to unfairness, injustice and inequality. Content analysis of the answers made it possible to identity sources of perceived injustice that had arisen during the transition period:

a) The area of policy and law was very important for people. While freedom was mentioned in all age groups, the older people often stressed security and absence of worries for the future. The most important barriers were seen in the area of law. People generally perceived this area as a substantial source of inequity, allowing crime to go unpunished, whether fraud and corruption or the aggressiveness of drivers. Some of the older people completely missed any appreciation for what they had done "for society" during their lives. Younger people criticised the presence of racism, discrimination and the humiliation of women, impoliteness, corruption and protection.

b) The area of economy and work had impact on the life events lived by a great part of the population (Table. 1). The quantity of answers showed this area to be a substantial source of feelings of injustice. Having a good job and job satisfaction were stated as an important source of the quality of life. All the generations expressed dissatisfaction about the financial situation, specifically with low pensions, high prices, unfair competition, fraud and swindle, the asset-stripping of banks and enterprises, absence of rules, abuse of public sources etc. Moreover people suffered from stress and uncertainty at the workplace: older people experienced age discrimination, young people had limited opportunities in the labour market, women felt injustice in reward for work, wages were considered inadequate, others mentioned unfairness of the bosses, especially in the private sector. It is possible to conclude that from the health and the quality of life point of view the work environment seemed to be very stressful and threatening for the Czech people.

c) Social transformation has brought income differences and new social stratification. The survey showed that gender and age might be considered a source of inequities. Good family relations, partner for living, good friends, respect and appreciation, help to those who need help were indicated as substantial determinants of the quality of life. The young and middle-aged also mentioned the quality of housing. As a basic source of injustice respondents indicated the division of society into the rich and the poor, social insecurity, bad relations in families, bad interpersonal relations at the work place, selfishness, unfair behaviour, intolerance, irresponsibility and stupidity.

d) From the point of view of health and living environment the transition has created new conditions, which may be either stressful or supportive. Older people especially often indicated health care and environmental conditions as the cause of inequities. They specifically criticised the impolite behaviour of doctors, waiting times, co-payments for health care and lack of information. These concerns were not present among younger generations.

Conclusions

In our research both quantitative and qualitative analysis provided very consistent results. In their answers the respondents indicated that interpersonal relations, financial situation, work and political climate were very important sources of the quality of life. In spite of significant reservations, the respondents expressed general satisfaction in the most of the analysed areas, although improvement was not very high, with mild deterioration in interpersonal relations. Higher social mobility was connected with economic and work insecurity and consequently with feelings of inequity amongst certain groups of population. In the field of work there were differences between men and women characterised by the lower job satisfaction of men and by a feeling of discrimination on the part of women. Women were also less satisfied than men with their overall quality of life.

Health was perceived as an important aspect of the quality of life, especially by older people. While for the elderly good health was primarily the absence of problems in physical health, young people emphasized psychosocial well-being. Healthcare and environment were, moreover, seen as a source of inequity and stress.

The radical change in 1989 has finally brought a better quality of life for the majority of Czech population. The lowest level of satisfaction was expressed by people between 45–65 years, who can be called the “lost generation”. These people spent most of their lives under communism. Some of them had very high expectations from the new regime and later they were disappointed, while some of them did not have enough capacity, willingness or even health to adjust to the

change. Quality of life was then determined not only by the life events that people experienced, but also by people´s life objectives and internal capacities.

General Conclusions

Social, economic and health changes in the Czech Lands have been closely connected with the political changes especially in the 20th century. In the second half of the century it is therefore very difficult to make an easy assessment of the causes of observable changes in the state of health of the population. It is not clear yet to what extent they were a reflection of the authoritarian measures taken by the communist regime that led to radical changes in the social structure, standard of living, the health service, and social values, and how far they resulted from longer term trends. Impacts on health may, after all, be observable only with a time lag due to the long-term processes involved, inertia and so forth. The long-term impact of the world economic crisis in the 1930s and WWII on indices of the state of health of the population also manifested itself with a time lag as late as around 1960. The exception was that of immediate reactions to social crises as expressed in suicide rates (a marked rise in suicides in 1930–1934,1945–49 and after 1968).

From the short-term point of view, the assessment of the changes since 1989 has been easier. Within an extremely short time demographic behaviour and changes in the structure of illness (in both the positive and negative sense) have aligned themselves with Western Europe. The reintroduction of a system of health insurance instead of state funding and the reorganisation of the health system on corporatist models instead of direct state management may be regarded, despite all the shortcomings increasingly evident recently, as one of the reasons for the relatively successful transformation of the Czech healthcare system. The return to tradition could not, however, be complete, socialist practice has not been entirely abandoned, and at the same time the influences of the globalised world economy and mentality have been manifest here as well. For this reason the outcome is a peculiar mixture of heterogeneous elements, which from certain points of view may seem dysfunctional. Some elements of Czech post-transformation society are entirely specific and have no parallel in western society.

The *Longue durée* (in the Braudelian sense) of the institutions, values and behavioural norms of Czech society, which have their roots in the last decades of the Habsburg Monarchy and in the 1st Czechoslovak Republic, has been manifest in the field of health in the ability to resist the negative effects of the discontinuity of political regimes during the 20th century. The impact of changes has been filtered by institutions across the whole range of the spectrum. Political changes have moreover been opportunities for the foundation of new institutions, which have further or

embodied trends that originated in the womb of the preceding regime. In this respect the Czech Republic has avoided the kind of disintegration of institutions and abandonment of values that has occurred in other post-communist societies (for example Russia, and to a certain extent other east European countries like Rumania, but also Poland or Hungary) that have different traditions. The social capital of Czech society has also played a role here. One important component of the socially shared social capital was the existence of the independent state and the consciousness of national identity associated with it and the growth of civic society from the later 19th century, expressed in abundant creation of clubs and societies (including in the social welfare and health spheres –1880s–1918, 1918–1938, 1989–now). Although this element was perhaps the most suppressed under socialism, after 1989 it experienced immediate renaissance. The capacity to cope with change has also been strengthened by the tradition of universal access to education and professional qualification (from the 18th century). An educated work force, a good standard of general education, respect for work and discipline as a moral value continue to characterise the Czech environment. Political parties likewise have a rich tradition in this country going back to the later 19th century, and so it could be said that political affiliation is likewise a form of social capital, however, arguable (under the First Republic affiliation to political party affected more spheres than just politics, and for example towards the end of the socialist regime roughly 1/10 of the population were members of the Communist Party).

Since 1989 there has been deep social differentiation, but indifference to socially-based differences in health and access to health care have survived from the time of the "egalitarian society". Despite the well-grounded belief that social transformation has led to an accumulation of the effects of lack of education, poverty and unemployment in the form of poor health and higher mortality, these differences have not been sufficiently monitored. Regional differences in living standards, job opportunities, and distribution of positive and negative transformation effects also appeared to be enhanced. Since the social profits from the transformation have not been evenly spread, it is unlikely that the general improvement in health has been evenly spread or is something independent of social determinants. Although justice and equality is the proclaimed goal, in reality equality in health is essentially a taboo subject, since it is not empirically monitored.

From the point of view of the individual, social capital during the socialist era has consisted in a network of informal relationships that in the socialist period compensated for lacking market relations in distributing goods and services. After 1989 those who actively engaged in the process of privatisation and political life have profited from these networks. Another group of winners is composed of most of those who had family property restituted to them, and those who have managed to exploit their huge qualifications in market conditions (managers, computer specialists, lawyers). To sum up – young, healthy and educated people, particularly

men, and particularly inhabitants of larger towns, have proved the most capable of turning the opportunity of change to their advantage.

Although the transformation after 1989 is still viewed more positively than negatively, since it represented a return to democracy, civic society and the revival of respect for fundamental civil rights and liberties, increasing inequalities in wealth, status and health could mean a future risk that might lead to the destabilisation of society and threaten democracy. For this reason it is a theme worthy of greater attention, from the point of view of research and the point of view of practical political decision-making.

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Social Change and its Potential Impacts on Chinese Population Health

Hong Wang

Introduction

This chapter aims to analyze the relationship between social change and the population's health by presenting a case study of that relationship from the People's Republic of China (China). With a territory of 9.6 million square kilometers, it is ranked the third largest country in the world. It's population reached 1.25 billion in the year 2000, which ranks it the first in the world.[1]

China is considered one of few Socialist States in the world. Administratively, China is divided into 23 provinces (including Taiwan), 5 autonomous regions, 2 special administration regions, and 4 municipalities.[2] The government structure from the top to the bottom includes the Central Government, Provincial Government, Prefecture and City Government, District (in the urban area)/County (in the rural area) Government, and Resident Street (in the urban area)/ Township (in the rural area) Government. Although the Neighborhood Committee (in the urban area)/ the Village Committee (in the rural area) also plays administration roles at the bottom, below the resident street/ township government. It is considered, as the extension, not the formal entity within the government structure.

Within the past 25 years, China has experienced transformation of its economic system from a highly centralized planned economy toward a market oriented economic system. This process has led to massive and rapid changes in all aspects of society with profound effects on the population's health in the large parts of the country. Along with the material prosperity, the living conditions of Chinese people, such as food, shelter, and sanitation status, have been improving steadily. People have more capability to purchase health related merchandise as well as health

1 Atlapedia (2002). People's Republic of China, www.atlapedia.com/online/countries/china.htm.

2 *Statistical Yearbook*, (2000).

services. Overall the health status of most Chinese has improved but there are significant exceptions to this overall conclusion. These exceptions arise from increasing inequity of income, increases in unemployment rates, the decline of health insurance coverage, changes in demography, changes in social value, culture, health related behaviors, and the changes of health care systems.

This chapter is organized into five sections. The introduction section provides the background information including a brief summary of China's geographic and administration system and also the purpose of this case study. Section II, provides an overview of China's economic reform. Section III describes the major social changes brought on by this economic reform that have potentially both positive and negative influences on the population's health status. Section IV describes the current Chinese population health status, which reflect the mixed impacts by the economic and social change process. Then finally the policy implications and suggestions will be included in the last section V.

The Recent Economic Reforms in China

The Background of Chinese Economic Reform

Before 1979, the Chinese economy was organized on a central planning system. Under this system, most resources, such as goods, services and information, were produced and allocated as collective goods.[3] In urban areas, the allocation of labor to working units and enterprises was administratively determined through provincial and local labor bureaus. The assignment of individuals to the working units and enterprises reflected administrative goals, rather than individual or working unit's need and preference.[4] Almost all those of working age were guaranteed to get permanent jobs in the state-owned or collective-owned working units or enterprises.[5] The wage of the employees was set at a very low level by the government based on the working years, position, occupation, and education to meet basic needs for food and clothing with little variation. In addition, the working unit or enterprise was also responsible for providing welfare to its

3 A. Oberschall, 'The Great Transition: China, Hungary, and Sociology Exit Socialism into the Market', *American Journal of Sociology*, 101(4) (1996), 1028–41.

4 D. P. Coacy and L. Wang, 'Equity, Efficiency, and Labor-Market Reforms in Urban China: The Impact of Bonus Wages on the Distribution of Earnings', *China Economic Review,* 11 (2000), 213–231.

5 C. Fang,, X. Zhang, et al., 'Emergence of Urban Poverty and Inequality in China: Evidence from Household Survey', *China Economic Review*, 13 (2002), 430–443.

employees, which includes housing, healthcare, childcare, pensions and certain subsidized foods. Labor mobility across different working units and enterprises was tightly controlled and extremely infrequent.[6]

In rural areas, the farmland was owned by the state with farmers working collectively in the commune system. The government set very low prices for agricultural products. Farmers' earnings were quite equal but only sufficient enough to survive.[7] The commune system also provided certain welfare to the farmers, such as healthcare and child education.

Although Chinese government achieved its equalization goals under the central planning system described above, the productivity and efficiency of whole society was very low due to the lack of incentives and responsibilities. In addition, the continuing political movements, nature disasters, and international isolation severely distorted the Chinese economic development. By the end of culture revolution in 1976, China was still one of the poorest countries in the world.

Under the planning system, the government revenue is mainly from profitable state-owned and collective-owned enterprises.[8] Because of low efficiency and low productivity, many of these enterprises were losing money and required government subsidies. By the end of 1998,the government deficit reached to 13.5 billion Yuan, which are about 11.8% of the government revenue.[9]

The Major Approaches of Economic Reform

Once Xiaoping Deng took power in China in 1978, he launched the most recent economic reform, to transform the central planning economic system to a market oriented economic system and to modernize China in terms of its industry, agriculture, science and technology, and national defense system.

The economic reform was initiated by reforming the rural economy system. The collective economy was then replaced by the individual household responsibility system in the early 1980s. The financial incentive was that the farmers could receive direct economic rewards from individual productivity. The farmland was divided into small plots still under the ownership of the state. Each family makes a contract for its plot, agreeing to produce a certain quota of crops, which the state purchases

6 Coacy and Wang, (2000).

7 R. Zhang and M. S. Tam, 'Changes in Income Distributions in China in the Process of Economic Reform in the 1980s: A Welfare Approach', *China Economic Review* 2(1) (1991), 97–114.

8 R. S. Eckaus, 'Some Consequences of Fiscal Reliance on Extrabudgetary Revenues in China', *China Economic Review*, 14 (2003), 72–88.

9 Y. Zhang, and F. He, 'System Transition Induced by Fiscal Pressure', *From Planning Economy to Market Economy* (Beijing, China Finance Publish House, 1998).

at a relatively low fixed price. Then any output that exceeds the quota can be sold to the state or in the market at a higher bonus price.[10] In order to encourage farmers to increase their productivity and to increase the farmer's income, the government also increased the purchasing price of agriculture products while reducing the prices of agriculture production materials. These measures have succeeded dramatically.

Urban economic reform was introduced in the mid 1980s. Decentralization of government power (including decisions concerning resource allocation and renumeration) to working units and enterprises was an important feature. The enterprise manager was given greater autonomy in recruiting, dismissing, promoting and reallocating their employees. The bonus wage was introduced on top of the previous fixed standard wage, and was directly linked to an individual's productivity and enterprise performance.[11]

The second key element of the reform was to allow private, individual, and foreign-owned enterprises to compete with state-owned enterprises. In 1978, there were virtually no private-owned, and foreign-owned enterprises. Seventy eight percent of industrial production was from state-owned enterprises with the rest from collective-owned enterprises. By 1999, 44% of industrial production was from private, foreign and joint-owned enterprises and only 28.2% from state owned enterprises.[12]

Welfare reform started in 1996 with the aim of reducing the heavy burdens of welfare and to increase market competition. The central theme of this reform was to transfer welfare provision obligation, such as health care and housing, from enterprises to social insurance agencies and to individuals. This welfare system reform also reduced the employees' welfare ties with their employers and increased employees' mobility to change jobs and achieve higher earning potential.[13]

The Chinese government also established a series of special economic zones and opened its door to the world to increase the international trade and foreign investments, and to acquire advanced technology and management knowledge. The total value of import-export increased from 20.6 billion US dollars in 1978 to 474.3 billion US dollars in 2000.[14]

During the 1980s the central government also decentralized its fiscal system and implemented the "provincial contracting' system, which allows provinces to

10 W. C. Hsiao, 'Transformation of Health Care in China', *N Eng J Med.,* 310 (1984), 932–326.

11 Cacy and Wang (2000).

12 China Statistical Bureau, *China Statistical Yearbook 1997* (Beijing, China Statistical Publishing House, 1998) and China Statistical Bureau, *China Statistical Yearbook 1999* (Beijing, China Statistical Publishing House, 2000).

13 Fang, Zhang et al., (2002).

14 G. Long, 'The Opportunities and Challenges to the Policy of "Open the Door to the Outside" under the Globalization', *The New Stage of China Economy* (2002).

contract with the central government for a fixed revenue sharing quota: a base quota of shared revenues must be transferred to the central government, but all the revenues above this quota may be kept by the province. The shares of local government revenues in the total government revenues are between 60–85% during 1978–1993.[15] After implementing this financial reform, the financial status of local government has improved. Local governments have more motivation and capability to develop regional economy.[16] The second major government finance system reform was conducted in 1994. This reform separated the taxation system into central and local government taxations. The share of central government revenue in total government revenue has increased from 22% in 1993 to 56% in 1994[17], which significantly increased the central government's capability to cross-subsidy between rich and poor areas.

Health Related Social Changes Brought on by the Economic Reform

After the Economic Reform was initiated in 1978, the Chinese economy achieved impressive results in terms of both real GDP and per capita income. This reform also led to dramatic changes in living conditions, better education, improvements in nutrition, housing, and sanitation.

Economic Development

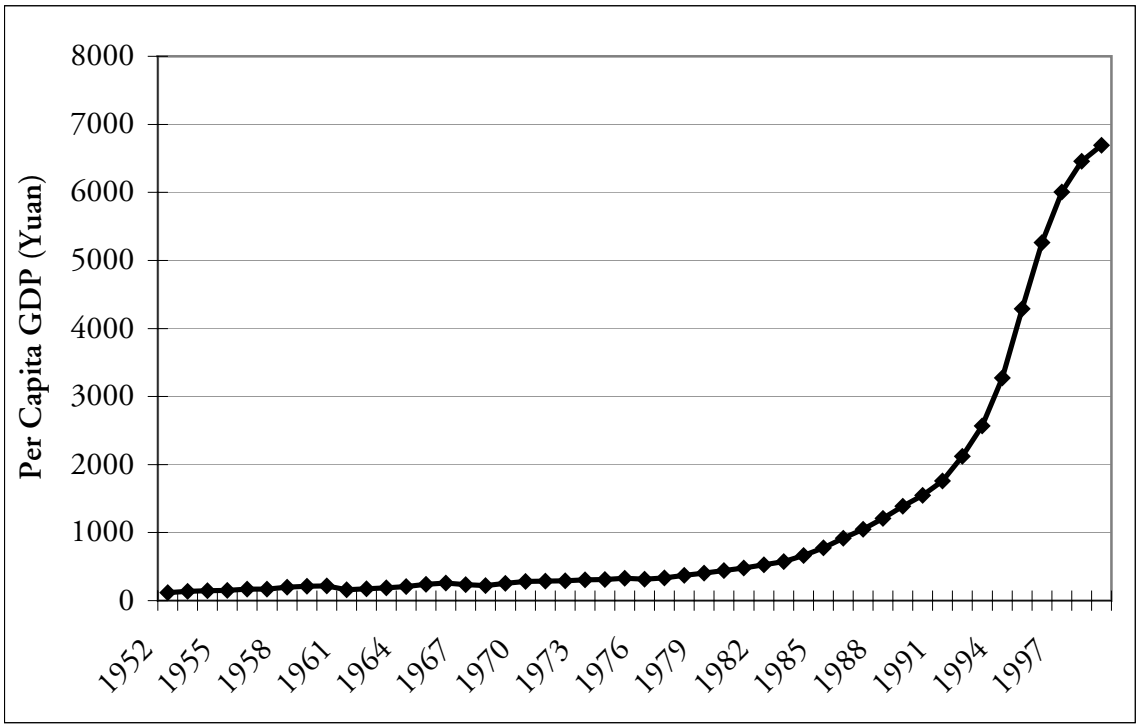
China's economy has grown dramatically since the economic reform in 1978. The average annual increase of the Gross Domestic Product (GDP) was 9.7% during 1978–1999 based on the index of GDP at comparable price, which is 3.2 percent point faster than the annual increase rate of the GDP before the economic reform during 1952–1977. After considering the factor of population increase, the average annual increase per capita GDP was 8.3% during 1978–1999 based on the index of per capita GDP at comparable price, which is twice as fast as the increases during 1952–1977 period (Figure 1).

15 H. Sheng, 'The Relationship between Fiscal System Reform and the Stability of Macro-Economy', *Market and Stability* (S. Zhang, 2001).

16 C. M. Grogan, 'Urban Economic Reform and Access to Health Care Coverage in the People's Republic of China', *Soc. Sci. Med*, 41(8) (1995), 1073–1084.

17 Sheng, (2001).

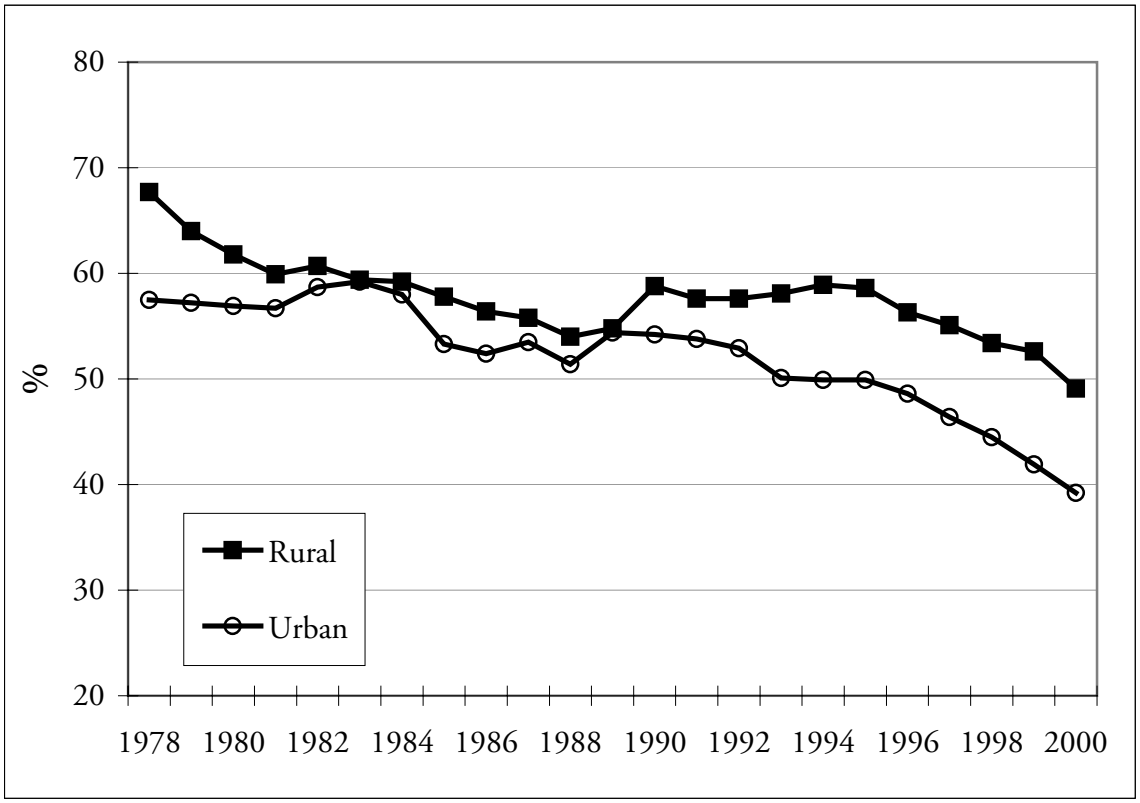
Figure 1. Per capita GDP at comparable price, 1952–1999.



Source: *China Statistical Yearbook 2000*, China Statistical Bureau.

The economic prosperity provided the premise for improving population living conditions. Food expenditure (as a proportion of total expenditure) declined from 57.5% in 1978 to 39.2%; it declined by about 18% for both urban and rural population (Figure 2). People had more capacity to consume other goods such as education and health services to improve the quality of life.

Figure 2. Percentage of food consumption in total consumption in rural and urban China 1978–2000.



Source: *China Statistical Yearbook 2001*, China Statistical Bureau.

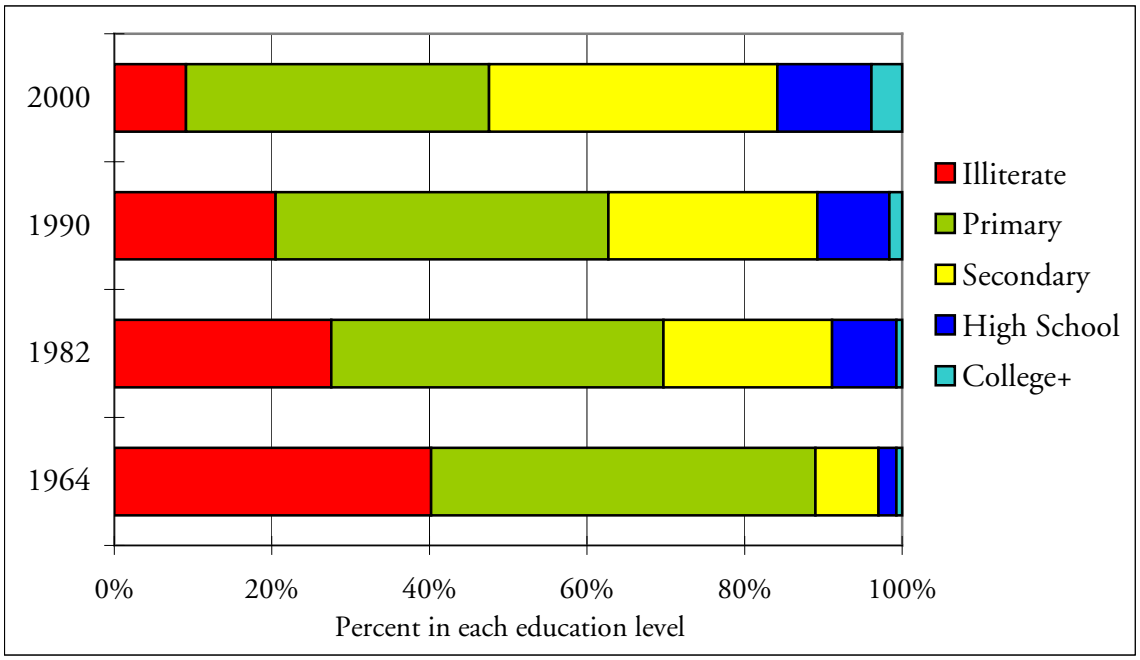
Education, Housing, and Nutrition

Based on the population census data, the illiteracy rate declined from 22.9% in 1982 to 6.7% in 2000. The proportion of the population who had college or higher education increased from 0.6% in 1982 to 2.9% in 2000 (Figure 3). The percentage of college students in the schools increased from 8.9% in 1978 to 46.0% in 2000.[18] It is expected that higher education would lead to better health status.[19]

18 China Statistical Bureau, *China Statistical Yearbook 2000* (Beijing, China Statistical Publishing House, 2001).

19 P. Farrel and V. R. Fuchs, 'Schooling and Health: The Cigarette Connection', *Journal of Health Economics,* 1 (1982), 217–230; J. K. House and J. M. Lepkowski, 'The Social Stratification of Aging and Health', *Journal of Health and Social Behavior*, 35 (1994), 213–234; M. Grossman, 'The Human Capital Model of the Demand for Health', *Handbook of Health Economics* (Cambridge, MA, National Bureau of Economic Research, Working Paper 7078, 1999).

Figure 3. Percentage of population at educational level 1964–2000.



Source: *China Statistical Yearbook 2001*, China Statistical Bureau.

Both rural and urban areas have witnessed an extraordinary boom in house construction since 1978. In the rural area, per capita measure of housing increased from 8.1 square meters in 1978 to 24.8 square meters in 2000. In the urban area, this figure increased from 3.6 square meters to 10.3 meters. Within 23 years, the housing size per capita increased 3 times in both urban and rural areas.[20] The quality of housing also improved. Many new houses in the rural area were constructed of bricks, tiles, or reinforced concrete, whereas the older stock of housing was often built of adobe walls and thatched roofs.[21]

With the economic growth, the Chinese nutrition status also improved. In the urban area, the consumption of grain declined to 85kg per capita per years in 1999 (58% of the consumption in 1981). While the consumption of meats, fish, shrimps, cooking oils and eggs increased. The consumption of the rural population shared the same trends with the urban population (Table 1 in Tables). The nutrition status of the Chinese population, especially rural population, improved significantly.

20 China Statistical Bureau, *China Statistical Yearbook 2000* (Beijing, China Statistical Publishing House, 2001).

21 T. Mckinley and L. N. Wang, 'Housing and Wealth in Rural China', *China Economic Review*, 3(2) (1992), 195–211.

Sanitation and Clean Water

In the urban area, the percentage of the coverage of pipe water supply has been increased from 32% in 1952 to 96% in 2000. Unlike drinking water, the human waste sanitizing rate in urban area is relatively low. Only 55% human waste has been sanitized in 1997. It is predicted by the Ministry of Construction that by 2010, the urban pipe water coverage will reach to 100% and the human waste sanitizing rate will be 85% in urban China.[22]

In the rural area, nearly 55.2% of the rural population accessed the pipe water system in 2000, which is 35 percent point higher than the figure in 1987. About 44.8%of the rural households have built the toilet with the sanitizing process in 2000.[23]

Health Care System Development

One year after the economic reform, China initiated its health system reform.[24] Many measures that were used in other economic sectors were also adopted in the health sector – decentralizing the power of the resource allocation to health care institutes; allowing private, individual, and foreign-owned health institutes to compete with state-owned institutes; using bonus wages and rising certain services prices as the economic incentives to improve doctors productivity; and cutting operational costs of services in order to improve efficiencies. These reforms successfully solved some problems that existed in the previous system, such as the shortage of supply to meet increased health demands of the population and inefficiency due to the lack of economic incentives. The health care resources are continuing to grow, the number of health institute increased by 8.3%, the number of hospital bed per 1000 population increased by 5.6%, and the number of doctor per 1000 population increased 7.1% during 1978–1999.[25]

Nevertheless, certain aspects of the social changes brought on by this rapid economic development have potential negative impacts on the population's health. These impacts come from the increases in distribution of income, increases in unemployment rates, changes in emography, changes in social value, culture and

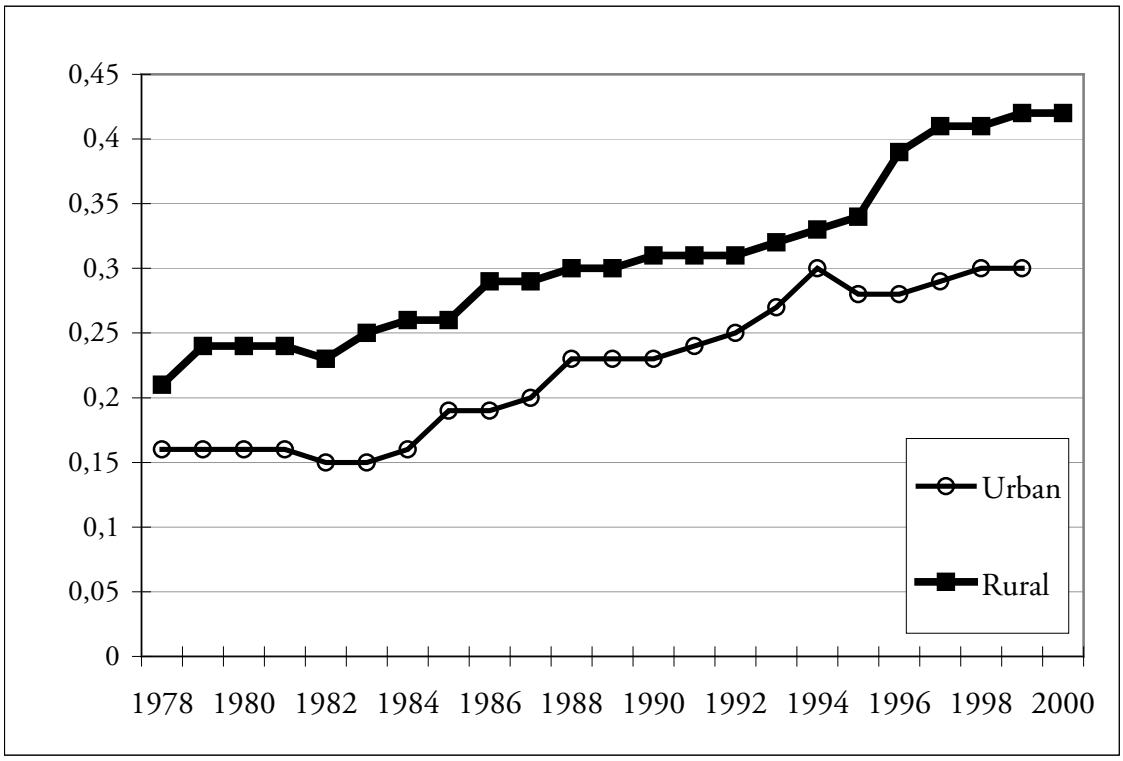
22 X. Li, 'The Trend and the Strategies of the Development of Urban basic construction.Beijing'. Minstry of Construction, www.stats-sd.gov.cn/cxjs/cjdt/csjj.htm. (1997).

23 Patriot Health Campaign Committee, 'Provincial Summaries of "Ninth Five Year Plan" and the Plans of "Tenth Five Year Plan" on Water and Toilet Improvement' (Beijing, 2002).

24 R. Peng, R. Cai, et al., *China Reform: The Edition of Health System Reform* (Dalian, Dalian Publishing House, 1992).

25 China Statistical Bureau, (2001).

Figure 4. China Gini Coefficient 1978–2000.



Source: Zhao and Wang 2002.

health related behaviors, the decline of health insurance coverage, and the changes of health care delivery systems.

The major critiques of the Chinese economic reforms focus on the issue of inequality. Almost two decades into the implementation of the "get rich first" policy, the Gini coefficient, the indicator that measures income inequality, increased from 0.16 in 1978 to 0.30 in 1999 in urban China, and from 0.21 in 1978 to 0.42 in 2000 in rural China (Figure 4). Per capita GDP in Shanghai is 37,382 Yuan, while it is only 2,895 Yuan in Guizhou in 2001 (Table 2 in Tables). The income gap between the urban and rural was 2.9 times different at the beginning of the economic reform this declined to 2.3 during the initiation period of the reform during 1978 and 1985, while the economic reform was mainly focused on the rural economic reform. But this gap has increased since 1986 reaching 3.5 times difference by the late 1990s.[26]

26 China Statistical Bureau, (2001).

Research suggests that these income disparities could have had negative impacts on the distribution as well as the level of the population health status.[27] The experiences from advanced economies indicate that rapid economic growth can cause critical social insecurities and health problems. Rapid economic growth has always brought serious disruption: environmental, ideological, and political. As a result the relationship between economic growth and population health is complex since such disruption always threatens to spill over into deprivation, disease and death.[28] To attain a higher income, people may need to engage in occupations that have more stress and strain and greater exposure to risks.[29] Rising income may also be associated with consuming adverse diets and exercising less (will be discussed in the following paragraphs), all resulting in the worse health status.

Unemployment and Floating Population

Although society became more efficient through decentralization, privatization, and market competition, the unemployment has increased. For decades, the word "unemployment' was taboo in Mainland China. In the 1980's, surplus workers from various enterprises were described as "job-awaiting people".[30] Based on the official 1999 report from Ministry of Labor and Social Security in China, the urban registered unemployment is 5.7 million, and the urban registered unemployment rate is 3.1%.[31] However, many studies show the unemployment problems to be more severe than this figure indicates.[32] It is estimated there are 15 million people,

27 R. G. Wilkinson, 'Income Distribution and Life Expectancy', *British Medical Journal,* 304 (1992), 165–68; Y. L. Liu, W. C. Hsiao, et al., 'Equity in Health and Health Care: the Chinese Experience', *Social Science & Medicine*, 49(10) (1999), 1349–1356.

28 S. Szreter, 'Rapid Economic Growth and "the Four Ds" of Disruption, Deprivation, Disease and Death: Public Health Lessons from Nineteenth-Century Britain for Twenty-First-Century China', *Tropical Medicine and International Health*, 4(2) (1999), 146–152.

29 M. Rosko, and R. Broyles, *The Economics of Health Care* (Westport, Connecticut, Greenwood Press, Inc., 1988).

30 F. Shan, 'Unemployment in Mainland China: Current Situation and Possible Trends', *Issues & Studies*, 32(10) (1996), 75–84.

31 Ministry of Labour and Social Security, *Yearbook of China Labour, 1999* (Beijing, China Labour and Social Security Publishing House, 2000).

32 J. C. B. Leung, 'The Political Economy of Unemployment and Unemployment-Insurance in the Peoples-Republic-of-China', *International Social Work*, 38(2) (1995), 139–149; L. Wong, and N. Kinglun, 'Unemployment and Policy Responses in Mainland China', *Issues & Studies*, 33(1) (1997), 43–63; G. P. Mao, and Y. Higano, 'Measurement of Concealed Unemployment in Shanghai', *International Regional Science Review*, 21(1) (1998), 59–78; E. X. Gu, 'From Permanent Employment to Massive Layoffs: the Political Economy of 'Transitional Unemployment' in Urban China (1993–8)', *Economy and Society*, 28(2) (1999), 281–299; V. Mok, 'Post-Mao Economic Transition: The Role of Non-State Enterprises', *Issues & Studies*, 36(2) (2000), 1–31.

which is three times higher than the registered unemployment figure, are unemployed, lost their job, or are awaiting for a job in 1999.[33]

Based on a study of 4000 households from 13 cities in six provinces in 2000, as many as 11% of urban workers had been retrenched, and 53% of these remained unemployed. The risk of retrenchment was higher for women, the less educated, the low skilled, the middle-aged, and those employed by local government or urban collectives. The duration of unemployment is longer for the unhealthy, the less educated, and woman with young children.[34] Those people who lost their job not only lost their income, but also lost or partially lost their welfare including health insurance, which made it more difficult for them to access health care services. The frustration and pressure due to the loss of a job also had a potential impact on their health status.

The surplus of the labor force in rural China also became a significant social issue. As described in the previous section, the rural economic reforms have greatly mobilized farmers to improve their productivity. However, the increase of productivity also produced the surplus of labor. It is estimated that about 1/3 of farmers, which is about 150 millions, became surplus labor in rural China. With the economic development in urban China, many farmers moved to the urban area to find better and more profitable jobs. It is estimated that there is about 100–140 million floating population in urban areas since 1997 (which include both people from rural to urban and from one urban to other urban areas). This floating population has become one of major sources of labor for urban development. However, it has also created a series of social problems. They are not integrated into the urban health care system with no health insurance and limited access to community health services. Isolated in the city, casual and commercial sex became very prevalence in this population. They have become a high-risk population of sexual transmitted disease and HIV/AIDS, and the "bridge population" to transmit these diseases to the others.

Demographic Change

With the birth rate and mortality rate declining and the life expectancy rate increasing, the aging of the population accelerated after the economic reform. The percentage of people over 65 years old had increased from 4.9% in 1982 to 7.0% in 2000 (Table 3 in Tables). It estimated this figure would be up to 14%, which is

33 J. Tang, The Report on China Urban Poverty and the Relapse of Poverty (Beijing, Huaxia Publish House, 2002).

34 S. Appleton, J. Knight, et al., 'Labor Retrenchment in China, Determinants and Consequences', *China Economic Review*, 13 (2002), 252–275.

similar to Japan's current status, in 25 years.[35] Based on the study of National Health Service Survey in 1993, the per capita illness day for the elderly (age 60 and above) is 64 days, which is 3.8 times higher than the general population.[36] It is expected that chronic diseases as well as disability will be more prevalence in the population. The demand for the health service utilization for these chronic diseases will increase.

The caring system for the elderly has also changed gradually. Traditionally, Chinese had a large family with three or more generations living together with different generations playing different roles in the family. The mid-aged family members acting as careers to their parents. Many grandparents in turn take care responsibility for their grandchildren. With the improvement of living conditions and culture changes, fewer families had more than two generations living together in the same household. Family size reduced from 4.4 persons per household in 1982 to 3.4 persons per household (Table 3 in Tables). The responsibilities of caring for the aged population and children gradually switched from family to the society.

The Change of Social Value, Culture

After the economic reform, Chinese social values and culture also changed drastically. Before the economic reform, political and moral rewards were the major incentive for people to work for society. After the introduction of market economy, economic incentive becomes the major mechanism of rewarding people's productivity. "Political person" becomes "economic person". Based on the study of the criteria of selecting a spouse, the peoples preference had been shifted from "family political background' and "personal political status" to "better occupation", "high income", and "better housing" (Table 4 in Tables).

The second change is that the collectivism had been weakened and the individualism had been strengthened. The Chinese people used to work collectively and share the responsibility, benefit, and economic gain evenly with his/her colleagues who work in the same working unit, state-owned or collective-owned enterprises, and collective-owned farming community. After the economic reform, individual contribution had been rewarded individually. The personal difference from others had been encouraged by the society.

The third change is that the social capital has been weakened. Traditionally, the Chinese social network was built upon the family ties, relatives and people who come from the same community. After the introduction of market economic, those

35 K. Chen, *Aging issue in China: The Problems and Their Solution* (Beijing, China Union Medical School Publishing House, 2002).

36 Ministry of Health, *Research on National Health Services* (Beijing, Ministry of Health, China, 1994).

traditional relationships are gradually replaced by the relationships of economic ties and sharing common interests. Due to the corruption and inconsistency of government policy, people are less and less trusting of the government. Recent evidence from the developed world suggest that the decline of social capital could have a negative impact on the population's health status.[37] Changes in social values also increased the cost and difficulties in mobilizing the population for public preventive activities, such as environmental protection, sanitation, and health education.[38]

The Change of Health Related Behaviors

Key health behaviors such as diet, smoking and drinking have also accompanied economic reform. China's food consumption has changed from traditional low fat, high vegetable diet to "Western-style" high fat, meat based diet.[39] This is resulting in a disease pattern that is shifting toward the chronic "Western-style" disease pattern.[40] Such disease patterns are believed to be closely correlated with the over consumption of fatty food, dairy products, sugar, alcohol and tobacco.[41]

China is the largest tobacco producer and consumer in the world with one third of all smokers in the world being Chinese.[42] Based on China's Second National Survey of Smoking in 1996, the smoking rate was 37.6% overall, 66.9% for men and 4.2% for women. Heavy smokers, those who smoke at least 20 cigarettes per day, have rates of 4.1% for the total population, 7.5% for males, and 0.2% for females.[43] These rates have been increasing as compared to data from the 1984 National survey and, in addition, the starting age decreased.[44] It has been predicted

37 I. Kawachi and L. Berkman, 'Social Cohesion, Social Capital, and Health', *Social Epidemiology*, L. Berkman and I. Kawachi (Oxford, Oxford University Press, 2000), 174–190.

38 Y. Liu, 'Historical Review of Social Mobilization Measures', *Strategy and Management*, 4 (1999).

39 S. Du, B. Lu, et al., 'A New Stage of the Nutrition Transition in China', *Public Health Nutrition*, 5(1A) (2002), 169–74.

40 C. J. Smith, '(Over) Eating Success: The Health Consequences of the Restoration of Capitalism in Rural China', *Soc. Sci. Med.*, 37(6) (1993), 761–770.

41 J. Chen, Diet, Life-Style and Mortality in China: A Study of the Characteristics of 65 Chinese Counties (Oxford, Oxford University Press, 1990).

42 T. H. Lam, Y. He, et al., 'Mortality Attributable to Cigarette Smoking in China' *JAMA*, 278(18) (1997), 1505–08; People's Daily, 'China Faces Hard Job to Control Smoking', *People's Daily* (China, 2000).

43 G. H. Yang, *1996 National Prevalence Survey of Smoking Pattern* (Beijing, China Science and Technology Press, 1997).

44 Yang, (1997).

that half of male smokers will die between the ages of 35 and 65.[45] The increase in the already high prevalence of smoking in China shows the urgency of preventing new smokers and also of reducing the number of current smokers.

Sexual freedom, increased promiscuity, economic incentives, mobility of population and increasing disparity between the rich and poor leading to a rise of commercial sex are major factors that drive the rise of Sexual Transmitted Diseases (STD). Based on the government statistic report, the incident rate of gonorrhea increased from 6.84 per 100,000 populations in 1990 to 18.31 per 100,000 populations in 2000. The incident rate of syphilis also increased from 0.093 per 100,000 populations in 1990 to 4.73 per 100,000 populations in 2000 (Table 5 in Tables). The number of HIV infected persons already reached to 850,000 cases in 2002 based on the government estimation; figures from international organizations are much higher.[46]

Change of Health Care Financing and Health Delivery System

One of the most striking health care problems is the inequality of access to the services. Based on the rural household survey conducted by the Ministry of Health in 1986, about 29% were unable to be hospitalized due to unable to afford the high cost of hospitalization.[47] This figure increased to 64% in 1998.[48] The decreased accessibility of health care service is not only influenced by economic and social changes, such as the inequality of income, but also is related to the health care system transition itself, such as the change of health care financing and the reform of health care delivery system to a market oriented system.

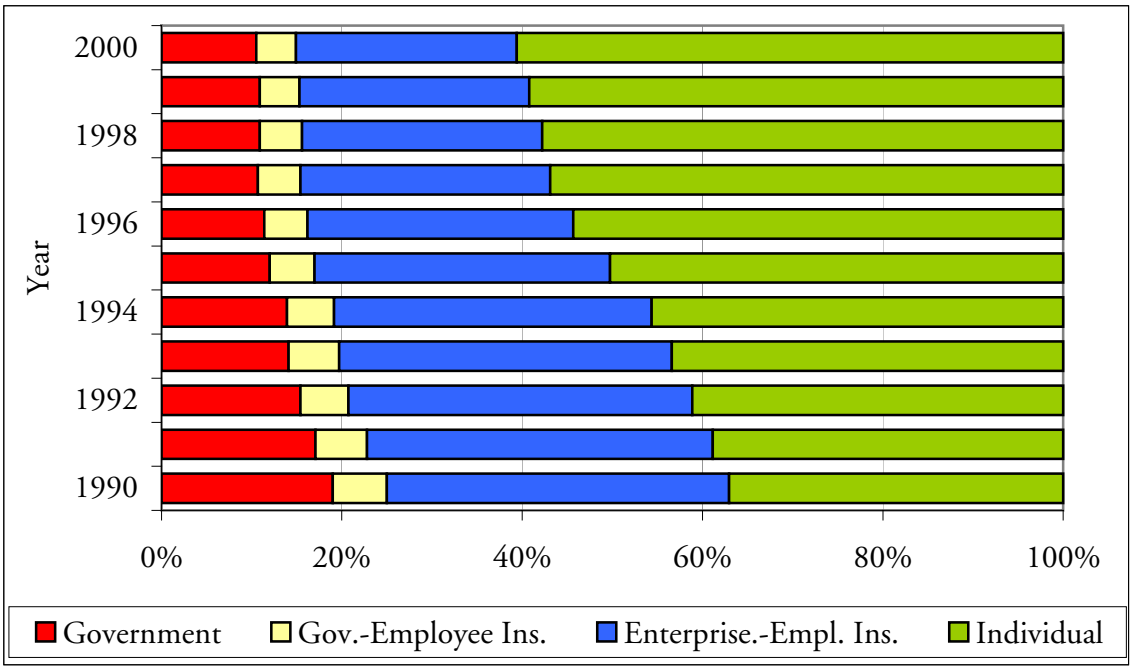
45 T. H. Lam, S. Y. Ho, et al., 'Mortality and Smoking in Hong Kong: Case-Control Study of All Adult Death in 1998', *BMJ*, 323 (2001), 1–6.

46 P. M. Gorbach, C. Ryan, et al., 'The Impact of Social, Economic and Political Forces on Emerging HIV Epidemics', *AIDS*, 16(Suppl 4) (2002), 35–43.

47 Ministry of Health, *Research on National Health Services* (Beijing, Ministry of Health, China, 1986).

48 Ministry of Health, Research on National Health Services-An Analysis Report of the Second National Health Services Survey in 1998(I) (Beijing, Ministry of Health, China, 1999).

Figure 5. Sources of health care financing in China 1990–2000.



Source: Cai 2002.

Change of Health Care Financing

There are three major sources of health care financing, the government, the employer, and the individual. All of these three sources increased in terms of the absolutely values of health expenditure during 1990–2000. However, due to the increase of individual expenditure, it is much faster than government and employer's expenditure. The share of individual expenditure in total health expenditure increased from 37% in 1990 to 61% in 2000, while the shares of other resources all declined. The decline of the share of government expenditure for the public is the most stark, almost reduced to the half of its share in 1990 (Figure 5).

The decline of health insurance coverage is considered the major reason for the rapid increase of individual health expenditure. In the urban area, health insurance systems are mainly employment-based schemes (i.e. Government Employee Health Insurance and Enterprise Employee Health Insurance). Increasing unemployment in both the private and public sector has led to a sharp decline in social insurance coverage (Table 6 in Tables). In addition, with the cost containment concern, the originally "free" public health insurance system has been replaced by commercial-like health insurance schemes with a variety of cost sharing mechanisms, such as indemnity, deduction, co-payment, and coinsurance measures.[49] These cost sharing

49 W. C. Yip and W. C. Hsiao, 'Medical Savings Accounts: Lessons from China', *Health Affairs*, 16(6) (1997), 244–251; T. W. Hu, M. Ong, et al., 'The Effects of Economic Reform on

mechanisms also increase the individual health expenditure and financial burden for people using medical services.

Before the economic reform, Cooperative Medical System (CMS) was the insurance scheme in rural China to cover the major health expenditure. Ninety three percent of rural villages were covered by the CMS in 1976.[50] The major source of funding for this insurance scheme relied on the collective economic, the commune system. However, with the replacement of individual responsible system to the collective economic system, CMS collapsed due to the loss of financial support and political interferences. By the time of 1990, only 6.1% of villages have kept the CMS system (Table 7 in Tables)[51] and only 5% of rural residents were covered.[52] Although there were numerous attempts for restoring rural health insurance during 1990s, most of these attempts failed due the lack of policy support, lack of willingness and capacity to pay for the insurance premium by individual farmers, and lack of capacity of the management of CMS. The rural health services are now largely provided by individual rural doctors paid by fee-for-service payment method. Only those patients who have the ability-to-pay for these services are able to access these services.[53]

The decentralization of the government fiscal system also has a potential impact on the inequality of access health care services. As part of the general decentralization of the government authority, the structure of government health care financing was changed so that each level of government was directly responsible for maintaining the health institutions under its administration.[54] For example, central government finances only the national hospitals, research institutes, and medical schools, which report directly to the central government. Each province or county is responsible for its own public services, including health care education and welfare, thus, a prosperous county may be able to provide generous health care and a poor county may have to settle for less.[55]

Health Insurance and the Financial Burden for Urban Workers in China', *Health Economics*, 8(4) (1999), 309–321.

50 X. Feng, S. Tang, et al., 'Cooperative Medical Schemes in Contemporary Rural China', *Soc. Sci. Med.*, 41(8) (1995), 1111–1118.

51 Feng, Tang et al. (1995).

52 X. Gu, G. Bloom, et al., 'Financing Health Care in Rural China: Preliminary Report of A Nationwide Study', *Soc. Sci. Med.*, 36(4) (1993), 385–391.

53 W. C. L. Hsiao, 'The Chinese Health-Care System – Lessons for Other Nations', *Social Science & Medicine*, 41(8) (1995), 1047–1055.

54 G. E. Henderson, J. S. Akin, et al., 'Trends in Health Services Utilization in Eight Provinces in China, 1989–1993', *Soc. Sci. Med.*, 47(12) (1998), 1957–1971.

55 Hsiao, (1984).

The diffusion of economic reform has transformed health care institutions from heavily subsidized welfare institutions to marketed oriented cost recovery and surplus/profit driven entities. In order to improve the efficiency and productivity, the government has adopted these following major approaches to reform health care system.

First, the government limited public funds available for health care institutions, covering only basic personnel wages and certain new capital investment, which were about 25–30% of health institutes' cost, thereby leaving the health institute to recover the other 70–75%.[56]

Second, the government used different price policies in order to encourage particular patterns of health care usage. Prices for most basic health services have been kept low, based on historical fees set in the 1950s. However, the prices are established higher than their cost for new and high technology services. Hospitals and doctors were also allowed to keep 15–25% mark up from selling the drugs.[57] In order to reduce cost and increase competition, the drug distribution system also changed. Hospitals and clinics are allowed to purchase drugs directly from drug companies, factories and retailers with lower prices. This policy has enabled them to make profits from selling drugs. However, hospitals and clinics may purchase low quality drugs in order to earn more or for more commissions to the individuals who is in charge of purchasing drugs on behalf of hospital and clinics.[58]

Third, the government gave health institutes a large degree of financial independence. As in the economic sector, the bonus wage has been introduced as the economic incentives to improve doctors' and other medical staff's productivity. The bonus wage is from the profits of health institutes. There is thus strong incentive for doctors to provide highly profitable services to the patients, such selling more drugs and providing more high-technology services.

Fourth, the government allowed private ownership of health institute and private clinical practices to compete with public-owned health institutes. Private investment in new health institute was promoted by allowing them to charge higher fees than allowed by public-owned institutes.[59] The services that provided by those private-owned health institute are driven by the demand of health care market.

With all those reform approaches described above, the productivity of health institute, doctors income, health care investment and health care expenditure all

56 Hsiao, (1995).

57 Hsiao, (1995).

58 H. Dong, L. Bogg, et al., 'Drug policy in China: Pharmaceutical Distribution in Rural Areas', *Soc. Sci. Med.*, 48 (1999), 777–786.

59 Hsiao, (1995)

increased. Per capita health expenditure increased from 11.4 Yuan in 1978 to 364.2 Yuan in 2000 (Table 8 in Tables).[60] Cost inflation became another barrier to access to health care services.[61]

The Change of Public Health System

China has a long history of recognizing that the disease prevention is a very important issue in terms of human survival and socio- economic development. The idea of "prevention is better than cure" comes from the earliest Chinese Medicine treatise*, Huangdi Neijing* which was written over a period, from 206 B.C. to 8 A.D.[62]

After the Liberation in 1949, in order to put the principle of "preventive service should be the first priority among health services"[63] into practice, the Chinese government established public health administration agencies as well as the preventive service system called Epidemic Prevention Station system (it was renamed to Center for Disease Control and Prevention) at each administration level. Although public health plays a very important role in controlling communicable disease and improving population health, the total expenditure on public health services provided by EPS/CDC is very limited. Based on estimates from the National Health Account Research Team, the revenues of EPS and other disease control and prevention institutes (the expenditures from all sources on these institution services) increased four-fold from 2027 million Yuan in 1990 to 8150 million Yuan in 1998. Still this was a slight decline as a share of the total health expenditure from 2.36%t in 1990 to 2.1% in 1998 (Table 9 in Tables).[64]

Public health institutes, including the EPS, were traditionally financed completely by the government and provided free public health services.[65] However, after the economic reform, these public health institutes were no longer considered pure welfare entities. The government provides a fixed budget to each public health

60 R. Cai, *Developing Health Care System and Improving Health Status*. Conference on Macro-Economy and Health (Beijing, China Health Economic Institute, MOH, 2002).

61 X. Z. Liu and W. C. L. Hsiao, 'The Cost Escalation of Social Health-Insurance Plans in China – Its Implication for Public-Policy', *Social Science & Medicine*, 41(8) (1995), 1095–1101.

62 Z. Cheng, and Z. Song, *Brief Medical History* (Beijing, Beijing Medical University and Beijing Union Medical University Joint Publishing House, 1990).

63 S. Huang and S. Lin, *Contemporary Chinese Health System* (Beijing, China Social Science Publishing House, 1986).

64 G. Liu, Y. Zhao, et al., 'Study on the Allocation for Chinese Health Accounting in Health System', *Chinese Journal of Health Economics*, 20(2) (2001), 29–33.

65 D. Yu and J. Meng, 'The Study on Financial Operational m Mechanism within Health System', *Improving Health Economic Policies* (S. C. P. R. Group. Beijing, China Economic Publishing House, 1996), 57–75.

institute to cover staff salaries and a parts of the services cost. Although certain public health services are still free for the public (paid for by local government), such as the vaccines in EPI, and random monitoring of sanitation in public sites, drinking water and foods, a significant portion of the services were allowed to charge for services, in order to generate additional revenue to compensate shortfall in the government budget.[66] The results of the National Health Services Survey in 1998[67], which included data from 130 EPSs, showed that only about 38% of the EPSs' revenue came from the government budget in 1997. Fifty eight percent of the EPSs' revenue came from their service charges, for health services such as physical check-up for people who work in food industries, and health monitoring and inspection (Table 10 in Tables). With these additional charges, the EPSs are able to recover their costs and have an average surplus of about 86,000 Yuan per institute per year.

The positive effect of the fixed government budget for EPSs has increased financial accountability of the institutes, resulting in the reduction of waste. It also gave incentives to EPSs to expand their public health services to new areas and new population groups. Thus they now provide additional services, such as testing the safety of the new construction materials, water purifying devices, and so on, and new immunizations (not included in the EPI program) to cover certain high risk population groups. However, these policies also had negative effects, with high social costs. Since the public health services have been divided into user's charge and non-user's charge categories, it creates incentives for EPSs to over- provide the services that can bring additional revenues to the institutes, such as sanitation inspections (the food industry, restaurants, hotels, and industries which discharge pollutants and have risky working conditions, primary schools, etc. are subject to inspections by EPSs), and to under-provide the services that do not bring additional revenues to the institutes ,such as immunization and monitoring of diseases.[68]

The bonus wage was also introduced into public health system. The amount of bonus wage is linked with the revenues that department could bring by user's charge. Since the services that allow having user's charge are different by department, the amount of bonus varies by 4–5 times across different departments within EPS/CDC. This economic incentive has distorted performance of various public health activities.

It is estimated that there are about 1.2 million rural doctors and health assistants and 699,000 health posts (some health posts have more than one staff member). The collectives own 41% of these health posts and the rest of them are owned by

66 X. Liu, 'Financing Reforms of Public Health Services in China: Lessons for other Nations', *Social Science & Medicine*, 54(11) (2002), 1691–1698.

67 Ministry of Health, (1999).

68 Liu, (2002).

individuals.[69] Their revenues are mainly from the providing of medical services to the patients based on fee-for-service payment method. Although some of rural doctors receive certain fixed amount subsidies from government to conduct essential disease control and prevention programs, and the government still requests rural doctors to play important roles in disease prevention and control, there is no incentive for them to play very active roles in activities for environmental sanitation, vector control, and health education.

The Changes of Population Health Status

As described above, the rapid economic development and social change produced mixed effects on population health status. On the one hand, the materials prosperity provided the premise to improve population health status. These included the increase of income, better education, better housing and nutrition status, and more and better health care services. On the other hand, several social problems brought on the economic reform have the potential negative impacts on population health. These factors include the income inequalities, unemployment, poverty, floating population issues, the decline of social capital, and decline of access health care services. The current Chinese population health status reflects the results from both contrary effects.

Level of Population Health Status: Mortality and life Expectancy

Since 1949, Chinese health status has increased dramatically. Mortality decreased from 18 per 1000 in 1950 to 6.4 per 1000 in 2000. The infant mortality rate declined from 196 per 1000 live births in 1950 to 33.1 per 1000 in 2000. Life expectancy increased from 30.5 in 1949 to 71.4 in 2000 (Table 11 in Tables). The attributions of these health status improvements are the rapid economic development, innovative health system development, and massive public health movements.

However, population health improvement has been slowed down recently and is not consistent with the speed of economic development. GDP per capita increased 4% annually during 1950–1980 whilst life expectancy increased 2.1% per year, and infant mortality declined 5.1% annually at the same period. During 1980–2000, GDP per capita increased 8.3% annually, almost twice as fast as the speed before 1980. Life expectancy increased only 0.3% per year, and infant mortality declined

69 Ministry of Health, *2001 Communique of Health System Development Statistics* (Beijing, Ministry of Health, China, 2002).

1.6% annually, which is much lower than the speed before 1980.[70] Other studies also sow that despite rapid economic growth and improvement in literacy rates, the mortality rate for children under the age of five has not changed since 1985[71], the infant mortality rates have remained virtually unchanged and the average life expectancy has changed little since the mid-1980s.[72]

Although it is arguable that there is potential effect of marginal return decline once economic development as well as health status reach to certain levels, the potential negative effects brought on by the rapid economic and social transitions should not be neglected due to this reason.

Distribution of Population Health Status: Inequality of Health Status

There is also disparity of population health status across the urban and rural, rich and poor in China. Life expectancy is reported to range from 74.5 years in big city areas to 64.5 years in the poorest rural areas. The infant mortality rate is ranged from 15.8 per 1000 life birth in big city areas to 71.8 per 1000 life birth in the poorest rural areas, also with a significant gradient from rich to poor areas. The prevalence of disability also shows a similar pattern; it ranges from 6.3 per 1000 population in big city areas to 12.4 per 1000 population in the poorest rural areas (Table 12 in Tables).[73]

The disparity of population health status has also widened over the course of economic transition. Evidence shows that infant mortality declined by about 4% in poor provinces while it declined by about 33% in rich provinces during 1983 and1993 period.[74] As an indicator of this gap, the Ratio of Infant Mortality Rate (IMR) between rural and urban areas has increased from 1.67 in 1981 to 1.75 in 1990 and to 2.93 in 1993.[75]

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70 A. Hu and L. Hu, *China Macro-economy and Health*. Conference on Macro-Economy and Health (Beijing, China Health Economic Institute, MOH, 2002).

71 N. Chen, 'Effect of Society and Economy Development on Infant Mortality Rate in China', *Health Economics Research*, 2 (2003), 9–12.

72 W. C. L. Hsiao and Y. L. Liu, 'Economic Reform and Health – Lessons from China', *New England Journal of Medicine*, 335(6) (1996), 430–432.

73 Y. L. Liu, K. Rao, et al., 'China: Increasing Health Gaps in a Transitional Economy', *Challenging Inequalities in Health: From Ethics to Action*, T. Evens, M. Whitehead, F. Diderichsen, A. Bhuiya and M. Wirth (Oxford, Oxford University, 2001), 77–89.

74 Chen, (2003).

75 Liu, Hsiao et al., (1999).

Structure of Population Health Status: the Leading Causes of Death

Like many other countries, China has experienced a shift in the leading cause of death from acute infectious diseases to chronic conditions. In the urban area, infectious diseases and pulmonary tuberculosis were the number 2 and 3 leading causes of death in urban China in 1957. These two causes dropped to number 6 and 8 positions before economic reform (1975). By 1993, infectious diseases were no long among first ten leading causes of death in urban China. Instead, cancer, heart disease, and cerebrovascular disease become the first three leading cause of death in 2000 (Table 13 in Tables). The death due to accident, injury, poisoning and mental health disease is also in the raising trend. Rural China also followed urban transition pattern but with slow trend. By 2000, death due to pulmonary tuberculosis is still in the first ten leading cause of death in rural China (Table 14 in Tables).

The health transition depicted above stems from the dramatic decline in fertility (and the resultant change in the age structure of the population) as well as the successful reduction of infectious diseases' morbidity and mortality. It also reflects the results of social changes due to the most recent economic reform in China. Material prosperity due to economic reform played a more important role in the decline of infectious disease, while psychosocial factors, such as stress and anxiety, brought on by the rapid social change may play a more important role on the increase of chronic diseases.[76] Unhealthy behaviors, such as the excess consumption of fatty foods, dairy products, sugar, alcohol and tobacco also contribute to these health transition.[77]

Due to its potential close relationship with the rapid economic and social change, suicide rates have also caught peoples' attention, although it is not in the list of leading cause of death. It is estimated that there are over 300,000 suicides in China per year, This makes suicide one of the most important causes of death in the country and makes the suicide rate in China one of the highest in the world.[78]

Due to lack of the data prior to 1987, it is difficult to determine whether the suicide rate increased or not with the rapid economic and social transitions. However, researchers believe that many social changes brought on by the rapid economic reform world influence suicide rate, which includes "the major economic losses for individuals and families due to participating in risky ventures or pathological gambling, increasing rates of marital infidelity and divorce, increasing

76 Wilkinson, (1992).

77 Smith, (1993).

78 M. R. Phillips, H. Liu, et al., 'Suicide and Social Change in China', *Culture, Medicine and Psychiatry*, 23 (1999), 25–50.

rate of alcohol and drug use, rapidly increasing cost of health care which may make some people not able to afford, weakening the family ties which results in less social support, migrants to urban for temporary work, and increase the social and economic gaps".[79]

Health Related Quality of Life

The Health Related Quality of Life (HRQoL) represents another dimension of population health status, which has been investigated much less than the length of life. Recently WHO estimated the Disability Adjusted Life Expectancy (DALY), which is one way of measuring quality adjusted life expectancy, for 192 countries. Based on this estimation, Chinese DALY is 61.2 years for male and 63.3 years for female. Comparing to the life expectancy of 68.1 years for male and 71.3 years for female, the life expectancy losses due to low quality of life (as measured by disability here) are 6.9 years for Chinese male and 8 years for Chinese female. These two figures are 5.7 years for Japanese male and 7.1 years for Japanese female.[80] Both life expectancy and DALY indicator displayed that Chinese health status is lower than Japanese health status in terms of both length of life and quality of life.

Another study from 2000 Beijing Household Health Survey also found that the Chinese HRQoL might be lower than other developed countries. The EQ-5D dimension indicators and EQ-5D visual analog scale (VAS) have been used to measure Chinese quality of life in this study. Age-specific VAS analysis shows that the VAS scores significantly drop in age 30's to 40's in the Chinese population, which is 10 years younger than in the UK population, and 30 years younger than in the Japanese population. This result might imply that the Chinese population might have earlier and longer lower HRQoL lifespan compared to people living in the developed countries.[81]

The results of this study also show that the Chinese population HRQoL is 78.3 measured by the EQ-5D VAS, Pain/Discomfort and Anxiety/Depression are the major problems of Chinese HRQoL. The social determinants such as employment status and property level are the major determinants of overall population HRQoL. If this significant relationship proves to be causal, a greater disparity in Chinese

79 Phillips, Liu et al., (1999).

80 WHO, The World Health Report 2000, Health Systems: Improving Performance (Paris, France, WHO, 2000).

81 H. Wang, 'Variations in Population Health Related Quality of Life and Health Service Utilization in Beijing, China', *Department of Population Health Sciences* (Madison, University of Wisconsin-Madison, 2002).

population HRQoL will be expected due to the increase in disparity of wealth and the increase in unemployment associated with rapid economic transition.[82]

The Options of Social Policies in Improving Population Health

Reestablishing the Social Value of Equity

After more than 20 years of economic reform, China has successfully transformed its economy from a central planning system to a market oriented economic system. With the economic transition, social values have also changed. "Getting rich first" becomes the most prominent social goal. Disparity in income, as well as the disparity in other aspects of society such as accessing health care and population health, becomes a normal and acceptable phenomenon.

With the widening of social inequality, its negative effects on the social stability as well as population health have emerged, which will in turn restrict the economic and social development. In order to correct these problems brought by on the market-oriented economic system, social value of "equity" should be reinstalled. A sustainable economic and social development has to rely on the balance of "great efficiency' and "reasonable equity". Social value development is the first step of making effective value-based policies to reach this goal.[83]

Integrating Health Improvement Goals into Broad Economic and Social Development Policies

Population health is the result of the effects of multiple determinants. As discussed in the previous section, many economic and social policies could have the impact on population health. Therefore, it is important to take the goals of health improvement into the consideration while making these economic and social policies.

However, the Ministry of Health (MOH) used to be considered the least powerful Ministry in the government. Based on the existing administration

82 Wang, (2002).

83 M. Whitehead, G. Dahlgren, et al., 'Developing the Policy Response to Inequalities in Health: A Global Perspective', *Challenging Inequalities in Health: From Ethics to Action*, T. Evens, M. Whitehead, F. Diderichsen, A. Bhuiya and M. Wirth (Oxford, Oxford University, 2001), 309–323.

structure, the Ministry of Health does not have the authority and capacity to coordinate other sectors to achieve population health goals. The establishment of a permanent joint health committee, which is similar to the Patriot Health Committee, at State Council level might be necessary to take the responsibility to coordinate multiple sectors in terms of improving population health status. (The Patriot Health Campaigns were initiated in 1952. During the Korea War, the Chinese Communist Government was convinced that the United States intended to use biological weapons to spread communicable diseases in order to reduce the strength of the Liberation Army. Patriot Health Campaign Committee was established on March 14, 1952 in order to prevent the outbreak of communicable diseases. This Committee was composed of members from 21 ministries and various unions. These ministries and unions include planning, finance, construction, industries, commerce, agriculture, water resources, chemistry, culture, education, health, environmental protection, security, the military, civil affairs, workers' union, youth union, and the women's union etc. The Committee holds meetings periodically, to set up the agenda for the Campaigns' activities, and to coordinate and assign tasks to each participant ministry or union for certain common goals of improving population health.[84]

Leaning Health Interventions Towards Vulnerable Population

Competition is the characteristics of the market economy. The winners in this market competition would obtain more resource to enjoy the goods and services that are provided by the market, and thereby enjoy the better life. The losers in this market competition, however, become the vulnerable population and are left out by the market economic system. With little resources, those vulnerable populations would not be able to enjoy the goods and service that provided by the market. Furthermore, vulnerable populations are exposed to much more risks than better-off populations, such as unhealthy housing, dangerous working conditions, nutritional deficiencies, more stressful, more smoking and drinking.[85] The intervention from public sectors should be more leaning towards those vulnerable populations who are left out by the market.

84 H. Chen, *Chinese Health Care* (Beijing, People's Health Publishing House, 1985).

85 F. Diderichsen, T. Evens, et al., 'The Social Basis of Disparities in Health', *Challenging Inequalities in Health: From Ethics to Action*, T. Evens, M. Whitehead, F. Diderichsen, A. Bhuiya and M. Wirth (Oxford, Oxford University 2001), 13–23.

Increasing Health Insurance Coverage

Health insurance has been used as a unique social welfare measure to redistribution resources from the healthy population to the most needed unhealthy population; to ensure the accessibility to the health care services; to provide the financial risk protection to the patients; and to ensure the services provided by the doctors are the appropriate (cost-effective) services to the patients. However, the coverage of health insurance is still very low, only about 20% population that has been covered (the coverage rate is 40% for urban population and 10% for rural population). How to provide the health insurance for the 80% uncovered population is a tremendous challenge to the government as well as to the all society.

In October 2002, Government of China, for the first time in its history, announced its willing to set up a subsidy (RMB 20 Yuan=$2.5 per person per year) to support a community-based health insurance scheme to cover basic health service for the farmers who are in poor rural areas of China. Although this announcement represents a significant progress in the Government of China's determination to help the poor farmers, the actual establishment of new health financing scheme and improvement of delivery system are left open. The central government will not disburse the subsidy without the lower level government/community prove to a workable model of such insurance schemes. The local government and the communities are in urgent need for technical support to make a new scheme work and to have financial support to test it before they get the subsidy from central government.

Continuing Reforming Health Delivery System

Due to the market incentives, it is inevitable that health providers will focus on providing more and better services to the people who can afford them. How to ensure the economical disadvantaged population to access basic services is one of critical social problems in the market-oriented society. With the public financial support, health delivery system should take the responsibility to provide low cost or free first aid services to the people who can't afford the expensive services.

Research, Researches, and Research

It is been joked that every research project will end up with the results of requiring more research. Indeed, the relationships between economic development and social change and population health are very complex. There are causal relationships between economic development and population health in both directions, i.e. the better economy would lead to better population health and better population health

also lead to better economic development. Most of the evidences that are cited in this study did not address these causal issues. In addition, the determinants of health are numerous, and we are not able to list all of them in this study and we did not attempt to prioritize them. However, all these unsolved issues are very crucial to make concrete interventions. There is a great need to conduct more research to support sound evidence-based policies. For these reasons, we also conclude, as other study, that there is great need to conduct more research in the following two areas: to conduct more research in order to get better understanding the causal relationships between economic development and social change and population health; to conduct more research in order policy makers able to prioritize their intervention policies.

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Tables

Table 1. Per capita annual consumption of major food commodities, during 1981–1999, China.

Food commodities	1981	1985	1990	1995	1999	1999 as % of 1981
Urban						
Grain (kg)	145.44	134.76	130.72	97.00	84.91	58.4
Vegetables (kg)	152.34	144.36	138.70	116.47	114.94	75.4
Cooking oils (kg)	4.8	5.76	6.40	7.11	7.78	162.1
Pork (kg)	16.92	16.68	18.46	17.24	16.91	99.9
Beef and Mutton (kg)	1.78	2.04	3.28	2.44	3.09	173.6
Poultry (kg)	1.92	3.24	3.42	3.97	4.92	256.3
Eggs (kg)	5.22	6.84	7.25	9.74	10.92	209.2
Fish and shrimps (kg)	7.26	7.08	7.69	9.20	10.34	142.4
Sugar (kg)	2.88	2.52	2.14	1.68	1.81	62.8
Liquor (kg)	4.38	7.80	9.25	9.93	9.61	219.4
Rural						
Grain (kg)	248	257.45	262.08	258.92	247.45	99.8
Vegetables (kg)	142	131.13	134.00	104.62	108.89	76.7
Cooking oils (kg)	1.96	4.04	5.17	5.80	6.17	314.8
Meat (kg)	5.76	10.97	11.34	11.29	13.87	240.8
Poultry (kg)	0.25	1.03	1.26	1.83	2.48	992.0
Eggs (kg)	0.8	2.05	2.41	3.22	4.28	535.0
Fish and shrimps (kg)	0.84	1.64	2.13	3.06	3.82	454.8
Sugar (kg)	0.73	1.46	1.50	1.28	1.46	200.0
Liquor (kg)	1.22	4.37	6.14	6.53	6.98	572.1

Sources: China Statistical Yearbook 2000, China Statistical Bureau.

Table 2. Selected health related socio-economic indicators by provinces in 2001.

Regions	Per capita GDP (Yuan)	% of urban popu-lation	% of food expenditure in total expenditure	% of college students in population of age 6 and above	Number of MD per 10,000 population	Industry waste processing rate (%)	Tap-water coverage in rural area (%)
Average	**7543**	**36.2**	**44.2**	**3.8**	**16.5**	**76.1**	**55.1**
11	37382	88.3	42.8	11.4	30.1	95.2	99.9
Beijing	25523	77.5	36.0	17.5	37.7	91.1	97.2
Tianjing	20154	72.0	38.7	9.4	29.1	98.7	83.0
Zhejiang	14655	48.7	39.0	3.4	16.7	89.9	83.3
Guangdong	13730	55.0	43.5	3.9	14.6	83.0	71.1
Jiangsu	12922	41.5	41.4	4.1	15.6	90.9	77.8
Fujian	12362	41.6	46.1	3.2	12.3	84.5	65.5
Liaoning	12041	54.2	42.4	6.5	24.2	69.7	61.7
Shandong	10465	38.0	39.2	3.6	16.4	91.6	58.3
Heilongjiang	9349	51.5	39.9	5.1	20.9	85.4	52.5
Hebei	8362	26.1	38.6	2.9	17.0	75.6	75.9
Xinjiang	7913	33.8	45.1	5.6	22.9	65.9	66.7
Hubei	7813	40.2	46.1	4.1	17.1	76.5	48,6
Jielin	7640	49.7	41.9	5.2	22.9	59.9	37.1
Hainan	7135	40.1	53.9	3.5	15.6	83.0	48.1
Inner Mongolia	6463	42.7	39.5	4.1	24.1	61.5	31.4
Hunan	6054	29.8	47.6	3.1	15.8	75.2	51.8
Henan	5924	23.2	45.4	2.9	11.6	77.6	47.5
Qinghai	5735	34.8	47.1	3.6	18.3	57.0	56.9
Chongqing	5654	33.1	49.4	3.0	14.5	79.0	57.1
Shanxi	5460	34.9	42.9	3.7	26.5	58.3	75.0
Ningxia	5340	32.4	42.7	4.1	18.7	40.2	29.0
Tibet	5307	18.9	62.4	1.5	19.2	44.7	10.0
Sichuan	5250	26.7	50.9	2.7	15.1	65.7	40.3
Anhui	5221	27.8	48.2	2.5	11.3	88.6	28.1
Jiangxi	5221	27.7	48.5	2.8	12.7	61.8	39.6
Shanxi (Xian)	5024	32.3	39.4	4.5	18.0	60.4	34.4
Yunnan	4866	23.4	53.4	2.2	14.5	61.9	54.7
Guangxi	4668	28.2	48.2	2.6	12.8	76.3	50.7
Gansu	4163	24.0	43.9	2.9	14.9	56.8	32.5
Guizhou	2895	23.9	55.5	2.2	12.2	51.9	44.2

Source: Ru, Lu et al. 2003Table 3. Household size, median age and age composition during 1953–2000.

Table 3. Household size, median age and age composition 1953–2000.

Year	Household size	Household median age	Age composition (%)		
			0-14	15-64	65 and over
1953	4.33	21.7	36.28	59.31	4.41
1964	4.43	20.2	40.69	55.75	3.56
1982	4.41	22.9	33.59	61.5	4.91
1990	3.96	25.25	27.69	66.74	5.57
2000	3.44	30.08	22.89	70.15	6.96

Sources: China Statistical Yearbook 2001, China Statistical Bureau.

Table 4. The changes of the criteria of selecting spouse in China.

Criteria	Unit: percentage of population			
	1948~66	1967~76	1977~86	1987~96
Family political background and social relationship	26.6	28.8	12.65	15.56
Personal political status	30.5	23.5	15.5	13.9
Education	10.6	11.7	12.6	25.3
Occupation	17.8	25.8	28.2	40.7
Income	20.1	27.5	27	34.9
Housing	16.4	27.7	33.1	37.2
Health status	62.6	68	58	60.4
Height	7.6	9.4	13.8	17.3
Appearance	13.2	22.2	24	28.8
Temperament and culture	9.5	10.2	11.3	19
Moral standing: veracity and reliable	63.3	61.4	53.5	42.3
Gentle or femininity	32.3	38	36.4	39.6
Mature and responsible	5.8	11.1	13.1	18.1
Common ideality	15.5	17.9	12.2	12.9
Acceptable personal characters and temper	39	46.5	47.3	51.1

Source: Xu, 2000.

Table 5. The incident rate, mortality and disease specific mortality for each report-required communicable diseases in China.

Diseases	1985			1990			1995			2000		
	Incident rate	Mortality	Disease spec. mort.	Incident rate	Mortality	Disease spec. mort.	Incident rate	Mortality	Disease spec. mort.	Incident rate	Mortality	Disease spec. mort.
Total	772.33	2	0.23	292.22	1.15	0.4	176.24	0.34	0.19	185.98	0.26	0.14
Plague	0	0	33.33	0.0007		2.7	0			0.02	0	0.8
Cholera	0.06	0	1.07	0.057		0.78	0.95	0.01	0.93	0.15	0	0.48
Viral hepatitis	76.68	0.22	0.29	115.58	0.156	0.14	63.57	0.09	0.13	63.04	0.04	0.07
Dysentery	316.72	0.23	0.07	125.28	0.165	0.13	73.27	0.04	0.05	39.65	0.01	0.03
Typhoid	8.35	0.02	0.29	10.144	0.024	0.24	6.1	0.01	0.17	3.9	0	0.08
AIDS						100	0	0	69.7	0.01	0.01	42.24
Gonorrhea				6.84			11.64			18.31	0	0
Syphilis				0.093		0.19	0.54			4.73	0	0.02
Poliomyelitis	0.15	0.01	6.18	0.45	0.009	2.02	0.01	0	4.84	0	0	0
Measles	40.37	0.26	0.63	7.587	0.017	0.22	4.83	0.01	0.19	5.74	0.01	0.17
Pertussis	14.22	0.02	0.16	1.763	0.003	0.17	0.5	0	0.15	0.45	0	0.13
Diphtheria	0.14	0.02	12.93	0.037	0.006	15.91	0.01	0	15.85	0	0	0
Meningitis	10.73	0.59	5.5	0.874	0.007	0.76	0.52	0.03	6.02	0.19	0.01	4.62
Scarlet fever	5.95	0	0.03	2.659		0.01	1.35	0	0.01	1.03	0	0.04
Hemorrhage fever	10.02	0.3	3	3.596	0.098	2.73	5.3	0.05	1	2.89	0.02	0.74
Rabies				0.311	0.311	99.94	0.02	0.02	97.42	0.04	0.04	93.94
Ancylostomiasis				2.55	0.049	1.9	1.1	0.03	2.93	0.31	0.01	2.73
Brucellosis				0.07		0.13	0.07			0.14	0	0.06
Anthrax				0.204	0.01	4.86	0.09	0	3.81	0.05	0	1.87
Typhus				0.303	0.001	0.17	0.29			0.46	0	0
Encephalitis	2.81	0.23	8.37	3.367	0.232	6.9	1.32	0.05	3.53	0.93	0.03	2.86
Kala-azar	0.01	0	0.69	0.023		1.56	0.01	0	1.71	0.01	0	0
Malaria	54.39	0	0.01	10.381	0.003	0.03	4.19	0	0.07	1.94	0	0.16
Dengue fever				0.033			0.58			0.03	0	0
Tetanus										15.85	0.03	12.6
Tuberculosis										41.68	0.04	0.11

*The units of incident rate and mortality rate are 1/100,000; and the unit of disease specific mortality is %.

Source: Chinese Health Statistical Digest, 1985, 1990, 1995, 2000, Ministry of Health, PRC.

Table 6. The urban health insurance's coverage and its expenditure during 1988–1998.

Year	Enrolled population (100 million)	Total medical expenditure (100 million Yuan)	Per capita medical expenditure	The increase rate of per capita expenditure (%)	The increase of coverage rate (%)
1988	1.5304	183.2			
1989	1.56957	224.4		19.2	2.6
1990	1.60387	268.6		16.8	2.2
1991	1.65737	315		13.8	2.3
1992	1.70444	372.7		15.3	2.8
1993	1.72732	461	267	21.9	1.3
1994	1.7523	561.2	321	20.2	1.4
1995	1.76821	660.7	374	16.5	0.9
1996	1.77746	737	415	11	0.5
1997	1.78175	797.1	447	7.7	0.2
1998	1.77815	834	469	4.9	-0.8

Source: Zheng, 2002.

Table 7. The coverage of Co-operative Medical System (CMS) in rural China during 1976–1990.

Year	Villages	Village with CMS	% of villages with CMS
1976	677,834	629,708	92.9
1978	685,994	562,515	82.0
1980	702,908	483,601	68.8
1982	717,665	378,927	52.8
1984	715,265	54,100	7.6
1986	738,139	35,649	4.8
1988	734,095	41,940	5.7
1990	749,963	45,491	6.1

Source: Feng, Tang et al. 1995.

Table 8. Total health expenditure and is composition in total GDP during 1978–2000.

Year	Total GDP 100m Yuan	Annual increase (%)	Total Health expenditure 100m Yuan	Annual increase (%)	% GDP (%)	Per capita expenditure Yuan
1978	3624.1	11.7	110.2		3.0	11.4
1979	4038.2	7.7	126.2	10.6	3.1	12.9
1980	4517.8	7.8	143.2	9.4	3.2	14.5
1981	4862.4	5.3	160.2	9.3	3.3	16.0
1982	5294.7	9.0	177.5	11.0	3.4	17.5
1983	5934.5	10.9	207.4	15.6	3.5	20.1
1984	7171.0	15.2	242.1	11.3	3.4	23.1
1985	8964.4	13.5	279.0	4.6	3.1	26.4
1986	10202.2	8.9	315.9	8.3	3.1	29.4
1987	11962.5	11.6	379.6	14.3	3.2	34.7
1988	14928.3	11.3	488.0	14.6	3.3	44.0
1989	16909.2	4.1	615.5	15.9	3.6	54.6
1990	18547.9	3.8	743.0	14.3	4.0	65.0
1991	21617.8	9.2	888.6	12.0	4.1	76.7
1992	26638.1	14.2	1090.7	13.8	4.1	93.1
1993	34634.4	13.5	1370.4	9.7	4.0	115.6
1994	46759.4	12.7	1768.6	7.7	3.8	147.6
1995	58478.1	10.5	2257.8	12.8	3.9	186.4
1996	67884.6	9.6	2857.2	19.5	4.2	233.5
1997	74462.6	8.8	3384.9	17.6	4.5	273.8
1998	78345.2	7.8	3776.5	14.3	4.8	302.6
1999	82067.5	7.1	4178.6	13.2	5.1	331.9
2000	89403.6	8.0	4764.0	13.0	5.3	376.4

Source: Cai, 2002.

Table 9. The Epidemic Prevention Station and other prevention institute's revenues during 1990–1998 (in Million Yuan).

Year	Total health expenditure	EPSs services expenses	% out of total health expenditure
1990	86,066	2,027	2.36
1991	99,390	2,270	2.28
1992	120,154	2,657	2.21
1993	150,100	3,390	2.26
1994	194,035	4,222	2.18
1995	239,540	5,030	2.10
1996	295,716	5,935	2.01
1997	343,561	7,394	2.15
1998	388,460	8,150	2.10

Source: Liu, 2002.

Table 10. Epidemic Prevention Station's Revenue and Expenditures in 1997.

Category	Revenues/expenses (Thousand Yuan)	Percentage (%)
Total Revenue	**2400.0**	
Government Budget	684.0	28.5
Special Funds	220.0	9.2
Revenue from service charge	1390.0	57.0
Physical check-up	303.0	21.8*
Health monitoring and inspection	363.0	26.1*
Other health services	345.0	24.8*
Total Expenditure	**2314.0**	
Staff salaries	778.0	33.6
Drugs	199.0	9.0
Repair cost	138.0	6.0
Service cost	547.0	23.6
Equipment purchasing	210.0	9.1

*These percentage is based on the revenue from service charge as 100%

Source: Liu, 2002.

Table 11. Mortality, infant mortality, and life expectancy during 1949–2000.

Year	GDP per capita	Mortality		Infant Mortality		Life expectancy	
	(Chinese Yuan)	1/1000 population)	Annual decline	1/1000 live birth	Annual decline	(Years)	Annual decline
1949		20		265		30.5	
1950	119*	18	-2	195	-70	40.8	10.3
1955	150	12.3	-1.14	179	-3.2	44.6	0.76
1960	218	25.4	2.62	121	-11.6	49.5	0.98
1965	240	9.5	-3.18	81	-8	59.6	2.02
1970	275	7.6	-0.38	61	-4	63.2	0.72
1975	327	7.32	-0.06	51	-2	65.8	0.52
1980	460	6.34	-0.20	47	-0.8	67.8	0.4
1985	853	6.78	0.09	42	-1	69.4	0.32
1990	1634	6.67	-0.02	38	-0.8	70.9	0.3
1995	4854	6.57	-0.02	36.4	-0.32		
2000	7078	6.43	-0.03	33.1	-0.66	71.8	0.09

*1952 data

Source: Yin, 2000.

Table 12. Socio-economic and health indicators in cities by size and rural counties by income level, in China 1993.

Indicators	Urban			Rural			
	Big-city	Mid-city	Sm-city	Cnty 1	Cnty 2	Cnty 3	Cnty 4
GDP per capita (yuan)	5,002	4,070	3,040	2,523	1,305	939	664
Income per capita (yuan)	2,291	1,947	1,158	927	677	561	441
Population in agriculture (percent)	n.a.	n.a.	n.a.	81	89	91.5	95.2
Rate of illiteracy and semi-illiteracy (percent)	9.6	14.8	14.2	26.4	26.8	28.1	50.7
Life expectancy (years)	74.5	71.3	70.0	71.0	69.0	68.3	64.5
Infant mortality rate (per 1000 life births)	15.8	17.1	30.1	29.3	34.5	44.2	71.8
Prevalence of disability (per 1000)							
Female	6.4	7.5	8.5	10.6	10.8	11.5	12.5
Male	6.3	7.6	9.5	9.9	10.3	12.3	12.4

Source: Liu, Rao et al., 2001.

Table 13. First ten leading causes of death in urban China in selected years.

	1957			1975			2000		
Rank	**Cause of Death**	**Mortality**	**%**	**Cause of Death**	**Mortality**	**%**	**Cause of Death**	**Mortality**	**%**
1	Respiratory diseases	120.3	16.9	Cerebrovasc. diseases	127.9	21.6	Cancer	146.6	24.4
2	Infectious diseases	56.6	7.9	Heart diseases	115.3	19.5	Cerebrovasc. diseases	128	21.3
3	Pulmonary tuberculosis	54.6	7.5	Cancer	111.5	18.8	Heart diseases	106.7	17.7
4	Digestive diseases	52.1	7.3	Respiratory diseases	63.6	10.8	Respiratory diseases	79.9	13.3
5	Heart diseases	47.2	6.6	Digestive diseases	28.8	4.9	Accidents, injury, and poisoning	35.6	5.9
6	Cerebrovasc. diseases	39.0	5.5	Pulmonary tuberculosis	21.2	3.6	Digestive diseases	18.4	3.1
7	Cancer	36.9	5.2	Accidents, injury	16.8	2.9	Nutritional, metabolic, endocrinop. and immune system diseases	18	3
8	Nerve system diseases	29.1	4.1	Infectious diseases	13.2	2.2	Urinary system diseases	9	1.5
9	Accidents, injury, and poisoning	19.0	2.7	Urinary system diseases	11.6	2	Mental health diseases	6.7	1.1
10	Other tuberculosis	14.1	2.0	Poisoning	6.3	1.1	Neonatal diseases	5.5	0.9
Total			**65.6**			**87.2**			**92.2**

*The unit of mortality is 1/100,000

Source: Chinese Health Statistical Digest, 1985, 2000, Ministry of Health, PRC.

Table 14. First ten leading causes of death in rural China in selected years.

Rank	1975			2000		
	Cause of Death	**Mortality**	**%**	**Cause of Death**	**Mortality**	**%**
1	Heart diseases	123.2	18.0	Respiratory diseases	142.2	23.1
2	Cancer	119.6	17.5	Cerebrovascular diseases	115.2	18.4
3	Cerebrovascular diseases	92.3	13.5	Cancer	112.6	18.4
4	Respiratory diseases	88.2	12.9	Heart diseases	73.4	12.4
5	Digestive diseases	46.3	6.8	Accidents, injury, and poisoning	64.9	11.0
6	Pulmonary tuberculosis	32.6	4.8	Digestive diseases	23.9	4.0
7	Accidents, injury	24.3	3.6	Urinary system diseases	9.3	1.5
8	Infectious diseases	23.8	3.5	Pulmonary tuberculosis	7.4	1.2
9	Neonatal diseases	1194.8	2.7	Neonatal diseases	697.1	1.1
10	Urinary system diseases	10.2	1.5	Nutritional, metabolic, endocrinopathic, and immune system diseases	6.8	1.1
Total •			**84.7**			**91.5**

*The unit of mortality is 1/100,000

Source: Chinese Health Statistical Digest, 1985, 2000, Ministry of Health, PRC.

From Apartheid to Globalisation: Health and Social Change in South Africa

Mickey Chopra and David Sanders

Introduction

South Africa's transition from a racist apartheid society that denied basic human rights to a majority of its population to a fully democratic nation is one of the more celebrated transitions of recent times. However this transition is having its costs as it has also involved an acceleration of the integration of South Africa into the global economy and a stripping away of many of the protective trade barriers that cocooned the South African economy. The freedom of movement resulting from the scrapping of apartheid laws and a neo-liberal macro-economic policy has led to rapid urbanization, increasing unemployment and deepening inequalities. As was the case in 19th Century Europe South Africa is suffering a significant rise in mortality, especially amongst young men and women.

This paper briefly summarises the economic, social and political transitions that South Africa has gone through in the last decade. It then highlights some of impacts this transition has had on mortality. The last section explores the parallels between the impact of the recent South African transition and that which occurred in industrializing Europe. The paper concludes with a discussion on the prospects of South Africa enjoying the same development trajectory as that of 19th Century Europe.

Poverty and inequality in South Africa

South Africa's political transition from the racist apartheid state to a fully democratic country is well documented. Perhaps less appreciated is how this political transition was driven by an imperative to save an economy that had been in crisis since the mid 1970s. This section will give a brief historical overview

leading up to the historical elections of 1994. It will then sketch the political and economic transitions that have occurred since that time.

The victory of the Nationalist Party in 1948 ushered in the apartheid state that systematically discriminated against the majority black population. Some commentators have pointed out that the new regime merely codified a practice that had been going on for many years.[1] For example the 1913 Native Land Act had designated 13% of the available land as the only areas in which the black population could purchase and reside in. But there is little doubt that the accession to power of the Nationalist Party signified the victory of a particular Afrikaner nationalist ideology. There has been much written about the political and ideological nature of apartheid; however less prominent is the useful role this political superstructure played for Afrikaner capital in South Africa during this time. The post war South African economy was dominated by the mineral and agricultural sectors that depended upon a regular supply of cheap and relatively unskilled labour that the apartheid laws were able to supply. The apartheid state actively assisted in the supply of such labour:

'Massive forced removals saw the labour tenant system replaced by a contract labour system. Between 1960 and 1982, 3,5 million people were forcibly removed by the state. About 700,000 more people were removed from urban areas declared 'white'".[2]

The creation of 'Homeland' areas served as dumping grounds for unemployed labour and allowed its cheap reproduction of labour. This policy also served as a useful way of diffusing and marginalizing any discontent. Strict influx control measures prevented Africans from being physically present in many urban centers. Under this apartheid institutional framework, the market acted 'like a malevolent invisible hand, working to the advantage of white workers and capitalists, and widening the wage differentials between black and white workers'.[3] The ratio of per capita incomes of white to black people rose from 10.6:1 in 1947 to 15:1 in 1970.[4]

The economic model began to falter after the oil crisis in 1973. An important cause was the lack of a large enough skilled and stable workforce as recognized by Harry Openheimer, chair of the largest conglomerate in South Africa:

"Prospects for economic growth will not be attained so long as a majority of the population is prevented by lack of education and technical training or by positive

1 H. Marais, South Africa: Limits to change – the political economy of transformation (Cape Town, UCT Presss, 1998).

2 Marais, (1998), p.22.

3 M. McGarth, 'Economic growth, income distribution and social change' in *The Political Economy of South Africa*, eds. N. Natrass and E. Ardington (Cape Town, Oxford University Press, 1990), 92.

4 McGarth, (1990), p.94.

prohibition from playing the full part of which it is capable in the national development".[5]

The 1970s and 80s also witnessed the rise of mass resistance, first from unionized workers (with huge strikes in the mid-1970s) and, when these were crushed, a growing urbanized proletariat. This latter movement was marked by a large degree of spontaneity and the lack of control or direction by national bodies such as the African National Congress. Street committees and youth groups replaced the state in many areas, though quite often they were ephemeral and not structured enough to be legitimized by the majority of people living in the areas.[6]

By the early nineties the economy was in negative growth with high rates of capital flight out of the country and high levels of unemployment. The strategy of primary product export and import substitution had foundered on the rocks of unstable primary product prices, shortage of skilled labour and lack of a large enough domestic market. The situation was compounded by the huge costs of maintaining the apartheid apparatus. In addition to the high military and security expenditures there was the cost of the bureaucracy:

"By 1985 the political system had given birth to 13 Houses of Parliament…Occupying seats in these 13 bodies were 1270 members. Each of these legislative organs had executive structures, which by 1985 had spawned 151 departments. These included 18 Departments of Health and Welfare; 14 Departments of Education… Finally, these Departments were responsible to 11 Presidents, Prime Ministers or Chief Ministers in South Africa."[7]

Economic Policy

It was quite clear that there would need to be a profound change in the political and social structure of South Africa. Limited space does not allow for a description of the negotiated settlement. Suffice it to say that although there was a successful political transition to a majority government the dominant global political and economic forces played a significant role in shaping its political and economic strategy.

In the flurry of post-apartheid policy formulation two macroeconomic alternatives began to take shape. A group of economists within the ANC itself presented a policy that sought 'growth through redistribution of wealth'. At its

5 Cited in S. Gelb, *South Africa's economic crisis* (London, Zed Books, 1991).

6 S. Friedman, 'The Struggle within the Struggle: South African resistence strategies', *Transformation,* No. 3 (Durban, 1987).

7 F. Van Zyl Slabbert, *The quest for democracy: South Africa in transition* (London, Penguin Books, 1992).

heart was a relatively modest role for the state to initially invest in building public infrastructure and strategic interventions to assist key industries. The other serious policy option was put forward by the South Africa Foundation (which derived most of its support from the business community). This advocated a neo-liberal approach with a streamlining of state functions and expenditure, privatization and deregulation of the financial sector. It was envisaged that this would lead to growth through the attraction of foreign direct investment and redistribution would occur through the 'trickle down' of wealth.

The Government's macroeconomic policy was outlined with the publication of the "Growth, Employment and Redistribution (GEAR)" report in 1996. This was supportive and broadly consistent with the latter neo-liberal approach, with a programme of fiscal restraint, privatisation and deregulation.

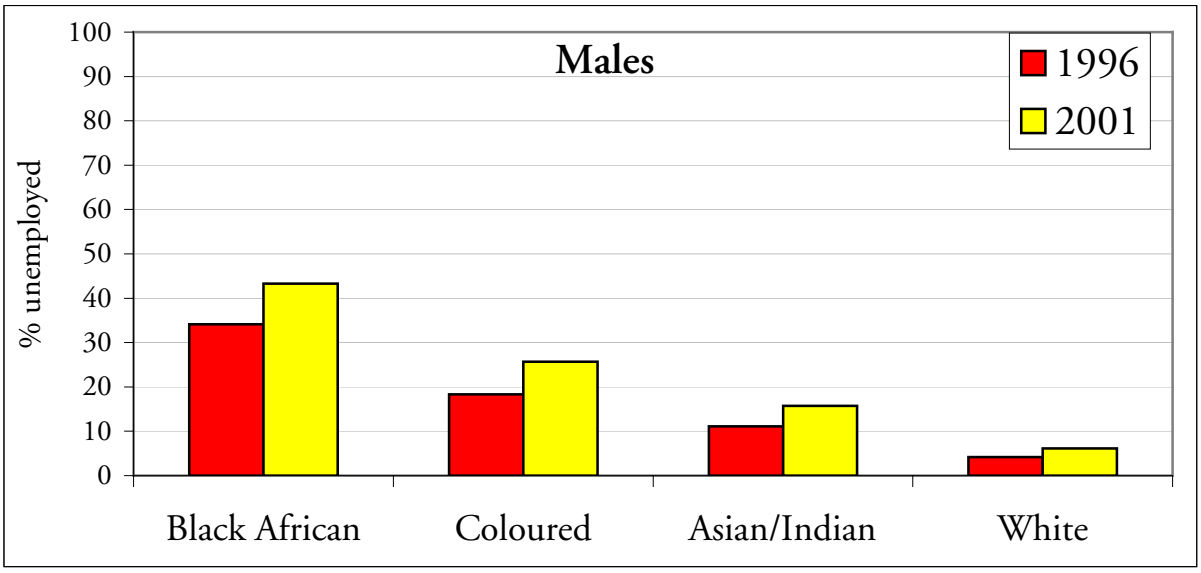
There has been much debate about why the ANC adopted such a stance, especially since it contrasted with its earlier policy statements and its general rhetoric during the liberation struggle. Despite the dire economic situation the ANC inherited after its resounding electoral victory in 1994 it still had room for maneouvre with respect to its economic policy. It had good physical infrastructure (for at least the bases for manufacturing), and foreign debt was low by international standards with no obligations towards any of the Bretton Woods institutions. As one commentator remarked "…compared to Russia, the challenges of economic transition [in South Africa] were less daunting since most basic institutions – like capital markets, a private banking system, justiciable contract law – were already firmly in place".[8] It seems that, even though the IMF and World Bank did not have any official leverage over domestic policy makers, regular visits by senior officials and safari retreats made it quite clear to the new political elite that anything other than a neo-liberal agenda could result in downgrading of credit ratings and reductions in foreign investment.

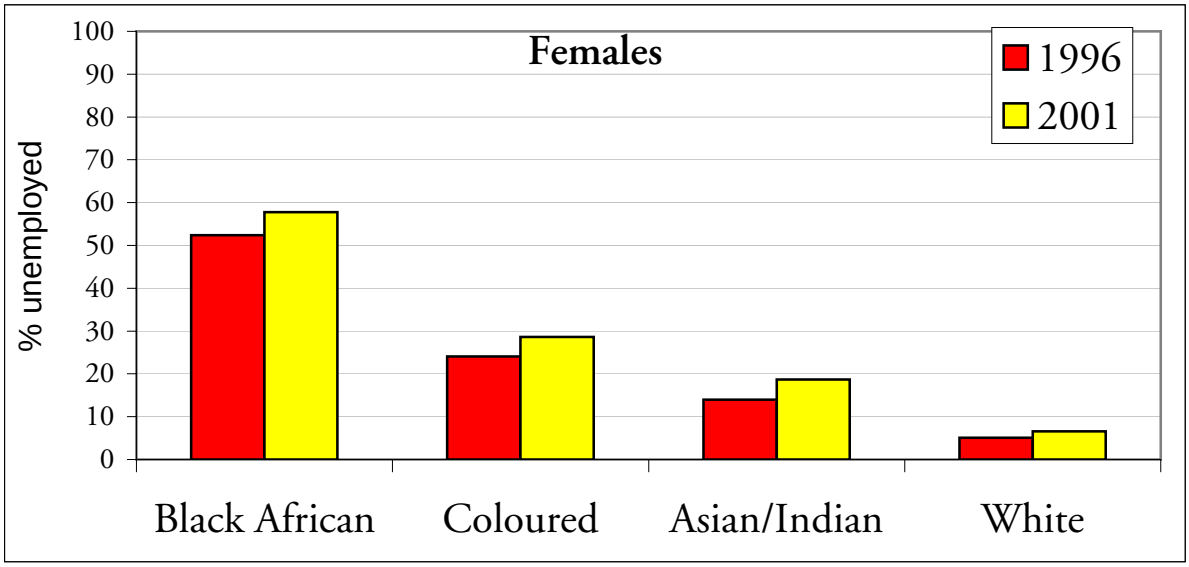
Socio-Economic Transition

The impact of the GEAR policy has been disappointing – even in realizing its own stated macroeconomic goals. The rapid dismantling of tariffs has resulted in sharp declines in employment especially in the textile and manufacturing sector. On the other hand the initial depreciation of the currency has led to increases in some sectors such as tourism that have been partially reversed following more recent

8 Bratton & Landsberg 1998, quoted in A. Habib and V. Padayachee, 'Economic policy and power relations in South Africa's transition to democracy', *World Development*, 28;3 (2000), 245–26.

Figure 1a and b. Official unemployment rates by population group and sex October 1996 and October 2001.





Source: Census 1996, 2001.

strengthening of the South African Rand. Overall it has been estimated that over 1 million jobs have been lost predominantly amongst the artisan and unskilled.

This has led to a significant growth in unemployment from 33.0% in 1996 to 41% in 2001.[9] This increase has disproportionately affected the majority African population with unemployment increasing from 42.5% to over 50% in just five years (figure 1). The loss of jobs in the formal sector is giving rise to so-called informal sector jobs. These include activities such as hawking, food retailing, home based manufacturing. In Cape Town alone the proportion of economically active people engaged in the informal sector has risen from 36% in 1996 to 45% in 2001.

9 StatsSA 2003.

There is some debate as to whether this is an economically healthy development. The example of Silicon Valley is often cited as a way in which less regulated and smaller firms can achieve far greater flexibility in response to a global market. However, studies of most informal economies in Africa have shown that it is extremely difficult for small companies to grow without significant external inputs that in the present climate of reduced State investment is usually not forthcoming. In most cases the informal economy is a survival strategy rather than an engine for growth.[10]

Increases in Inequality

Given the above changes it is not surprising to see that income inequalities have persisted: by 1995 the poorest 40% of households accounted for only 11% of the total income whilst the richest 10% commanded 40% of the total income.[11] Perhaps contributing to a greater perception of exclusion amongst the African majority is that a small African minority is greatly benefiting from the transition period. The proportion of urban Africans in the richest quintile of the South African population increased five fold from 1990 to 1995, rising from 2% to 10%. This rise may well have been at the expense of the poor as the poorest 40% of the population have experienced a drop in their share of income. The level of income disparity between African households (as measured by the Gini Coefficient) rose from 0.3 in 1990 to 0.54 in 1998 (almost the same as the national figure of 0.58).[12]

In terms of basic facilities (table 1), data from the October Household Survey of 1999 indicates that 11% of the South African population lives in traditional type of housing and the highest proportion of such households occurs in the Eastern Cape (32%) while the lowest proportions are in Gauteng, Western Cape and Northern Cape at less than 1%. Nearly 1 in 6 of the population live in rudimentary shacks. The highest proportion is in rapidly growing urban areas such as Gauteng (25%). Access to piped water inside the home appears to have got worse in the last few years and has dropped from 45% to 39%. The percentage of households without a toilet was 12% in 1996 and had decreased to 10% by 1999, but with large variations between the Provinces. Lastly, 22% of the households in the survey reported hunger by the end of 1999. The highest proportion was identified in Mpumalanga (32%),

10 Potter et al. 1999.

11 J. May Ed., *Poverty and Inequality in South Africa: Meeting the Challenge* (David Philip Publishers, Cape Town, Zed Books, London & New York, 2000).

12 UNDP 2000.

Table 1. House type, access to water and sanitation and food security,by province,1996–1999.

Province	House Type 1999 (N = 10 851 376)		% households with piped water inside		% households without toilet		% households reporting hunger
	%traditional[a]	%shack[a]	1996[b]	1999[a]	1996[b]	1999[a]	1999[a]
Eastern Cape	31.9	12.1	24.7	23.4	29.1	25.1	30.9
Free State	7.0	19.4	40.6	29.9	8.8	5.3	23.8
Gauteng	0.2	24.7	67.7	58.8	2.5	0.8	14.7
KwaZulu-Natal	18.6	19.3	39.8	34.6	15.2	12.7	26.8
Mpumalanga	8.7	17.5	37.3	27.6	8.7	3.5	31.9
Northern Cape	0.9	12.9	50.0	48.1	10.7	10.7	15.1
Northern Province	15.2	6.2	17.8	12.1	21.2	18.8	15.5
North West	1.7	12.1	30.6	21.6	6.4	5.7	22.5
Western Cape	0.2	15.9	76.4	76.7	5.4	3.8	15.0
South Africa	10.9	16.9	44.7	38.8	12.4	9.7	21.9

Source: a.1999 October Household Survey, b.1996 Census.

In summary South Africa is a stark example of what has been termed "combined and uneven development".[13] This describes the process that has occurred in peripheral states that have been compelled by global capitalism to accelerate development of industrialization and urbanisation whilst retaining earlier modes of production. The amalgam of backward and advanced socio-economic conditions becomes the structural foundation for the combination of the different stages of development. South Africa is undergoing a protracted transition with almost half of the population living in rural traditional homesteads and engaging in declining subsistence production and relying increasingly on welfare payments, piece work and remitted wages; an ever increasing urbanized population that is either participating in 'a twilight zone of unregulated casual, informal, subcontracted and outsourced employment or is unemployed'[14]; and a small elite of internationally skilled, professional and managerial employees. It should be noted that one of the significant changes since 1994 has been the rise of a black elite into the latter group through "economic empowerment" initiatives and deracialisation of state and

13 M. Löwy, The politics of combined and uneven development: The theory of permanent revolution (Verso Books, London, 1981).

14 N. Natrass and J. Seekings, 'Changing patterns in the South African labour market', in *Post-Apartheid Southern Africa*, ed. L. Petersson (London, Routeledge, 1998).

parastatal bureaucracies. It is this socio-economic context that is required to explain the startling changes in health and mortality that is occurring in South Africa and to which we now turn our attention.

Health and mortality

Health Transition Models

The epidemiological transition was first described by Omran[15] and referred to the complex long-term changes, (over decades or even centuries) in the patterns of health and disease as communities transform their social, economic and demographic structures. He posited a set sequence of events starting with a preponderance of infectious diseases, followed by an era when chronic diseases predominated. Communities adopting unhealthy lifestyles, which include smoking tobacco products, being physically inactive and consuming a typical westernised diet over time experience high levels of obesity, hypertension, diabetes and hyperlipidaemia in communities. This is seen to coincide with and be reinforced by the demographic transition. Further improving social and economic conditions lead to decreases in fertility and increases in life expectancy. Coupled with increasing industrialisation and urbanisation a decline occurs in infectious disease mortality mainly among the younger age groups. There is a consequent shift in the mortality profile towards chronic diseases.

It was anticipated that chronic diseases would increase in poor countries undergoing development, industrialisation and adoption of "western" lifestyles.

Initially, chronic diseases emerged in the wealthier sections of high income countries, however, by the last quarter of the 20th century these conditions occurred more frequently in the poor. On the basis of observations from some large middle-income populations Frenk and co-authors[16] proposed a modification to Omran's theory with the protracted-polarised model of epidemiological transition. This model proposes the coexistence of infectious and chronic diseases in the same population and persisting over a long period. In the protracted – polarised model more affluent sections of the population would have completed the transition, while

15 A.Omran, 'The epidemiologic transition a theory of the epidemiology of population change', *Millbank Memorial Fund Quarterly*, 49 (1971), 509–538.

16 J. Frenk, J.L. Bobadilla, J. Sepúlveda and L.M. Cervantes, 'Health transition in middle-income countries: new challenges for health care', *Health Policy and Planning*, 4(1) (1989), 29–39.

economically disadvantaged groups continue to suffer from pre-transitional pathologies. This epidemiological pattern reflects an economic and social situation of juxtaposition within the same society of a developed and an underdeveloped sector. In short, it is an expression, in terms of morbidity and mortality, of "combined and uneven development".

Morbidity and Mortality

The disease and death profile in South Africa predominantly reflects the protracted-polarised model, with infectious diseases affecting the poor, chronic diseases affecting both rich and poor and related to an urbanised lifestyle, and a large burden, particularly amongst the poor, of morbidity and mortality from trauma and violence.[17] The poor suffer from all three patterns of mortality simultaneously. This section will present some of the data on causes of mortality and then highlight how the social and economic transition is specifically impacting upon the health of young men and women

Based on the 1996 South African death registration, infectious diseases together with maternal and malnutrition related conditions account for 30.6% of deaths and chronic diseases account for 31.9%. Life expectancy in 1996 was 52.1 years for men and 61.6 years for women.[18] Overall life expectancy has dropped from 63 in 1990 to 57 in 2000. It is estimated that premature adult mortality (measured as the probability of a 15 year old dying before the age of 60) has started increasing and will reach levels close to 80% within the next ten years making it one of the worst in the world.

Perhaps the most striking examples of the burden of disease caused by the persisting poverty and underdevelopment in large parts of South Africa are the high rates of infant and young child mortality. Table 2 highlights the differences between Provinces and race groups.

It should be noted that there is also a great deal of variation within Provinces. For example for the three to four million people who still live in the former Transkei Homeland area in Eastern Cape the IMR is 99 while in greater Cape Town, which houses three-quarters of the Western Cape population, IMR ranges from 15 in middle-class, mostly white suburbs to over 50 in black townships.

The poor are also afflicted with high levels of chronic disease morbidity such as diabetes, hypertension and strokes. Even in the poorest areas these diseases account for almost the same proportion of mortality as infectious diseases (figure 2).

17 Bradshaw, et al., 1995.

18 StatsSA 1998.

Table 2. Infant and child mortality by province and population group, 1994–1998.

Province	Infant Mortality Rate (per 1 000 live births)	Under-5 Mortality Rate (per 1 000 live births)
Eastern Cape	61.2	80.5
Free State	53.0	72.0
Gauteng	36.3	45.3
KwaZulu-Natal	52.1	74.5
Mpumalanga	47.3	63.7
Northern Cape	41.8	55.5
Northern Province	37.2	52.3
North West	42.0	56.0
Western Cape	30.0	39.0
Population Group		
African	47	
Coloured	18	
Indian	*	*
White	11.4	15.3
South Africa	45	

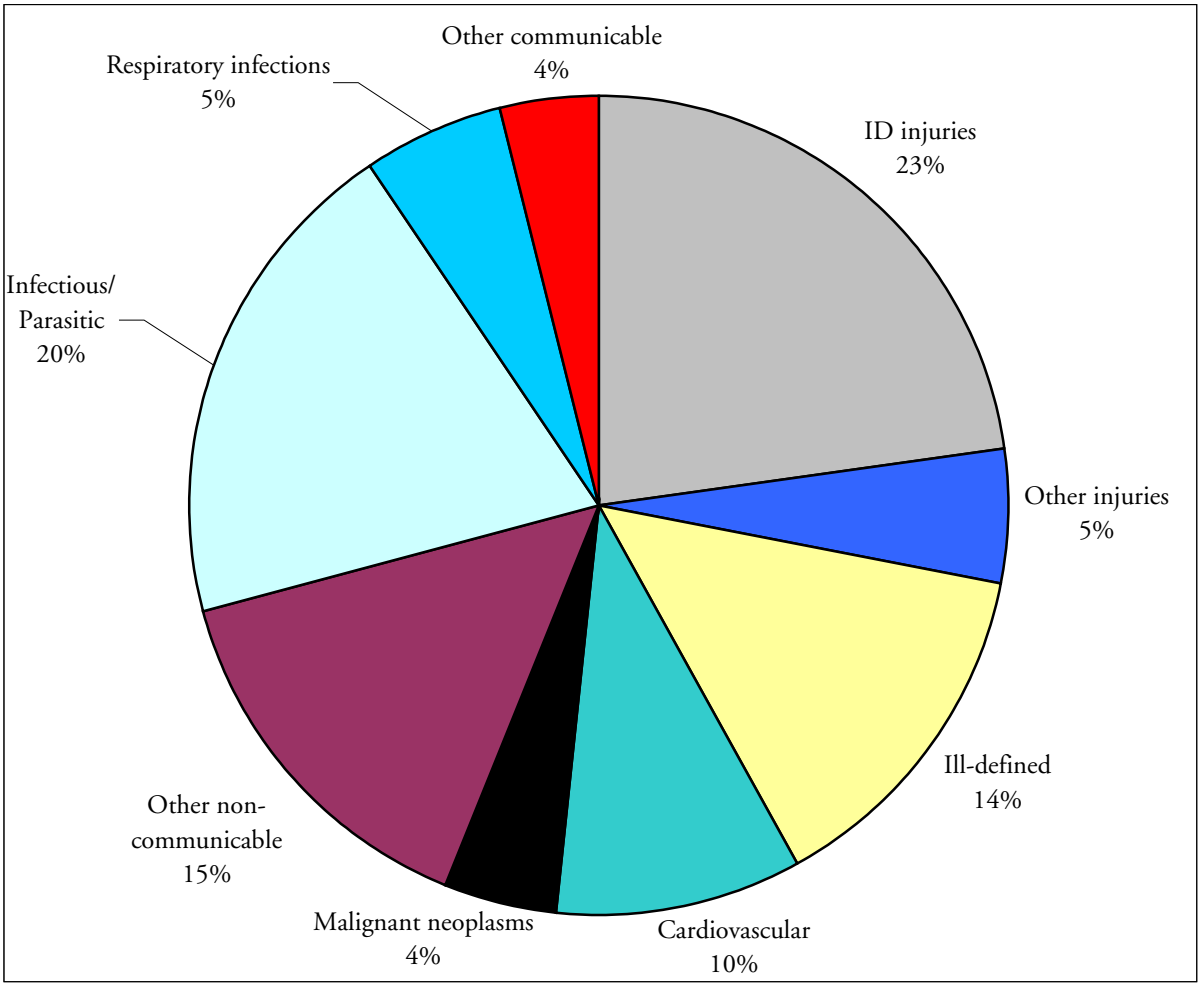
Source: National Department of Health 2001.

Data from mortuaries across the country suggest that about 15% of all mortality is from non-natural causes. Most of these deaths are either homicides or motor vehicle accidents. A striking feature is the high number of fatalities for men. On the whole these are young men. With regard to non-fatal injuries, a study conducted in state hospitals in four cities in 1999 found that 61% of patients admitted to trauma units in these cities were alcohol positive with a mean alcohol level of 0.12g/100 ml. We need to give some ideas of what is "high". The study showed that 74% of violence cases, 54% of traffic collisions and 42% of trauma from other 'accidents' were alcohol positive. Across sites nearly 40% of trauma patients were positive for at least one drug (29% cannabis, 11% Mandrax, 5% cocaine, 5% opiates, 0.3% methamphetamine and 0.2% amphetamine).[19]

Compounding all these statistics is the alarming rise of HIV/AIDS. The impact of this is reflected in massive increases in the mortality of young men and women during this transitional period (figures 3 & 4).

19 NIMMS 2000.

Figure 2. Poor areas male years of life lost (N = 446 015).



Source: Bradshaw & Laubscher, 2002.

The disproportionate effect that transition is having on different age groups, especially young men, is shown in table 3. This is reflected in the ratio of the number of deaths of young men as compared to that of older men. By 2000 it was the equivalent.

The remarkable rise in young male mortality has occurred despite a significant 'peace dividend' of reduced mortality from political violence, thanks to the transition to a democratic society (table 4).

Figure 3. Changes in Male Mortality.

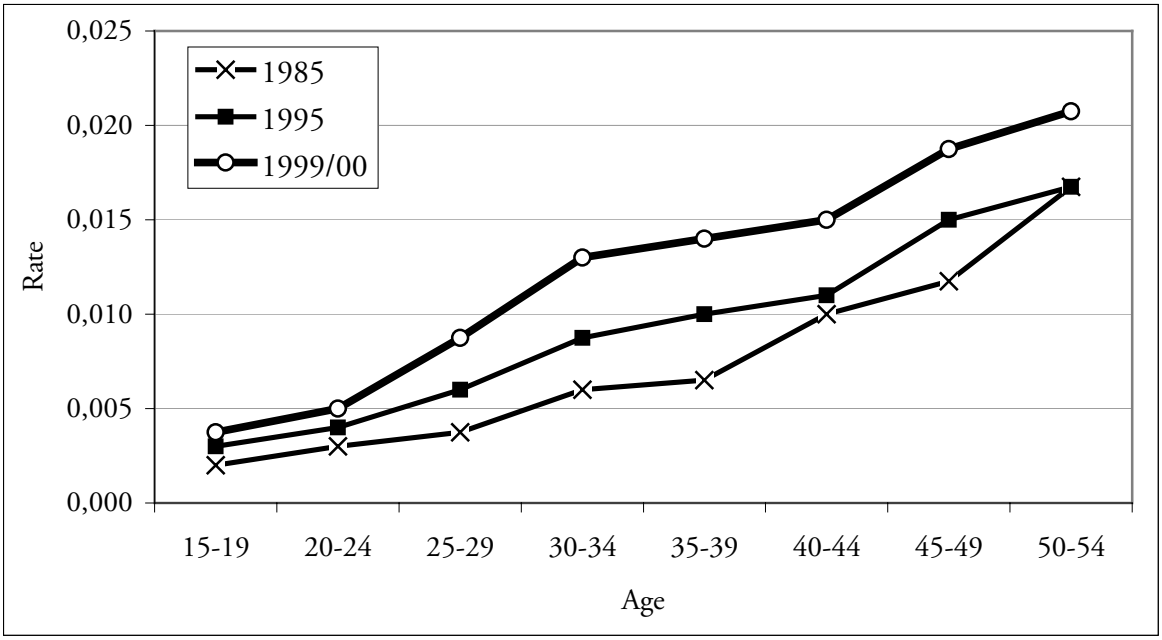
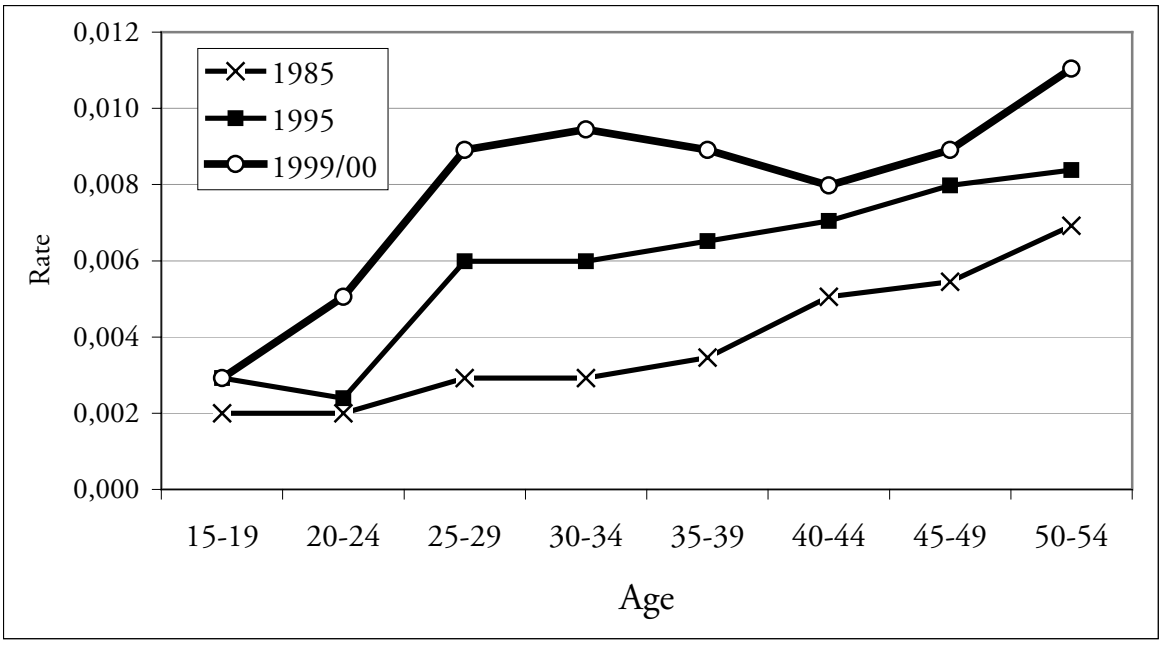


Figure 4. Changes in Female Mortality.



Source: Dorrington et al, 2001.

Table 3. Ratio of deaths aged 15–49 to deaths aged 50+.

Year	Ratio	
	Female	Male
1990	0.31	0.66
1993	0.37	0.73
1996	0.47	0.82
1997/1998	0.57	0.88
1998/1999	0.67	0.97
1999/00	0.78	1.00

Source: Bradshaw, 1998.

Table 4. Deaths from political violence (including TVBC states).

Year	Number of Deaths due to Political Violence
1985	879
1987	661
1989	1403
1991	2706
1993	3794
1995	1044
1997	470

Source: Bradshaw, 1998.

The Case of Cape Town

We now turn to examining more closely the interaction between the social and political transition and mortality through a more in-depth analysis of changes occurring in Cape Town.

Cape Town is situated on the south-western tip of South Africa and is home to about 3.5 million people. It is the third largest city in South Africa, following Johannesburg and Durban. Table Mountain and the spectacular Cape Peninsula are central to Cape Town's beauty, which harbours a vibrant cultural mixture of people. A large part of the less affluent population lives on the lower plains called the Cape Flats, which were relatively unpopulated until the 1960s. Since then two

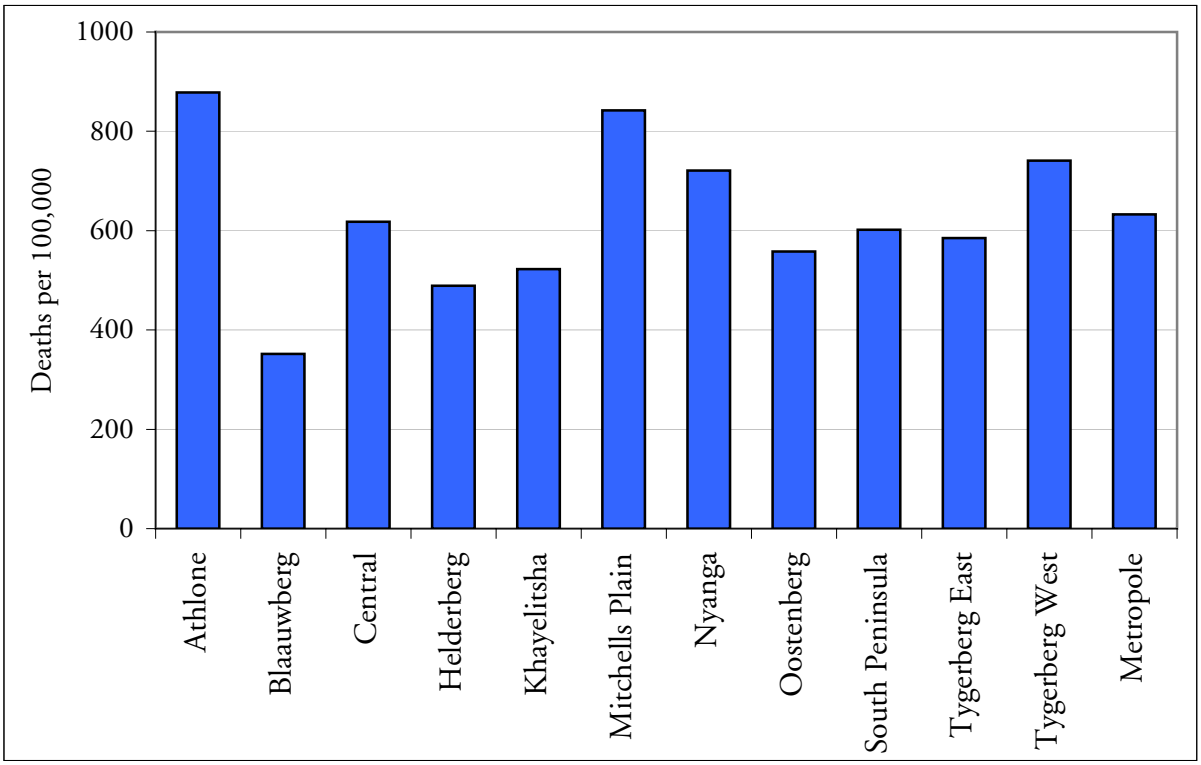
major waves of human settlement have taken place: after the 1960s forceful resettlement of so-called 'coloured' people by the apartheid government; and in the 1980s, when a then illegal process of large-scale African migration started from extremely impoverished areas of the Eastern Cape. At present, the area of Khayelitsha and Greater Nyanga accommodates about three quarter of a million people. In combination, apartheid spatial planning and strong migratory push factors contribute to the growing urban sprawl of the Greater Cape Town and the expansion of its highly racialised economic geographies. Whilst it has unique demographic and historical features the rapid growth, especially of the poor African townships, with the concomitant social, economic and political challenges make the issues facing Cape Town similar to other cities in South Africa.

Health Patterns Across the City

Total mortality varies across the City. The two districts with the highest concentration of poor African population, Khayelitsha and Nyanga, experience the greatest mortality. This difference is accentuated if we focus upon premature mortality as measured by Years of Life Lost (YLL). This is of particular interest to public health managers who work to avoid premature and preventable mortality. The average YYL in the City is 11,178 if Nyanga and Khayelitsha are excluded. This is almost half the premature mortality experienced by Nyanga (20,502) and Khayelitsha (18,974).

To understand the causes of premature mortality better, a review of the distribution of causes of mortality in each subdistrict is helpful. It appears that the disproportionate burden of premature mortality in Nyanga and Khayelitsha is as a result of high levels of infectious disease, injuries, road traffic accidents and homicide. The age standardised mortality rate (per 100 000) for infectious diseases is highest in Khayelitsha (266) and Nyanga (221) and lowest in Blaauwberg (58), South Peninsula (84) and Tygerberg East (92). The responsibility for addressing this inequity must rest firmly with the City government authorities, as the provider of basic services: water, sanitation and housing. Inadequate provision of water and sanitation is largely responsible for gastrointestinal infections and overcrowded housing allows the spread of respiratory infections such as tuberculosis. Maternal deaths are preventable if there is access to a good quality health service. One thing C.T. has is a good primary level maternity service, which is well-linked to higher levels. The burden of HIV is once again borne predominantly by Khayelitsha and Nyanga.

Figure 5. Non-communicable age standardized deaths per 100.000 persons in 2001.



Source: Groenwald et al, 2003.

A slightly different pattern emerges for mortality from non communicable disease (figure 5). The levels remain high in the poorest districts but are highest in districts such as Athlone and Mitchells Plain that rank just above the poorest districts. This reflects the increased prevalence of risk factors such as hypertension, smoking and diabetes in these poor communities compared with wealthier districts.

This pattern of mortality can only be understood in the context of the underlying structural determinants of mortality and the how the dynamic of integration into a global economy is influencing these determinants.

Economic Insecurity

The uniqueness of the Cape Town urban sprawl is not restricted to the recent and very rapid population growth, but also reflects the melting pot of extremes. It is a polarised city where affluent suburbs and economic centres present a stark contrast to the overcrowded, impoverished township communities. A recent survey of over 1500 households in the townships by the School of Public Health and PLAAS at the University of the Western Cape found that two thirds (67 percent) of wage earners do not earn enough to push their household above the poverty line, making them the 'chronic working poor', and half of breadwinners (52 percent) receive less than the minimum wage per month ($120). In addition to earning low wages in

general, the income stability of those households with employment is very precarious. For example, in 32 percent of households the main breadwinner had lost his/her job at some point during the last year, and 31 percent of households suffered the permanent loss of a full-time job during the last 5 years.

Lack of Infrastructure

Apart from the obvious handicaps such as lower education and skill levels (mostly due to the appalling quality of schooling in rural and poor urban areas), the spatial isolation of most poor African inhabitants is an often forgotten barrier to employment . Forty percent of main breadwinners take more than one hour to get to work. For 60% of breadwinners, a return journey to work exceeds R20 ($3) per trip. A recent report found that the poor in Cape Town have to commute an average of 16km to work compared with 12km for the rich.[20]

This reflects the inability of the city administration to instigate significant changes in the social and economic distribution across the city. Turok[21] highlights how the pressures to become a global city which attracts foreign investment and tourism has severely limited the progress towards urban integration. Despite an extensive and widely publicized process of identifying development nodes that are situated closer to the areas that have concentrations of the poor, nearly all private investment has continued to flow to the richer suburbs. This is largely due to the reluctance and inability of local government to influence market forces – 'the general implication is that income, social class and market forces have replaced race and state control in directing the pattern of urban development'.[22] Cape Town has been hit hard by the lowering on tariffs especially in the textile industry, with significant job losses. This is accelerating the growth of the informal economy. In 1996 35% of economically active people were engaged in this sector; this had risen to 45% by 2001.[23]

There is presently a backlog of about 220,000 houses and it is increasing by 30,000–50,000 per annum.[24] Yet at the same time housing resources allocated by central Government to Cape Town are decreasing as it is deemed less needy than other Provinces. Furthermore, Jenkins and Wilkinson[25] show that the ability of public investment to offset this is being compromised by pressure to cut expenditure especially in human resources. Often this is leading to the building of

20 CMC 1999.
21 Turok 2001.
22 Turok 2001 p. 2362.
23 CMC 2002.
24 Cape Metropolitan Housing Task Team 1999.
25 Jenkins and Wilkinson 2001.

sports halls and community centers that remain closed because of a lack of personal and operating costs. Finally, MacDonald et al.[26] provide compelling evidence of how the pressure for local government to become more 'entrepreneurial' is leading to privatization and escalating costs of basic services such as water and sanitation, and increasing number of cut-offs because of non-payment in the poorer parts of the city.

Men's health in South Africa and historical parallels

Understandably, in the "new" South Africa much of the focus in terms of health outcomes, and policies and programmes to address these has been our children and young women. It is clear, however, from the above, that the burden of mortality and morbidity experienced by particularly those from poor communities, is massive and increasing as a result mainly of HIV/AIDS and T.B., trauma and violence and substance abuse, especially alcohol. Men's health, which has been relatively neglected, but has recently become a topic of interest and activity in rich countries, is clearly of critical importance – both in its own right and in relation to economic productivity – in middle-income countries such as South Africa.

The fact that stark and disturbing trends in men's health are manifesting in South Africa's protracted-polarised epidemiological transition is, at first sight, surprising. After all, in developing countries is it not primarily men who all enjoy fully employment, better education and the fruits of urban living? While these social descriptors are indeed valid and reflect real phenomena, historical demography has shown that rapid social change associated with capitalist industrialization carries with it serious heath hazards, especially for men. The best documented studies are of early industrial Sweden and England/Britain. Both provide useful insights for South Africa.

Sundin and Willner[27] note a significant surplus male mortality in early nineteenth century Sweden: "Compared with women of the same age, the male surplus mortality existed for almost all of the contemporary registered causes of death. Among the most striking differences were deaths related to excessive alcohol consumption, accidents and violent deaths, suicides and tuberculosis. There was an urban/rural surplus of mortality for both sexes, but male urban mortality and the urban male/female surplus was particularly high. As has often been the case over time and space, married persons had the lowest figures within their respective sex.

26 MacDonald et al. 2003.

27 J. Sundin and S. Willner, 'Health and social transitions: The Swedish case'. Draft Paper for PHOENIX/MMF Workshop quoted with permission, (2002).

Local studies in areas where the proletarianisation had started indicate that men in the lowest social strata had the highest mortality figures, while the social gradient was not visible to the same extent among women. Consequently, the highest mortality risks existed among urban unskilled male workers without a wife at their side. These variations over time, space, class and between persons with different marital status means that the male/female differences cannot be explained by simple biological factors."

In their enquiry Sundin & Willner ask: "Why was the male surplus mortality primarily an urban phenomenon and why was it so high during the first half of the nineteenth century?" Their fascinating exploration attributes this phenomenon to a combination of linked factors associated with rapid and disorganized urbanization, namely, a lack of social networks of kin and neighbours leading to greater vulnerability, heavy consumption of alcohol with its associated negative impacts both on resources for food, housing etc. and associated accidents and violent trauma.[28]

Szreter[29] in his work on nineteenth century Britain describes a similar process of unprecedented rapid economic growth and urbanization between 1820 and 1870, accompanied by rising mortality rates and stagnating life expectancy. The increased incidence of infectious diseases was "indicative of a breakdown in the second quarter of the 19th century in urban administration and environmental health services.".[30] Szreter suggests that: "in the fast-growing industrial towns of Britain in the first half of the 19th century, environmental deterioration occurred through a configuration of three socially divisive forces, which were themselves intimately related to, indeed entailments of Britain's free-market pattern of economic growth. Firstly, inequality of incomes and wealth was growing apace, through the processes of capital accumulation, the seizing by an energetic and fortunate few of commercial opportunities and the extraction of rents of various kinds.[31] Secondly, the industrial town was continually receiving rural in-migrants, often in great surges during times of depression.[32] The in-migrants – all rural newcomers to the city and many of them Irish – tended to fill the least secure and lowest-paid jobs available."[33]

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28 Sundin and Willner, (2002), p.10.

29 S. Szreter, 'Rapid economic growth and the 'four Ds' of disruption, deprivation, disease and death: public health lessons from nineteenth century Britain for twenty-first century China?', *Tropical Medicine and International Health*, 4(2) (1999), 146–152.

30 Szreter (1999), p.147.

31 H. Phelps Brown, *Egalitarianism and the Generation of inequality* (Oxford University Press, Oxford, 1988).

32 M.A. Andersen, *Family structure in Nineteenth Century Lancashire* (Cambridge, 1971); C. Pooley and S. D'Cruze, 'Migration and urbanisation in North West England circa 1760–1830', *Social History*, 19 (1994), 339–358.

33 Szreter (1999), p.147.

Szreter provides also a third explanation for these health declines, namely residential segregation or "suburbanisation".

However, suggests Szreter, these three forces alone were not responsible for the deprivation, disease and death in Britain's industrializing cities. He attributes the lack of an effective political and administrative response at national and local government level to these environmental problems to what he terms "disruption". As a result of rapid economic growth, which, he suggests: "entails the disruption of established social relations, ideologies and structures of authority; this created political and administrative paralysis in Britain's industrial cities".[34] In addition to the important role of the state in provision and regulation of social benefits – welfare and environmental – Szreter invokes a more decentralized conception of "the state", embracing 'civil society', especially local government and the public service professions.

Szreter proposes that "to promote economic success and to avoid public disquiet over the health and welfare costs borne by many citizens in a growing 'market' economy, there needs to be careful attention to investment in the institutions of trust and communication which sustain 'social capital' or civic participation".[35]

In summary, then, the historical examples of industrializing Britain and Sweden exhibit strong parallels with South Africa, both in terms of its high mortality – which increasingly affects young men – and in terms of its rapid and squalid urbanization with accompanying disruption of social services and networks and declining social capital.

Prospects for men's health in South Africa

In both Britain and Sweden, the organic growth and spread of industrial capitalism and increasing intervention by the state in social provisioning, resulted in gradually improving working and living conditions – albeit differentially for different social groups – and with that the long, slow and substantial improvement of the health of their populations, including that of young men. What are the prospects then for global health improvement in South Africa, and, in particular, for young men's health? Can it be anticipated that the British and Swedish models will be "automatically" replicated by South Africa? Will an epidemiological transition occur?

In our view this prospect is extremely unlikely, unless the current social and economic dispensation is fundamentally reformed. For the present pattern of

34 Szreter (1999), p.148.
35 Szreter (1999), p.151.

economic globalisation, which appears to be entrenching a situation of "Combined and uneven development" both globally and in middle-income countries like South Africa, is propelling continuing disorganised, squalid and dangerous urbanisation. And it is into this maelstrom that young men are being driven from the destitute countryside to encounter the hazards of housing insecurity, dangerous informal employment, plentiful alcohol and cheap and risky sex. And the relative absence of social capital of all types – linking, bridging and bonding – in these situations renders and will continue to render this group highly vulnerable to morbidity and mortality.

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Health and Vulnerable Men
Sweden: From Traditional Farming to Industrialisation

Jan Sundin and Sam Willner

In every society, there are different kinds of resources for good health. For instance, social capital matters – formed in networks by members of the local community and supported by concerned public and private institutions. Finding ways to understand these processes, which are the most vulnerable groups and why it happens is a major theme for the following narrative.

An analysis of the relationship between health and social transitions during the late eighteenth and nineteenth century in Sweden must, due to the availability of sources, rely mostly on mortality figures and history has to be divided into three, partly artificial periods, making the social change visible:

The classical agrarian society, until c. 1800
The transition of the agrarian society before industrialisation, c. 1800–1860/70
Industrialisation and the classical industrial society, c. 1860/70 –

Each of these periods was characterised by specific mortality patterns, in certain ways linked to socio-economic factors. In addition, however, due consideration must be given to public health interventions by local and national government. In this story, the emphasis is put on the second period. It will be argued that the rapid transitions during the first half of the nineteenth century, for some groups and especially for adult men, created what is today described as social stress. It was reflected in a male mortality hump strikingly similar to the one that has been observed to a varying degree in the former Soviet empire after 1989. Such comparisons, however delicate because of all the differences, might help to identify and understand some of the more common connections between health and social transitions, but also underline the influence of specific contexts.

The Classical Agrarian Society

Until the nineteenth century, Sweden can be defined as a classical, *l'ancien regime* agrarian society. A vast majority of the population earned its living from farming and, especially in the forest areas in the north, from hunting, fishing and forestry. The minority, about 10 percent, lived either in the little towns in the households of craftsmen and merchants, or in relatively small iron foundries. War, infectious diseases and years of crop failures kept population growth at a modest rate. The age of marriage fluctuated according to the possibilities to become a farmer, craftsman or foundry worker and form a new family. Hence, with few illegitimate births, the size of a new generation was limited by its possibilities to marry and by its high mortality, especially among children but also among adults in the Middle Ages. Upward or downward social mobility between generations was an exception.[1]

Luther's *Haustafel* stated that each person had a given place on earth, which seemed to be in line with the existing social order.[2] The Bible, interpreted by the orthodox protestant priests, and Luther's Catechism, read and memorised by everybody, were the official guidelines for a good Christian life. These rules were internalised by a system of home education where the parents were obliged to teach their children to read and to memorise the central religious texts. Annual catechetical examinations of all persons above the age of seven took place ensuring that these duties were fulfilled and that nothing was forgotten later in life. In the countryside, parish meetings and village boards handled both spiritual and secular affairs. The priest, who should make sure that the decisions were in accordance with religious norms and secular laws, chaired these meetings. Special attention was paid to church discipline, not only concerning purely religious shortcomings but also juvenile delinquency, family disputes, drunkenness and other disorderly behaviour, which was not serious enough to be brought to the civil courts. Many parishes appointed village guards who should report about all kinds of "unrest" among their neighbours.[3] In this 'tight' local society, being obedient to the authorities and co-

1 L. Edgren, *Lärling, gesäll, mästare. Hantverk och hantverkare i Malmö 1750–1857* (Lund, Dialogos, 1987); B. Harnesk, *Legofolk: drängar, pigor och bönder i 1700- och 1800-talens Sverige*. Umeå Studies in the Humanities 96 (Almqvist & Wiksell International, 1990); A. Hörsell, *Borgare, smeder och änkor. Ekonomi och befolkning i Eskilstuna gamla stad och Fristad 1750–1850*. Studia Historica Upsaliensia 131 (Stockholm, 1983); Ch. Lundh, *The World of Hajnal Revisited. Marriage Patterns in Sweden 1650–1990*. Lund Papers in Economic History 60 (Lund, Department of Economic History, University of Lund, 1997); C. Winberg, *Folkökning och proletarisering. Kring den sociala strukturomvandlingen på Sveriges landsbygd under den agrara revolutionen*. Meddelanden från Historiska Institutionen i Göteborg 10 (Göteborg, 1977).

2 H. Pleijel, *Hustavlans värld: kyrkligt folkliv i äldre tiders Sverige* (Stockholm, Verbum, 1970).

3 E. Johansson, *The History of Literacy in Sweden in comparison with some other countries* (Umeå University and School of Education, Umeå, 1977); J. Sundin, 'Control, punishment and

operating with one's neighbours was the sensible way to become accepted and to avoid many problems. A majority of the population belonged to these 'insiders' while those who broke the rules and challenged the order became 'outsiders'. As an insider one could also hope that relatives, neighbours, guilds and other more or less informal institutions and networks intervened and tried to assist in difficult situations. Outsiders were looked upon with less compassion.

Being an insider was even more important since survival was always at risk. A harvest failure meant that the next year had to be endured at or sometimes even below the level of subsistence. Such years were often accompanied by an increase of migration and the spread of epidemics. During wars, generations of young men were drafted and many of them never came back to their home parishes. War consumed money and extra taxes put burdens on the whole population. War was also a source of epidemics, affecting both soldiers and civilians. Smallpox, measles, whooping cough, diarrhoea and other infections killed 20–35 percent of the infants and large numbers of those who survived their first year of life. In addition, dysentery, typhoid fever and other epidemics hit in all ages, making life more difficult for the survivors in the family. Death had to be accepted as the result of God's mysterious will. Seen from the point of view of the individuals, there was little they could do to prevent these events. Living a Christian life and relying on the '*Gemeinshaft*' and social capital invested in kin and neighbours could, however, be a source of support for the sick and in other ways unfortunate. And, in the end, the Bible promised eternal life for the faithful. While unpredictable in one sense, society was governed by simple rules and traditions.[4]

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reconciliation. A case study of parish justice in Sweden before 1850' in Anders Brändström and Jan Sundin, eds., *Tradition and Transition. Studies in microdemography and social change*. Report no. 2 from the Demographic Database, (University of Umeå, 1981); J. Sundin, 'Världslig pragmatism och religiöst nit. Om sexualitetens gränser i Sverige 1600–1850', *Norsk Historisk Tidskrift*, 2 (1991); J. Sundin, *För Gud, Staten och Folket. Brott och rättskipning i Sverige 1600–1840*. Rättshistoriskt bibliotek XLVII (Lund, 1992); J. Sundin, 'For God, State and People. Crime and Local Justice in Pre-Industrial Sweden', in Eric Johnson and Eric Monkkonen, eds., *The Civilization of Crime. Violence in Town and Country since the Middle Ages*, (University of Illinois Press, 1996 b).

4 J. Sundin, 'Vägen mot ett längre liv. Socialhistoriska aspekter på prevention under 1800-talet' in Ola Arvidsson and Gösta Carlsson, eds., *Kampen för folkhälsan. Prevention i historia och nutid*, (Natur och Kultur i samarbete med FRN, Stockholm, 1994); J. Sundin, 'Culture, Class and Infant Mortality During the Swedish Mortality Transition, c. 1750–1850', *Social Science History*, 19:1 (Spring 1995); J. Sundin, 'Child Mortality and Causes of Death in a Swedish City, 1750–1860', *Historical Methods*, 29:3 (1996 a), 93–106.

Usually, social historians study aggregated numbers of people, trying to find regularities or patterns that can tell something about society. This is a necessary task in order to get information about the structural factors and their interplay. Individual life histories are – if at all presented – usually illustrations, giving the readers a feeling that the story is really about human beings of flesh and blood. Individual life histories can also serve as a tool for empathy with the people under study. They can, however, also create hermeneutic understanding beyond mere figures, that only the unique – and yet often in many respects representative – life can represent. Before entering the "macro-history" of early nineteenth-century Sweden, the rich Swedish population registers will introduce us to the concrete lives of the poor in pre-industrial Linköping.

Dramatically high rates of infant mortality could be found in some families during the decades before 1800, for instance among the offspring of the postman *Johan Peter Dahlström* and his wife *Sara Christina Påhlman*. This couple was born outside Linköping. Johan Peter arrived in 1789 from Denmark, 27 years old, and Sara Christina was 35 years old, when she came from the city of Vadstena in 1790. They married in 1792 and had nine children (including three twin couples) between 1792 and 1799, all dying before their first birthday. Twins had a high fatality rate, usually because of their weakness at birth. The common cause of death for these nine children was, according to the register of deaths and burials, "slag" – stroke, which only tells us that death had come suddenly. This diagnosis is, however, often related to diarrhoea and other infections caused by the introduction of contaminated food at an early age. Bad hygiene can also have been one of the factors in the Dahlström family, indicated by the diagnosis "thrush" for one of the deceased children. Thrush is a non-fatal infection in the mouth and throat, caused by bad hygiene.

Finally, in 1800, a daughter, *Sophia Christina*, was born who survived childhood, like her brother who was born in 1802. The birth register calls their mother "madam", which tells us that her husband belonged to the lower middle class. Sophia Christina's chances looked relatively good compared with the social situation of many children born in the pre-industrial urban proletariat. Her mental capacities were also good, according to the marks in 'reading' and 'comprehension' given by the priest in the church examination records. Her brother was even called "scholaris", which tells us that his parents had sent him to the elementary school. He left Linköping for good when he was only 15 years old.

The daughters of the middle classes usually married when they were about 24–26 years old, but Sophia Christina appeared in the register already when she was 19. The reason for this young matrimony is recorded in the birth register, which tells us that the new couple had a son, *Claes Johan*, one month after the wedding.

Illegitimate births were a shame in Sophia Christina's social milieu, and we have strong reasons to believe that she "was forced to marry", according to the current terminology. This would also explain why she or her parents had chosen a husband of dubious social and moral character. *Olof Claes Fredriksson* was a drafted military musician, who had been tried for theft, but the case "rested" due to lack of proof. For some years, however, life seemed to be relatively calm and free from dramatic incidents and another son, *Gustaf Herman*, was born in 1822.

One event, which probably turned Sophia Christina's life course towards its tragic end, occurred in 1828, when her husband moved and became a trumpeter at the Crown Prince's regiment in Helsingborg, 400 kilometres south of Linköping. Her father had already died of cold and she was left alone with an ageing mother and two young sons. In 1832, she had an illegitimate son, either as the result of a casual relation or because she tried to make a living from prostitution. The child died a year later of "slag" and other misfortunes followed. Sophia Christina and her mother were convicted of illegal sale of alcohol several times, a common way of making a living for poor women. Her sons were convicted of attempted burglary when they were 15 and 12 years old. The older son, Claes Johan, started a career as "professional thief" a year later, when he was sent to the prison in Stockholm and did not return to Linköping until after his mother's death, then and ex-prisoner and ex-inmate at an institution for compulsory work.

Gustaf Herman was luckier and became an apprentice at a bakery when he was 15 years old, before his father returned to his wife in 1838. Sophia Christina's husband had been dismissed from his regiment (because of his age or misconduct). It only took two years before he suffered corporal punishment and public repentance at church for theft. The couple was living among the poorest parts of the population and Sophia Christina was "drinking a bit", according to the examination register. This note was changed to "drinks" a year later, indicating that her taste for alcohol had increased. The family lived at several places in the city before Sophia died, 42 years old, of a "wasting disease", probably tuberculosis.

Sophia Christina's life was of course not "representative", but it was, on the other hand, not unlike the fates of many other men and women in her surroundings. It illustrates the insecure social conditions during this transitional period. Being born, as it seems, in relatively good circumstances did not guarantee a safe and calm life. An unfortunate marriage and an ageing father, who had died when she and her mother were left alone with two young boys, became too difficult to handle within the norms and possibilities of their time. Illicit sale of alcohol was probably not the worst sin in the eyes of her neighbours, but having an illegitimate child was definitely not in accordance with the middle class perceptions of an orderly life. Alcohol became a comfort and an escape from the pains of everyday life, but probably also a cause of Sophia Christina's early death. The court's lists of fines tell

us that this "lifestyle" was relatively common among men, but much more stigmatising when it occurred among a small minority of women.

Even those who succeeded to live within the limits of the law faced many difficulties. *Brita Stina Samuelsdotter*, born during the same year as Sophia Christina, was the daughter of a crofter outside Linköping. She was 12 years old, when she had to leave home and become a servant in the families of other crofters, since her biological father died and her mother re-married. She arrived in Linköping when she was 27 years old and married *Petter Pettersson Mars*, a former soldier (getting his last name after the Roman god of war) who had been employed as a gravedigger. Their first residence was located in a house called *Fåfängan* (the Vanity), but the couple only stayed a while, before they continued to migrate more than once a year between the poorest houses in the city. They gave birth to three sons and one daughter, all surviving childhood. When Brita Stina was 44 years old, her husband died of a "wasting disease" at the age of 53. The widow continued to migrate within the city borders, while the children left her when they were old enough to be employed as "little servants", i.e. between 12 and 15 years of age. At the age of 55, she was left alone and entered the poorhouse, *Mörnerska stiftelsen*, where she spent her last 15 years in life.

The family had managed to live without poor relief while the husband was alive, but that was impossible for a lonely woman with four young children; the fate of many wives in the proletariat because of the high male mortality. But there were also more young men than women in Linköping, which meant that a lot of women became spinsters. Many of these single women had to depend on poor relief already when they were 40–50 years old, but this did not happen to *Stina Larsdotter*. She came to Linköping as a 25-year-old servant in the households of the upper middle class and gave birth to five children with an "unknown father". Three daughters survived childhood, living alternately with mother and foster parents. Usually housemaids stayed one or two years in the same household, and were finally pushed out of this labour market when they were 40, but at the age of 36, Stina became a servant in a merchant's house for 18 years. After that, she was found as an "ex housemaid" in different families or living together with widows and single mothers in situations similar to her own. Her three daughters took it in turns to live with their mother, moving away when a younger sister was old enough to assist in daily work. In the registers, mother and daughter appear like a team, sometimes 'embedded' in a wider network of social equals. This life kept Stina away from poor relief, until she died of tuberculosis, 62 years old. The youngest daughter, *Emilia Augusta*, stayed with her mother until the very end, and moved away from Linköping soon after the funeral.

Stina's limited luck was to become a trusted servant in the town's establishment and to have daughters, who literally stood by her side when she was old. *Olof Finström's* wife *Brita Catharina Olofsdotter* was too old for childbirth when they

married. He came from the city of Vadstena in 1829, when he was 27 years old, and became an apprentice of a carpenter master and alderman of the guild. Olof made a career and became an independent carpenter, although not with a master's certificate. He married Brita Catharina when he was 45 and she was 44 years old. She brought an illegitimate son to the new household, who went to another town after two years.

Olof was obviously a respected member of his trade, often living in the same house as other colleagues – a sign of the social importance of occupational networks. His popularity among the clerical authorities was, however, damaged, when he asked for permission to leave the State Church and join the Evangelic Methodist Church. It took the authorities six years to grant the request, when Olof was 78 years old. At the same time, the examination registers tell us that he couple was "destitute" and remained in that situation, until they died of "old age", when Olof was 84 and Brita Catharina was 87 years old. Olof had, as far as we have reason to believe, led a decent, orderly, diligent and sober life, but that was not enough to save the family from poverty in the end. Not having children in the neighbourhood, who could help, was of course unfortunate. The register's notation about their poverty is primarily recognizing that they would not have to pay any taxes, but there is no evidence saying that they were ever receiving poor relief from the municipality. We do not know how they managed without it, but it would not be unrealistic to guess that they were assisted by their Methodist 'brothers' and 'sisters', who were expected to live up to the standards of the early Christian congregations, while at the same time symbolising the birth of new types of social networks, formed by voluntary associations.

Although each of these life histories is in one sense unique, they are all at the same time typical of how life could be in a small Swedish nineteenth-century pre-industrial city. Brita Stina, like so many of her generation, came to the city in order to find work. Her family's movement from one house to another was very typical of the working class behaviour. Losing their husbands while the children were still unable to take care of themselves was a very common fate for the women and poor relief was often the only way to survive until the children could leave the home as soon as possible. Stina Larsdotter never married and, like many of the spinsters in the same generation, gave birth to several children whose fathers were said to be "unknown". Her daughters turned out to be her best 'social capital'. Among these three women, Sophia Christina illustrates the vulnerability even for those born in the lower middle class. Choosing or being forced by her pre-marital conception to marry the wrong man and losing her father when she had been left alone with two little sons was enough to change her life into misery, petty crime, drunkenness and, finally, an early death. Her case is another proof of the need for kin to rely on when life was difficult.

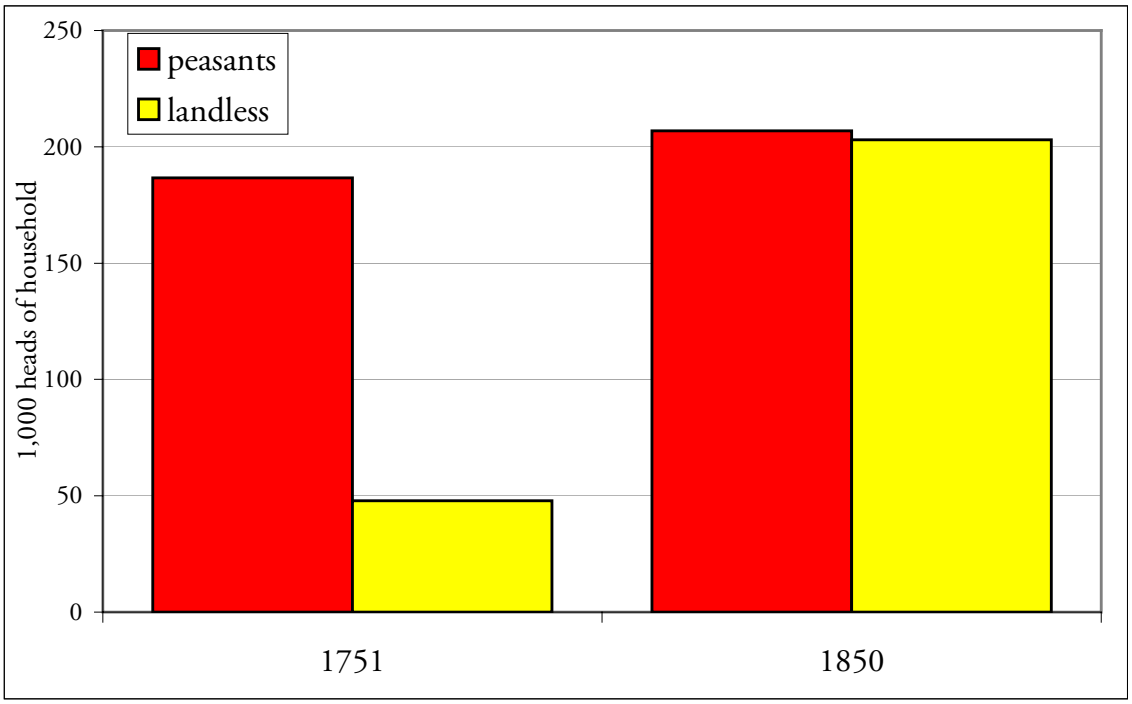
The Early Transition of the Agrarian Society, c. 1800–1860/70

The transition of the classical agrarian society accelerated during the first half of the nineteenth century. Enclosure and new techniques in agriculture increased productivity. In the more densely populated rural areas, for instance in the plains in the south of Sweden, the number of farms and the workforce needed to cultivate the land were reduced. The decline of infant and child mortality after 1810 produced a rapidly growing population and a larger proportion than before became crofters, on marginal plots of land, day-labourers or had to look for work in the little pre-industrial cities.[5]

These cities could offer work as servants for young women and men. Traditional crafts in the cities were at the same time stagnating, which meant that the opportunities to find steady, long-lasting employment were limited. As a result, the number of owners of land stagnated and the proportion of landless increased dramatically from 1750 to 1850 in Sweden (Figure 1). The little town of Linköping and its surroundings can serve as an example of the social changes taking place. In its agrarian hinterland, about 30 percent of the men above 14 years of age had been

5 A. Brändström and L-G Tedebrand, eds., *Swedish Urban Demography During Industrialisation*. Report no. 10, The Demographic Data Base (Umeå University, 1995); A. Brändström and L-G Tedebrand, eds., *Population Dynamics During Industrialization*. Report no. 13, The Demographic Data Base (Umeå University, 2000); A. Brändström, J. Sundin and L-G Tedebrand, 'Marriage and Urban Adaption. Sundsvall and Linköping in XIXth Century Sweden', *Annales de Démographie Historique*, 2 (1999), 97–117; A. Brändström, J. Sundin and L-G Tedebrand, 'Two Cities. Urban Migration and Settlement in Nineteenth-Century Sweden', *The History of the Family. An International Quarterly*, 5:4 (2000), 415–429; I. Eriksson and J. Rogers, *Rural labour and Population Change. Social and Demographic Developments in East-central Sweden During the Nineteenth Century*. Studia Historica Upsaliensia 100 (Stockholm, 1978); Erland Hofsten and Hans Lundström, *Swedish Population History. Main Trends from 1750 to 1970* (Stockholm, Liber, 1976); U. Jonsson, *Jordmagnater, landbönder och torpare i sydöstra Södermanland 1800–1880*. Stockholm studies in economic history 5 (Stockholm, 1980); Lundh, (1997); O. Lundsjö, *Fattigdomen på den svenska landsbygden under 1800-talet*. Stockholm studies in economic history 1 (Stockholm, 1975); S. Martinius, *Peasant destinies: the history of 552 Swedes born 1810–12*. Stockholm studies in economic history 3 (Stockholm, 1977); H. Nilsson and S. Willner, *Inflyttare till Linköping under 1800-talet* (Centrum för Lokalhistoria, Linköpings universitet, 1994); I. Olsson, *Att leva som lytt. Handikappades levnadsvillkor i 1800-talets Linköping*. Linköping Studies in Arts and Science 189 (Linköping, 1999); J. Sundin and L-G Tedebrand, 'Mortality and morbidity in Swedish iron foundries 1750–1875', in Brändström and Sundin (eds.) (1981); Sundin, (1992); J. Sundin, 'Individual Change or Environmental Reform? Historical Perspectives on Responsibility and Hygienism', in Patrice Bourdelais, ed., *Les Hygiènistes. Enjeux, modèles et pratiques*, (Belin, 2001); J. Söderberg, *Agrarian poverty in southern Sweden during the nineteenth century*. Stockholm studies in economic history, 4 (Stockholm, Almqvist & Wiksell International, 1978); J. Söderberg, U. Jonsson and Ch. Persson, *A stagnating metropolis: the economy and demography of Stockholm, 1750–1850* (Cambridge, 1991); Winberg, (1977).

Figure 1. Social structure of the agrarian population in Sweden 1751 and 1850. Number of male heads of household.



Source: C. Winberg, *Folkökning och proletarisering* (Göteborg 1975).

farmers in the year 1750. In addition, many young servants reached that position later in life. In 1850 this figure had been reduced to less than 20 percent. In the city itself, the percentage of male apprentices, workers and servants increased from about 50 percent in 1800 to 70 percent in 1850, while the proportion of master craftsmen and other members of the established groups decreased accordingly.

The labour market offered more jobs for female servants than for males, which created a 25 percent female surplus. Consequently, a considerable number of women could never marry. When they had reached the age of 40, most of these female servants were fired and replaced by younger candidates. Together with the widows, this group had to rely on casual work or poor relief. Similar circumstances were common among many men when they had reached what we today consider being the upper middle age. The difficulties to find steady jobs and form a family caused the average age of marriage to rise to about 30 years for both sexes among the lower classes. This, and the female surplus, contributed to a rapidly increasing illegitimacy rate. In Linköping, almost 30 percent of the children were born outside marriage during the 1820's. Another reason was the rapid population turnover. Migration was intensive and only a minority of the inhabitants had spent most of their lives in Linköping. The majority arrived as young adults and stayed for one or

a few years. Some remained longer, but they frequently moved from one house to the other and often lacked important ties to relatives in the neighbourhood.[6]
Informal social control was not as tight and effective as it had been in the stable traditional society and many men could choose to deny fatherhood or refuse to marry the mother without being stigmatised by the local opinion. For some of the contemporary commentators this was seen as a general slackening of morality among the poor women. However, considering the hardships for the unmarried mother, we have no reason to believe that her situation was chosen voluntarily or wished for. Without the support of a husband, parents or other relatives, these mothers had great problems to work and take care of their newly born children at the same time. As a result, infant mortality was extremely high in this group while it remained close to the general average if the single mother could rely on the support of her closest kin.[7]

Thus, the cities became the focus of many social problems connected with the transition that took place. For a minority these changes meant new opportunities. Besides with the traditional four *stånd* (estates: nobility, clergy, burghers and farmers), each with specific privileges and representation in the Parliament, a new middle class emerged consisting of persons of standing and wealth outside the nobility: owners of iron foundries, successful merchants, members of the expanding civil bureaucracy and others who had managed to climb the social ladder. The social and economic gaps widened and the political influence in local affairs were to a greater extent concentrated in the hands of the elite, which created its own "Victorian" system of cultural values and felt less related to their poorer neighbours. Occasionally these social tensions manifested themselves in riots but never of a magnitude that could seriously threaten the establishment.

Everyday signs of the tensions were registered in the court's records of minor violence.[8] In Linköping, as in other cities, petty fights and quarrels had been very common for centuries. Traditionally they were conflicts between social equals, starting at the pub or in other circumstances when honour was at stake and,

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6 I. Artaeus, *Kvinnorna som blev över. Ensamstående kvinnor under 1800-talets första hälft – fallet Västerås*. Studia Historica Upsaliensia 170 (Stockholm, 1992); S. Carlsson, *Fröknar, mamseller, jungfrur och pigor. Ogifta kvinnor i det svenska ståndssamhället*. Studia Historica Upsaliensia 90 (Stockholm, 1977); S. Carlsson, 'Kvinnoöden i Mälardalen under 1800-talet – en jämförelse mellan land och stad', *Annales Academiae Regiae Scientarum Upsaliensis*: 80–125 (Uppsala, 1978); Edgren, (1994); J. Sundin, 'Äktenskap, ensamskap och hälsa förr och nu. Tankar kring ett forskningsfält' in Tom Ericsson and Agneta Guillemot, eds., *Individ och struktur i historisk belysning. Festskrift till Sune Åkerman*. Forskningsrapporter från Historiska institutionen vid Umeå Universitet, 10, (Umeå, 1997).

7 M. Bengtsson, *Det hotade barnet: tre generationers spädbarns- och barnadödlighet i 1800-talets Linköping*. Linköping Studies in Art and Science, 145 (Linköping, 1996); Sundin, (1995).

8 J. Sundin, 'Theft and Penury in Sweden 1830–1920. A comparative study at the county level', *Scandinavian Journal of History*, 1 (1976); Sundin, (1992); Sundin, (1996 b).

according to the tradition, had to be defended with the fists. Such events occurred even during the nineteenth century but a new type of conflict became more common than before: verbal or physical aggression against representatives of the upper classes or the guards responsible for the keeping of the peace at public places. This upsurge of social tensions was accompanied by an intensified campaign for law and order, initiated by the local elite, and the counter-resistance from those who were the targets of this control. The prosecution of drunkenness in public places is a striking example. The number of recorded cases rose year by year during the first half of the nineteenth century, to some extent reflecting an increased consumption of alcohol. It was, however, also an effect of the elite's growing sensitivity to what it considered being disorderly behaviour in the lower classes.

Other criminal offences also became more frequent during the first half of the nineteenth century. The number of thefts and other property crimes increased. Homicide rates had dropped steadily in Sweden since the end of the seventeenth century, but started to rise again after 1800. For the major part – manslaughter – alcohol was often told to be a trigger effect. While some contemporary commentators were pointing at poverty and socio-economic factors as the main cause, others were describing this new proletariat as a depraved and immoral group, a dangerous class that had to be further controlled and educated.[9]

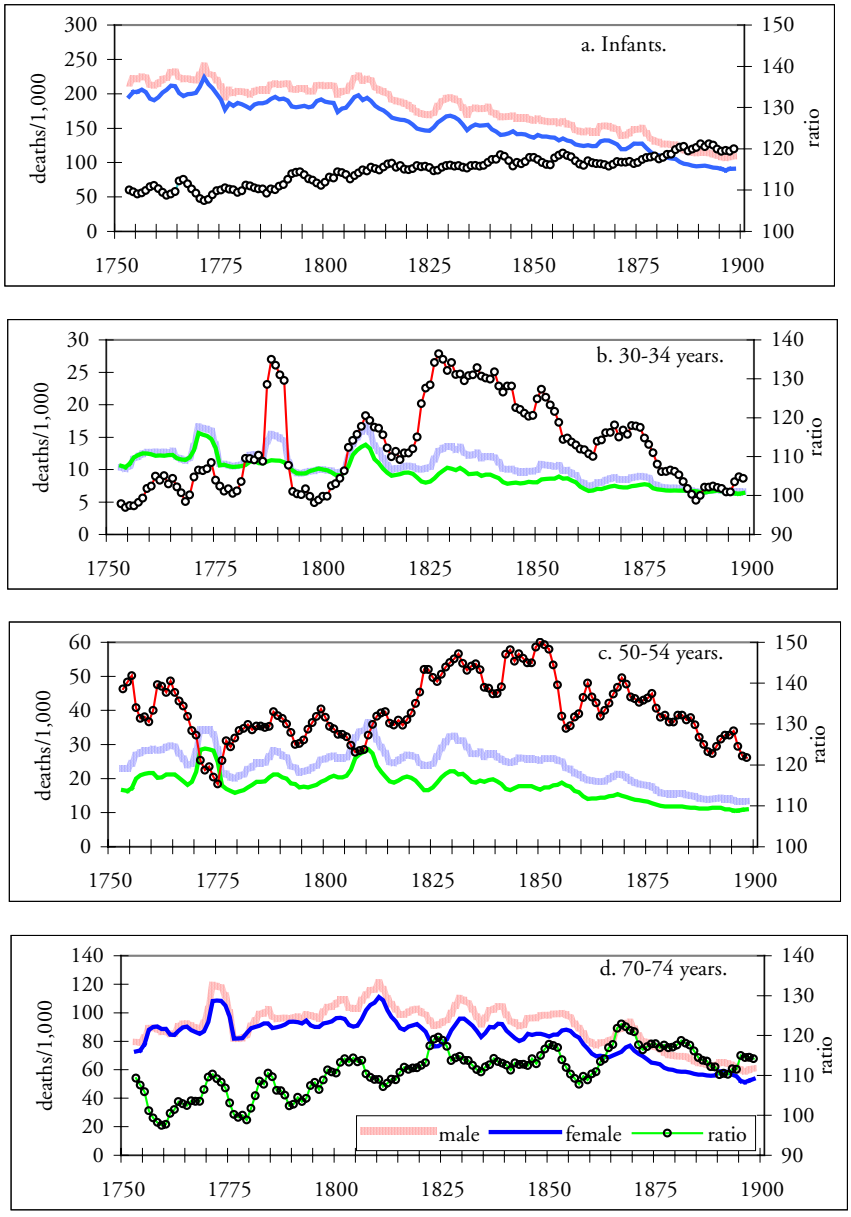
The Mortality Decline

During this period, mortality trends differed depending on age and sex. For *infants* the figures started to decline steadily after 1810 (Figure 2 a). Usually, the greatest decline took place in areas where the mortality had been exceptionally high, i.e. in towns and certain rural areas. In places where the infant mortality rate (IMR) had been relatively low (close to 10 percent) there seemed to be a threshold preventing the figures to drop much before the end of the nineteenth century. From 1810 to 1860, however, the national figure went from 19 percent to 12 percent and in the city of Linköping it went from 37 to 16 percent.[10]

9 B. Petersson, *"Den farliga underklassen". Studier i fattigdom och brottslighet i 1800-talets Sverige*. Umeå studies in the humanities 53 (Stockholm, 1983).

10 Bengtsson, (1996); A. Brändström, *"De kärlekslösa mödrarna". Spädbarnsdödligheten i Sverige under 1800-talet med särskild hänsyn till Nedertorneå*. Umeå Studies in the Humanities, 62 (Umeå, 1984); A. Brändström and L-G Tedebrand, eds., *Health and Social Change. Disease, health and public care in the Sundsvall district 1750–1950*. Report no. 9, The Demographic Data Base (Umeå University, 1993); A. Brändström, S. Edvinsson, and J. Rogers, 'Illegitimacy, Infant Feeding Practices and Infant Survival in Sweden 1750–1950. A Regional Analysis', *Hygiea Internationalis*, 3 (2002) [http://www.ep.liu.se/ej/hygiea/]; J. P. Mackenbach, 'Income inequality and population health', *British Medical Journal*, 324 (Jan. 2002); R. Castensson, M. Löwgren and

Figure 2a–d. Sex- and age-specific mortality and male/female mortality ratio (females=100) in Sweden 1750–1900.



Source: G. Sundbärg, Bevölkerungsstatistik Schwedens 1750–1900 (Stockholm 1909).

J. Sundin, 'Urban Water Supply and Improvement of Health Conditions' in Anders Brändström och Lars-Göran Tedebrand, eds., *Society, Health and Population During the Demographic Transition*, (Stockholm, 1988); U. Högberg, *Maternal mortality in Sweden*. Umeå University medical dissertations, N. S. 156 (Umeå University, 1986); M. C. Nelson and J. Rogers, 'The epidemiological transition revisited. Or what happens if we look beneath the surface?', *Health Transition Review*, 7: 2 (1997); B-I Puranen, *Tuberkulos. En sjukdoms förekomst och dess orsaker. Sverige 1750–1980*. Umeå Studies in Economic History 7 (Umeå, 1984); J. Sundin, 'Environmental and other factors in health improvement explaining increased survival rates in 19th century Sweden' in Erik Nordberg and David Finer, eds., *Society, environment and health in low-income countries*, (Department of International Health Care Research, Karolinska institutet, Stockholm, 1990); Sundin, (1995); Sundin, (1996 a); Sundin and Tedebrand, (1981).

Swedish authorities had access to mortality rates by sex, age and causes of death for each parish since 1749.[11] They noticed the high number of incidents among infants and children and the great regional differences, a problem since a large and healthy population was supposed to be a necessary asset for the wealth of the State.[12] One way to improve this situation was to invest in health care, especially by increasing the number of district physicians appointed and partly paid by the State. This was necessary in a sparsely populated country where the market for private practitioners was weak. The reform started modestly with one physician sometimes responsible for a large area where he could hardly visit each parish more than a few times during his years of service. After 1800, however, the number of positions increased steadily. A school for the training of midwives had also been established in Stockholm during the eighteenth century.

The curative and therapeutic effect of these investments may have been limited. Physicians were, however, looking upon themselves as the agents of health in a wider sense, trying to observe the patterns of disease in their districts and suggesting preventive remedies. As a well-recorded example, *Carl Josua Wretholm*, the physician in Nedertorneå on the northern border to Finland, noticed the high infant mortality in his district, often above 30 percent during the first decades of the nineteenth century.[13] He was convinced that the reason for this detrimental condition was to be found in the total lack of breast-feeding among the mothers. In the 1830's he started a campaign in order to change the habits. It was not easy to fight against a long-lasting tradition, but after he had managed to convince the farmers to hire an educated midwife, the campaign became easier. In letters to his superiors in Stockholm he could proudly report the gradual success, which had reduced the mortality figures considerably before his death in 1866.

Nedertorneå was one of the extreme examples, but unsatisfactory breast-feeding patterns were also reported from other, if not all, parts of Sweden. Other colleagues of Wretholm's were engaged in similar campaigns. Hence, prolonged and more consistent breast-feeding, and perhaps also generally more hygienic child care, made its substantial contribution to the decline of infant mortality in a number of areas of nineteenth century Sweden.

During the second half of the eighteenth century, many Swedish physicians were engaged in attempts to inoculate against smallpox, using contagious matter from an infected person. The extent of inoculations and their effect on the overall mortality rate has been seriously questioned. At any rate, it paved the way for the very quick

11 P. Sköld, *Kunskap och kontroll. Den svenska befolkningsstatistikens historia* (Demografiska Databasen, Umeå Universitet, 2001).

12 K. Johannisson, *Det mätbara samhället: statistik och samhällsdröm i 1700-talets Europa* (Stockholm, Norstedt, 1988).

13 Brändström, (1984).

introduction of the vaccination method demonstrated by Edward Jenner. During the first decades of the nineteenth century the big smallpox epidemics of the previous century disappeared and the mortality figures went down drastically. The success was made possible by the collaboration between national authorities, district physicians and local administration in each parish and town. The local Church was responsible for the vaccination of children, carefully recorded for each individual in the catechetical examination registers. Based upon this organisation, the campaign met relatively little resistance from the parents' side even before it became compulsory by law. For infants, but even more for *children above their first year of age*, the elimination of major smallpox epidemics was an important factor behind the mortality decline. Despite the social problems described above, Sweden could therefore rely on a growing number of health agents, an efficient local administration and new medical technology (vaccination) implemented within these institutional frameworks.[14]

Infant mortality was usually high in urban areas, even in little towns with less than 1,000 inhabitants.[15] Small aggregations of people were enough to create a favourable milieu for the spread of air-, water- and food-born diseases, 'the urban penalty'. In Linköping, IMR was, for instance, often above 30 percent before 1810. After that year, the figures went down almost uninterruptedly. Even in this case, more consistent and prolonged breast-feeding and smallpox vaccination were important factors behind the positive development. It is, however, also plausible that the campaigns for general orderliness, as recorded in the court's lists of fines, had a positive effect on people's health. From 1810 and onwards we find a growing number of convictions for neglecting to clean the gutters, spreading dirt at forbidden places, washing cloths in the river close to the place where the drinking water was fetched and other offences that worsened the hygienic conditions. In 1817, the city magistrate decided that the place where the fresh water was taken should be moved up-streams where it could not be contaminated by the dirty surface water from the town. Limited as they were, such measures preceded more extensive attempts to clean the cities during the second half of the century, and played a role in reducing the exposure to gastro-intestinal diseases.[16]

In Sweden, as well as in Linköping, mortality declined after 1810 among children after their first year of life too, particularly as an effect of smallpox vaccination. When the infants faced fewer serious infections during their first year of life, they may also have become stronger and more resistant to new attacks when they grew

14 P. Sköld, *The Two Faces of Smallpox. A Disease and Its Prevention in Eighteenth- and Nineteenth-Century Sweden*. Report no. 12, The Demographic Data Base (Umeå University, 1996).

15 Sundin, (1995); Sundin, (1996 a).

16 Sundin, (1992).

older. One sign of a positive synergetic effect between different diseases is seen among the infants in Linköping, where the reduction of food- and waterborne causes of death was accompanied by a similar decline of deaths by airborne diseases without any reasonable explanation why the exposure of the latter had diminished. Increased geographical mobility and population density would have created an increase of exposure, but such an effect can only be observed in the temporary rising mortality in scarlet fever and diphtheria during some decades around the middle of the century.

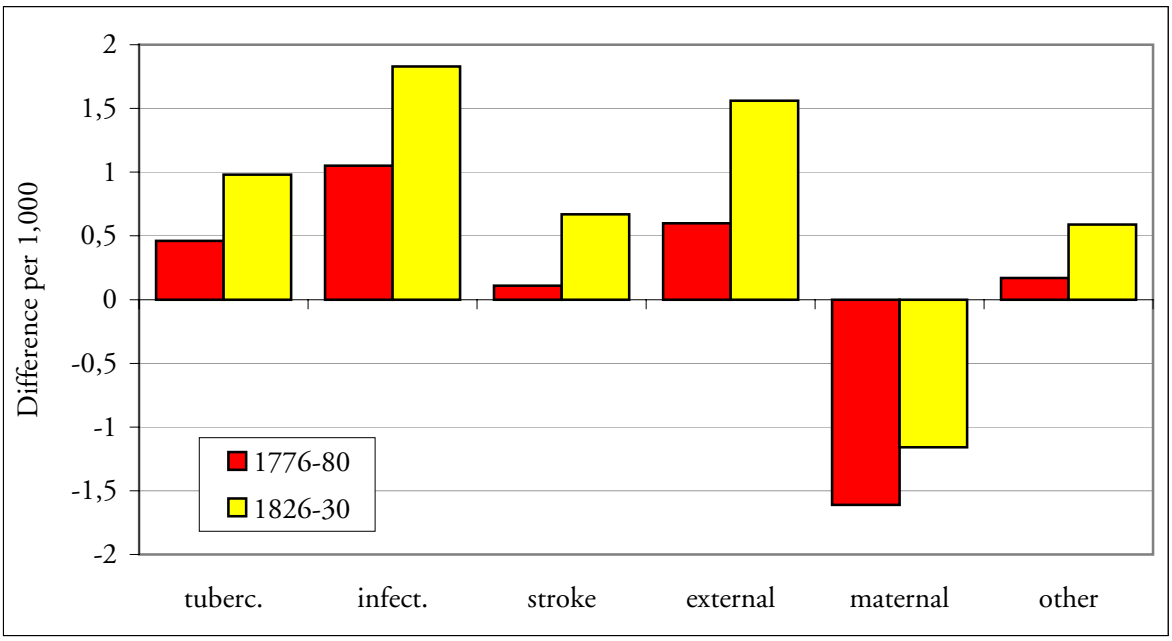
So far, some factors have been pointed at, which contributed to the early nineteenth century decline of infant and child mortality. Some of these factors were age specific while others, such as a general improvement of hygienic conditions, would also have been positive for adults. Positive health experiences *in utero*[17] and in childhood have a tendency to promote good health and higher life expectancy later in life. Actually, the mortality of *young and middle-aged women (Figures 2 b–c)* followed the trend of the children with a visible decline after 1810. The assistance of trained midwives may also have been positive for the mothers. Maternal mortality was reduced, probably due to improved hygiene in general and especially during delivery. It declined earlier in the city of Linköping, where assisted childbirths were more common, than in the surrounding countryside where professionally trained midwives were used less frequently during the beginning of the nineteenth century. For women in the oldest ages, however, mortality did not start to decline at the same time, probably because of the materially vulnerable situation of many poor spinsters and widows.[18]

Summarising the mortality experience of children and women, we find that the increased survival rates are to some extent caused by conscious interventions of health agents (physicians and midwives) supported by national agencies in co-operation with local institutions. It was, in a sense, a happy meeting between *Mercantilism*, giving the State a reason to invest in health care institutions, and *Enlightenment*, believing in the possibility to discover, study, understand and influence what was previously usually seen to be God's unchangeable will. Although Sweden was a sparsely and relatively poor country, historical traditions of paternalism and local self-government based on participation and negotiation with higher authorities made these interventions successful. That does not mean that total harmony and consensus was always signifying the relations between local society and the Crown. Conflicts did occur, but compared to many other countries

17 D. J. P. Barker, *Mothers, Babies and Health in Later Life* (Churchill Livingstone, Edinburgh, 1998).

18 Högberg, (1986); S. Willner, *Det svaga könet? Vuxendödlighet i 1800-talets Sverige*. Linköping Studies in Arts and Science, 203 (Linköping, 1999).

Figure 3. Sex differences for selected causes of death, 25–49 years. Sweden 1776/80 and 1826/30 (+ = male surplus; – = female surplus).



Source: S. Willner, *Det svaga könet?* (Linköping 1999).

at that time, Sweden was still an almost monolithic society with one State religion infiltrating the minds and institutions locally.[19]

For *adult men*, we are, however, facing an intriguing question (Figures 2 b–c). Why were these men not affected by the same positive factors as children and women? Or was there another negative factor, specific for men, "overshadowing" the positive effects? This negative trend for men was still strong even if we take the female reduction of maternal mortality into consideration. Hence, among the men mortality stagnated on a high level or even increased for certain age groups until the middle of the nineteenth century.[20]

Compared with women of the same age, the male surplus mortality existed for almost all of the contemporary registered causes of death (Figure 3). Among the most striking differences were deaths related to excessive alcohol consumption, accidents and violent deaths, suicides and tuberculosis. There was an urban/rural surplus of mortality for both sexes, but male urban mortality and the urban male/female surplus was particularly high. As has often been the case over time and

19 M. C. Nelson and J. Rogers, 'The Right to Die. Anti-vaccination Activity and the 1874 Smallpox Epidemic in Stockholm', *Social History of Medicine*, 5 (1992); Sköld, (1996).

20 S. Edvinsson, *Den osunda staden. Sociala skillnader i dödlighet i 1800-talets Sundsvall*. Report no. 7 from the Demographic Data Base (Umeå, the Demographic Data Base, 1992); Söderberg et al., (1991); Willner, (1999).

space, married persons had the lowest figures within their respective sex. Local studies in areas where the proletarianisation had started indicate that men in the lowest social strata had the highest mortality figures, while the social gradient was not visible to the same extent among women. Consequently, the highest mortality risks existed among urban unskilled male workers without a wife at their side. These variations over time, space, class and between persons with different marital status means that the male/female differences cannot be explained by simple biological factors. We must, instead, look for social and cultural determinants, i.e. gender differences.

We have no indication of early nineteenth-century Swedish men being generally materially worse off than women. The official salary for male servants was for instance twice as big as the salary for females and the labour market for women was limited to low-paid work. One difference was, however, that most unmarried women were, as housemaids, members of a household and guaranteed a minimum supply of food and shelter. Women were also, through their work roles, more accustomed to cooking, keeping a clean surrounding, etc., something that has been mentioned as a positive factor when explaining the lower mortality among unmarried women compared to unmarried men. There is also solid evidence that men in general and unmarried men in particular were allowed, or allowed themselves, to engage in more disorderly lifestyles, culturally defined negative rights.

Deaths caused by accidents have, for instance, usually been more common among men than among women, even when the accidents are not connected with a certain occupation. This difference exists already among boys at an early age, when non-gender related risks for the two sexes ought to be relatively equal. Adding the testimonies from statistics on violent deaths, deaths caused by alcohol, and the fact that men were more often involved in violent events according to the crime registers, the male role appears to be more prone to risk behaviour. Women seem to have had more 'duties' and expectations to lead an orderly, quieter life, which contributed positively to their health.

The differences by marital status were greater amongst men than amongst women. Part of these differences can probably be explained by negative selection, but it cannot explain why the differences vary in strength over time and space. Émile Durkheim's theory that marriage is an institution providing the partners with a sense of meaning and both external and self-inflicted social control, especially for men, seems to be worth taking seriously. We could therefore make a stereotype of the unmarried men as more prone to risks and unhealthy behaviour, while unmarried women, due to their internalised gender roles, were more careful and often associated themselves with more constructive networks. In Swedish pre-industrial cities it has, for instance, been found that certain houses were occupied by lonely mothers and widows where they could live in some kind of symbiosis,

elderly widows taking care of the children while the mothers were working and younger women 'paying back' with other types of help. Thus, women should have been more efficient in using their social capital. The married man was supposed to be the major breadwinner in the household, his most important and status-loaded duty. He could fulfil this responsibility as long as he had a work, giving him money to feed the family.[21]

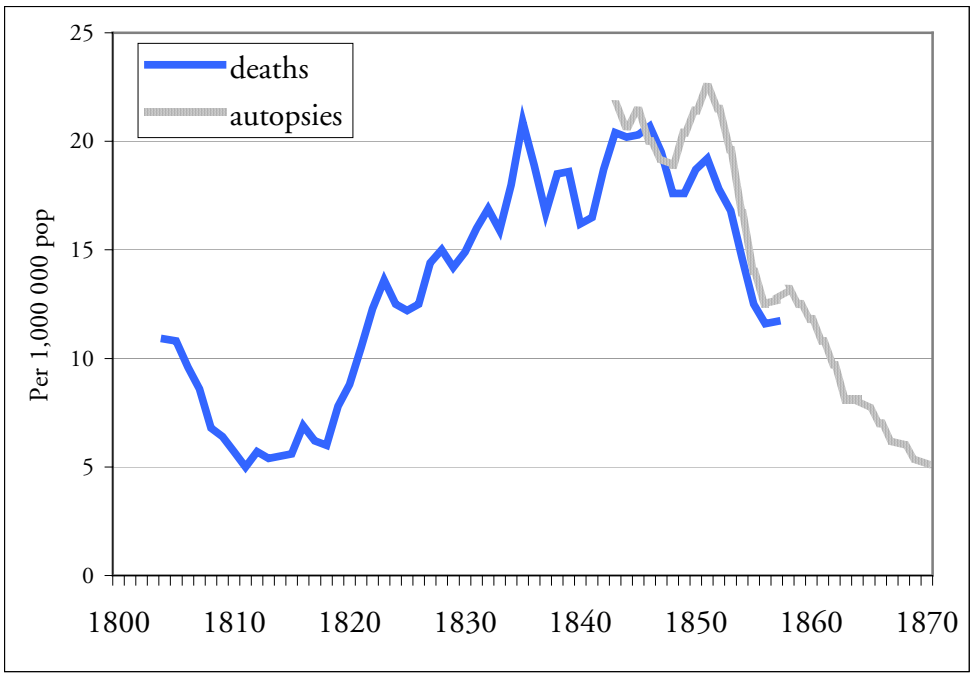
So far, we have been discussing factors that could explain mortality differences between men and women and by marital status. Two key questions remain to be discussed further: Why was the male surplus mortality primarily an urban phenomenon and why was it so high during the first half of the nineteenth century? The urban penalty for males has been observed in several historical contexts, which indicates that the urban milieu may – at least under certain conditions – have characteristics that are negative for the men's health.

Secularisation came earlier to the towns and the form of social control represented by church discipline was therefore less effective. Male servants and apprentices were still often living in the households of their masters, but the masters' paternalistic influence over his employees was hard to uphold when they were off-duty and entertaining themselves. The court records tell us that female servants were not at all engaged in what was defined as unruliness and debauchery to the same extent as the males. Finding oneself in a new milieu easily lead to a sense of being uprooted. Old rules from the agrarian society did no longer work. Often lacking networks of kin and neighbours made the male immigrants more vulnerable.

Alcohol was an obvious mediator of illness and mortality (Figure 4). Although we are lacking reliable data on the consumption per capita during the first half of the 19th century, several factors strongly indicate a substantial increase and culmination during this period, contributing to the rise in excess male mortality. Among other things, the development of the registered deaths due to alcohol intoxication culminated in the 1840s. The out-shipping of alcoholic beverages from certain production districts to other parts of Sweden increased substantially during this period. Contemporary estimates of alcohol consumption, as well as the official reports of county governors, also support this view. Alcohol could be bought at a relatively low price and the restrictions of production and sale were lenient especially in the urban areas. In towns, the number of legal pubs was large, not counting the 'speak easies', giving extra incomes to widows and other members of the poor population.

21 Sundin, (1997); J. Sundin, 'Worlds We Have Lost and Worlds We May Regain: Two Centuries of Changes in the Life Course in Sweden', *The History of the Family. An International Quarterly*, 4: 1 (1999).

Figure 4. Alcohol intoxication. Registered deaths and autopsies. Sweden 1804–1870.



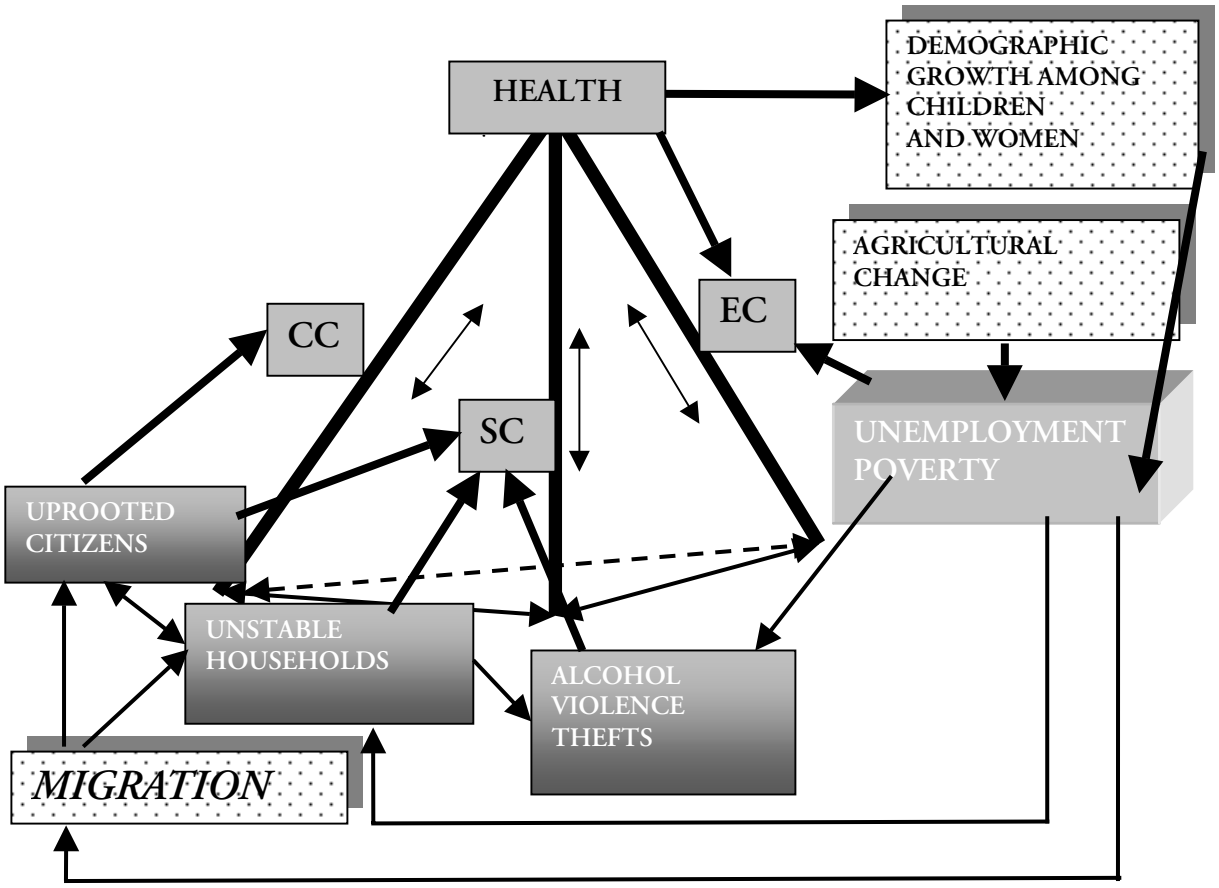
Source: S. Willner, *Det svaga könet?* (Linköping 1999).

Certainly, the mortality impact of alcohol consumption was much larger than the relatively few registered cases of acute alcohol intoxication. Heavy drinking affected health-related living conditions with regard to nutritional situation, housing conditions, hygiene, etc. and diagnoses such as lung consumption, stroke and external causes (primarily accidents and suicides) were to some part caused by excessive drinking.

The pioneering work, *Alcoholismus Chronicus*, published in two volumes 1849–51 by the Swedish physician Magnus Huss, pointed out the negative medical effects of excessive drinking, an opinion that was often seen in the medical literature as well as in the official reports of vital statistics during the second half of the century. The great socio-economic and cultural transformations of the time, which gave uncertain prospects for the future among the rapidly growing proletarian groups, contributed to a climate, which stimulated excessive alcohol consumption, as did a weakening of informal social control. For the contemporary commentators, however, the male surplus mortality was not a major topic. As we have seen, the unruly and immoral proletariat was supposed to be the dangerous 'disease'. Drunkenness in public places was primarily seen as a disturbance of the peace.

The early version of the temperance movement, in many cases initiated and led by priests, was established already before 1850. Some of them tried to form 'associations' in their parishes in which the members promised not to produce, sell

Figure 5. Health and social Change – Sweden c. 1800–1850



CC = cultural capital; SC = social capital; EC = economic capital

or consume alcohol while other associations limited their ambitions to moderation. The success of these early associations is of course impossible to assess in detail, but the main impression is that it was limited. One of their weaknesses was that they were usually governed 'from above' and not spontaneously created. The society was not quite ready for real mass movements before the second half of the century.[22]

Figure 5 summarises some of the major factors causing the problems for the proletariat in early nineteenth century. Changes in agriculture, combined with a population growth caused by declining mortality among children and women, meant that a larger part of the population had problems to become farmers or craftsmen. The landless population grew, part of it migrating to the pre-industrial cities. The result was unemployment, poverty, unstable households, uprooted citizens and an increase of the consumption of alcohol, violence and theft. This, in

22 Sundin, (1981); Willner, (1999); S. Willner, 'The impact of alcohol consumption on excess male mortality in early 19th and 20th century Sweden', *Hygiea Internationalis*, 2 (2001). [http://www.ep.liu.se/ej/hygiea/.].

its turn, affected the economic, cultural and social resources (*capital*) of the same proletariat, which turned out to be most problematic for the health of middle-aged men. As we will see in the following pages, when the economy changed to the better and the society became more stable, the economic and social resources of the new working class was also improved with positive effects on the same groups that had suffered from the change in the first place.[23]

The early phase of industrial take-off – c. 1860–1900

It is of course impossible to give an exact year when industrialisation started in Sweden. Already before 1860, signs of industrial activities were seen in some cities. In Norrköping, for instance, the textile industry was founded before the middle of the century. The production in traditional proto-industrial iron foundries had a peak in the 1850's and the first steam-driven sawmill in Sweden was built in 1849. Looking for the final take-off, however, we have to move to the 1870's. Due, for instance, to wars and a general boom for the construction of ships, factories and machines and other goods in Europe and North America, the demand for wood and iron products gave Sweden favourable terms of trade on the world market. After two years of bad harvests and shortage of food by the end of the 1860's, the labour market for industrial workers grew rapidly and real wages rose steeply. The demand for food for the workers meant that agriculture could also benefit.

The majority of the population was still engaged in agriculture, the boom did not last forever and less prosperous periods sometimes interrupted the growth. In a secular perspective, however, Sweden had definitely entered the road towards the industrial society. Stockholm, the capital, and the industrial areas, for instance the sawmill districts in the north, became places of in-migration while emigration to America was an alternative for those who did not find the future in Sweden attractive. During the first decades, the labour force was mainly recruited from the countryside and, in some of the new communities, the supply of decent housing conditions had problems to keep up with the demand. In the sawmill areas, for instance, the result was overcrowding and unmarried young men often lived in barracks where bad hygienic conditions created an inviting milieu for tuberculosis and other infectious diseases.

During the last decades of the century, pipelines for fresh water and sewerage were built in the cities and contributed to a reduction of diarrhoea and other gastro-intestinal causes of death. It did, however, often take some time before the new

23 J. Sundin and S. Willner, eds., *Hälsa och samhällsförändring. Olika forskarperspektiv*. Institutet för framtidsstudier. Skrifter no 7 (Stockholm, 2003).

settlements of workers could get the same facilities. Overcrowded houses and bad hygienic conditions affected everybody negatively, especially the children. Years of high demand for labour, rising real wages and an in-migration of young unmarried men resulted in an increase of the consumption of alcohol, rising numbers of arrests for drunkenness and higher mortality among adult men. The negative effects of industrialisation on life expectancy was, however, only visible in the mortality figures during a decade or two.[24]

Industrial production demanded that the workers should arrive sober and in time at work every day. This has been said to be a factor creating a more disciplined workforce than in the traditional crafts where time was not regulated in the same way and the employees could sometimes take a "free Monday" off.[25] This new discipline also became part of the workers' own ideal, often expressed by their trade unions and political organisations. Many workers joined the temperance movement and the new "free churches", associations which, in a sense, re-established the church discipline of the agrarian society in a formally less compulsory version.

These popular movements were not only instruments for the shaping of the disciplined worker with bourgeois values of orderliness. They also provided people with new ideologies and interpretations of the world. The labour movements tried to explain the economic order and suggested how the workers should defend their rights, the temperance movement drew up the rules for a sober person and the free churches appealed to those who were religious, but rejected the hierarchical structure of the traditional State Church. Being a member in one or several of these associations was a ticket to social networks, which could help in times of hardship. Trade unions started voluntary sick insurance systems for their members and the free churches supported their members in times of unemployment or illness. The voluntary associations offered the workers a place in the new social order, which may – besides with new legal restrictions on the sales side – have contributed to the diminishing of the consumption of alcohol.

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24 Brändström and Tedebrand, (1993); Edvinsson, (1992); M. C. Nelson, *Bitter Bread: the famine in Norrbotten 1867–1868*. Studia Historica Upsaliensia, 153 (Almqvist & Wiksell, 1988); M. C. Nelson, 'Diphtheria in late nineteenth century Sweden: Policy and practice', *Continuity and Change*, 9: 2 (1994); M. C. Nelson, 'Dirt, Disease and Demography. Public Health and Infant mortality in Uppsala, 1861–1895' in Anders Brändström and L-G Tedebrand, eds., *Urban Demography during Industrialization*. Report No. 104 from The Demographic Data Base, (Umeå, The Demographic Data Base, 1995); Nelson and Rogers, (1992); M. C. Nelson and J. Rogers, 'Cleaning Up the Cities: The First Comprehensive Public Health Law in Sweden', *Scandinavian Journal of History*, 9: 2 (1994); H. Nilsson, *Mot bättre hälsa. Dödlighet och hälsoarbete i Linköping 1860–1894*. Linköping Studies in Arts and Science, 105 (Linköping, 1994); M. Taussi Sjöberg, *Brott och straff i Västernorrland 1861–1890*. Acta Universitatis Umensis, 35 (Umeå, 1981).

25 Edgren, (1987); B. Horgby, *Den disciplinerade arbetaren: brottslighet och social förändring i Norrköping 1850–1910*. Stockholm studies in history, 36 (Stockholm, Almqvist & Wiksell International, 1986).

The emergence of a new society, materially better off, socially more stable and forecasting the welfare state of the next century, offered more opportunities and less risks than early nineteenth century Sweden. Sanitary reforms in the cities contributed to the continued decline of mortality and prolonged life expectancy in all ages, the greatest relative winners being the middle-aged men. Restrictions in the production and sale of alcohol, introduced already during the 1850's, together with a self-inflicted temperance, was reflected in a reduction of the type of causes of death that were directly or indirectly linked to excessive drinking. It is also highly likely that a more stable society reduced the need to use alcohol as a "pain-killer" against social stress. These are some important causes of the improvement of the population's health, especially among the adult men, during the last decades of nineteenth-century Sweden.

Summary

Early-nineteenth-century Sweden was at the beginning of a transition of the traditional, pre-industrial agrarian society without any significant industrialization before the second half of the century. The old system for the creation of social and cultural capital was, for a growing part of the population, no longer at work. Old traditions and norms were challenged and the social mobility from one generation to the next was more often downwards than upwards. This change was particularly visible in the little pre-industrial cities, with a growing proportion of servants and unskilled workers. Young men and women migrated into the city looking for work. The majority of the towns' inhabitants were geographically and socially uprooted. Kinship networks and informal social control were looser than previously. The rapidly rising figures for illegitimate births meant that a married couple with children was no longer the only common unit of procreation. Crime rates increased for violence and thefts. The gap was widening between the elite, which could benefit from change, and the growing proletariat, in many respects the social losers.

The old institutions on the community level were, however, still at works. Educated midwives and mass vaccinations against smallpox contributed to the decline of mortality. Local medical doctors propagated for better childcare and hygienic improvement in the cities. As a consequence, mortality declined among children and adult women after 1810. Central and local authorities acted in order to strengthen the cultural and health capital of the population. No active policy was, or could, on the other hand be introduced in order to minimise the negative effects of structural economic change and the problem of the rapidly growing proletariat. The result is seen in a stagnating, and in certain age groups even increasing, male mortality.

The positive effects of a more stable labour market were, on the other hand, demonstrated during the second half of the nineteenth century. After some decade, economic progress in the industrial society was accompanied by more stable family structures, social networks and informal associations for the working classes. These networks and associations were often established in order to take care of the interests of a specific group, but were later developed into socially wider and more diversified networks, for instance in the temperance movement or the new 'free' churches. Simultaneously, associations emerged, working on an altruistic basis in order to support vulnerable groups, for instance handicapped or single mothers. Many public officials were also engaged in voluntary associations. Public and private roles and the border between private and public action was often overlapping and diffuse. These trends precluded the negotiation between different interests during the twentieth century, which resulted in the modern welfare state. "State" then also includes the local communities, which were in fact many times taking initiatives and administrating the welfare systems. The macroeconomic development created the material basis for the strengthening and distribution of cultural, social and political resources to the majority of the population.

During the last 250 years of Swedish history, profound socio-economic changes, even if they were positive in the long run, produced winners and losers in the short run. Analysing mortality figures, the losers were sometimes found in most age groups, for instance during the 1870's and 1880's, when a deterioration of basic housing and hygienic conditions occurred in the rapidly growing industrial areas. At other occasions, adult men were the victims, due to their specific gender roles, which made them vulnerable to changes of working conditions and less stable societies. Profound changes eroded the economic, social and cultural resources for those who were less resourceful in the beginning and less able to adapt o new conditions. The restoration of welfare and health, starting during the last decades of the nineteenth century, was based on new types of the same resources, both on the individual and the collective level. An important question for today's affluent societies is whether the classical industrial époque and the old forms of the welfare state are disappearing. Is there a need for new solutions, new personal capacities and adaptations and new collective solutions for stability, safety, health and welfare for all?

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Health, Economy, State and Society in Modern Britain: The Long-Run Perspective

Simon Szreter

Introduction

Britain was the first society in the world to industrialise, a process now considered to have taken the entire eighteenth century to achieve but also to have had longer-term, deeper tap roots in the country's history and its agrarian economy.[1] In evaluating the relationship between health and social change in British history the protracted process of industrialisation is clearly an event of the greatest importance. However, it was in the following century, 1815–1914, that social change became even more comprehensive, as the full consequences of the new economy's mechanised and urbanised modes of production exerted their full effects. This chapter will offer a long-term perspective on the relationship between social change and health, considering key features of the period from the sixteenth to the twentieth centuries. In particular, the influence of certain institutional aspects of the relationship between state and society within this long time period will be explored.

This survey departs from the premise, which has been argued at length elsewhere, that the processes of economic growth, especially the rapid and transformative phase which we term 'industrialisation', always entails profoundly divisive and disruptive forms of social and political change.[2] Although economic advance creates the potential for enhanced wealth and health for all, the growth process itself offers no guarantee of this whatsoever. Indeed, economic growth is so disruptive of

1 E. A. Wrigley, 'The quest for the industrial revolution' in Wrigley, *Poverty, progress and population*, (Cambridge, CUP, 2004, 17–43); E. A. Wrigley, *Continuity, chance and change: the character of the Industrial revolution in England* (Cambridge, CUP, 1988).

2 S. Szreter, 'Economic growth, disruption, deprivation, disease and death: on the importance of the politics of public health', *Population & Development Review*, 23 (1997), 693–728.

established social and political relationships that its immediate and direct effects are typically to challenge the health and welfare of the majority, whose lives and livelihoods are frequently literally turned upside down by the changing resource and labour market values which result from rapidly expanding and diversifying markets.[3]

This chapter also argues that the British historical record in the post-industrial period indicates that in these circumstances of economically-induced rapid social change, which are today increasingly commonly experienced around the globe, there are certain fundamental, institutional features of the polity, which are vital for ensuring that the wealth generated by rapid economic growth will be effectively converted into health and welfare gains for the majority of the population, rather than merely providing personal fortunes for the families of the few.

The institutional elements required to adapt to economic growth while maintaining health and security comprise three related historical developments. Firstly, official registration of all individuals and formal, legal acknowledgment of their rights to security and health, critically including respect for their diverse social, religious, and ethnic identities. Secondly, the formation by such diverse citizens of legally recognized civil associations and institutions to represent and campaign for their varied and changing interests. This notably includes elected local government, trade unions, professional and employers' associations, as well as a host of less directly political, civic associations and, of particular importance, an independent free press. Thirdly, the establishment of some form of welfare or social security state: the securing through the state of various forms of effective collective provision to ensure the practical promotion and realisation of citizens' legitimate aspirations for their own security and health.

In Britain, the evolution of these three essential provisions took centuries to accomplish and was disrupted by the process of industrialization.

1538–1834

The conventional orthodoxies of twentieth-century theorising on the relationship between health and economic and social change are encapsulated in the highly influential 'transition' models, notably the demographic transition theory and the derivative epidemiological transition theory.[4] The chief relevant characteristic of

3 S. Szreter, 'The Population Health approach in historical perspective', *American Journal of Public Health*, 93 (2003), 421–31.

4 K. Davis, 'The world demographic transition', *Annals of the American academy of political and social science*, 237 (1945), 1–11; A. R. Omran, 'The epidemiologic transition: a theory of the epidemiology of population change', *Milbank Memorial Fund Quarterly*, 49 (1971), 509–38.

these models is that they cede pride of place to economic growth as the prime mover, envisaging health changes and social adaptation following on, as consequences of economic transformation. Omran's concept of the epidemiological transition specified three types of epidemiological regime typical of the three stages of demographic transition. Famines and pestilence dominated the pre-industrial high mortality stage, followed by 'receding pandemics' as transitional societies industrialised, became wealthier and their medical technology advanced. Finally, the most developed, high life expectancy societies of stage three were afflicted primarily by a residual of 'degenerative and man-made diseases'. According to this framework of thought, the economic growth unleashed by the industrial revolution makes possible the release of humanity from a state of chronic insecurity at the hands of nature, in the form of famines and pestilence, while also releasing the resources for medical science to deal with the secondary problems of contagious diseases.

Britain was the first country in the world to experience the phenomenon of an industrial revolution and accompanying commercial transformation of the economy into the new possibilities of self-sustaining growth in material productivity. Thus, careful attention to the history of the relationship between social and economic change and health in early modern British history is crucial in evaluating the validity of the transition approach and the primacy which it allots to economic growth.

In explaining how it was that the industrial revolution occurred in Britain, clearly there are many important factors involved. However, the most significant recent emphasis among scholars of the British industrial revolution is an increasing attention to the crucial importance of the much higher level of labour and land productivity, which British agriculture had already achieved by the beginning of the eighteenth century.[5] This placed England, alongside Holland, in a unique position in Europe, such that the percentage of her population residing and working in towns was already about 50% higher than the European average in 1700, without the need for any net importation of foodstuffs.[6] This British 'urban advantage' in fact continued to increase further throughout the whole of the eighteenth century. Her agricultural economy still managed to feed a national population that had almost doubled in size by 1800 without any significant rise in real costs of food, while also managing to transfer a substantial labour surplus from the land to the town, providing ever more hands for manufacturing and services.

5 E. A. Wrigley, 'The divergence of England: the growth of the English economy in the seventeenth and eighteenth centuries', *Transactions of the Royal Historical Society* (2000), 117–41.

6 E. A. Wrigley, *People, cities and wealth* (Oxford, Blackwell, 1987), Table 7.6. In 1700 13.4% of England's population was urban and in 1800 24.0%. Meanwhile the average for the rest Europe had remained almost constant, rising from 9.2% to 9.5%.

Thus, it is increasingly being argued by the leading historians that a previously underestimated key to the island's precocious industrial revolution in fact lies in its prior agricultural revolution. The principal comparator here is with the immensely advanced Dutch rural and trading economy of the sixteenth and seventeenth centuries. Many of the most important technical innovations in British agriculture, such as land drainage engineering, new crop types and rotations, were directly borrowed from the Dutch. Yet it was the British agricultural and service economy, which was increasingly outpacing the Dutch as the seventeenth century progressed. Despite a highly distracting Civil War and long before the appearance of the steam engine or factories, by 1700 British agricultural productivity and its support for an out-size urban population was already equalling its most impressive economic rival in Europe, the previously more advanced Dutch economy.

To explain this, Dutch historians, as much as British, have increasingly focused their attention on the potential economic significance of one major institutional difference between the two countries, namely the system of social security created in England by the Elizabethan Poor Laws. Although the Dutch and other European countries had their Poor Laws, they were far from effectively enforced and frequently only really applied in certain towns. By contrast there was nothing in Europe like the ubiquitous system of Poor relief established in England.[7] Funded by a tax on property in every parish, administered by local officials but also rigorously enforced by local magistrates as representatives of the Crown and the law, it is agreed that by the middle of the seventeenth century the Poor relief system was a genuine reality in full operational force throughout the land. It went side by side with an efficient nationwide population registration system, the Church of England's parish registers instituted by Henry VIII in 1538. It placed the English population and its labour market, both in town and countryside, on an entirely different basis, in terms of human security, from that of the rest of Europe. Consequently, the English (but not the Irish, where there was no such Poor Law or general registration system) were the first nation in the world to cease to experience any famine mortality (by the 17th century).[8,9]

Peter Solar has furthermore argued that the comprehensive social security system provided by the Poor Laws also had a number of highly significant economic consequences, of relevance to the development in Britain of precocious levels of both agricultural productivity and urbanisation.[10] In particular it dramatically

7 P. M. Solar, 'Poor relief and English economic development before the industrial revolution', *Economic History Review*, 48 (1995), 1–22.

8 P. Slack, *The English Poor Law 1531–1782* (London, Macmillan, 1990).

9 R. B. Outhwaite, *Dearth, public policy and social disturbance in England, 1550–1800* (London, Macmillan, 1991), ch.2.

10 Solar, (1995), 1–22.

encouraged labour mobility through emancipation from a peasant mentality of over-attachment to land-holding, since individuals had a certainty of being provided for, wherever they moved to work in the economy, no matter what their property-ownership status. Landlords and farmers could reap the economic gains to be had from increased farm sizes, from enclosure and from laying-off workers or changing their labour contracts to more efficient weekly or day labour, without this provoking the same level of fears and protests from those affected as such efficiency changes would elicit on the continent. But equally, such employers had an incentive only to do this if it really made economic sense because, through the Poor Law, they would also have to reckon with their liability for paying for the families of the laid-off workers, at least in the short term until they found new work. From the point of view of the smallholder, given such genuine social security, working for wages – whether in the countryside or in the town – was not necessarily any less secure than access to the land. There was no need to fetishize land ownership among the poor as their cherished symbol of family security, as happened among the peasantry on the continent, notably in France, whose agriculture was notoriously afflicted with the practice of 'morcellement'.

Thus, although in no way a voting democracy, the subjects of the British sovereign in the seventeenth and eighteenth centuries enjoyed 'advanced', state – guaranteed practical entitlements to security and health – functionings and capabilities in Sen's terminology.[11] This entirely reverses the direction of causation posited in transition thinking in the relationship between social change, health and economic growth. In British history, a unique and carefully negotiated and practically enforced act of statecraft, in the form of the Poor Laws, provided the English population with an unprecedented degree of social security. This thereby both reduced the death-rate from food shortages and substantially altered the nature of social relationships between property-owning employers and labour, throughout the economy, facilitating an altogether greater degree of flexibility and efficiency in the allocation of labour across both the agricultural and the urban manufacturing and service sectors of the economy. Thus, state-initiated social change caused both some alterations in population health and especially in the perception and reality of human security. This then caused crucial economic change of a form, which placed the British economy in an excellent position to benefit from the labour-using demands of urban, mechanised factory production in the late eighteenth century. This is a very different causal sequence to that envisaged by transition thinking.

However, in the absence of a democratic franchise to defend these privileges, this gradual move towards the acquisition of individual rights to social security under the Poor Laws was then rudely interrupted, paradoxically by economic growth itself, in the form of the industrial revolution. Part of the reason for this was very

11 A. Sen, *Development as Freedom* (Oxford, Oxford U.P., 1999).

simple and has its exact parallel in virtually all of today's developing countries. Decades of extremely rapid and chaotic urban growth through in-migration from the countryside produced a situation, by the early nineteenth century, where large proportions of urban inhabitants were quite simply 'unknown' to either the national government or the local authorities. The church's registration system had broken-down in most towns, partly overwhelmed with the numbers flooding-in but also because rising proportions of the new urban residents were nonconformists of many varying kinds or Catholics, all of whom fell outside the purview of the Anglican Church registers. Many of the poor kept away from the authorities, even when in need, because they feared being transported back to their rural parish of origin. As today in the shanty towns of India, Africa or Latin America, many were of no recognised address. These individuals had no recognisable claim on the government of their society or their community and no access to its resources. In some cases they would only come to the attention of the authorities when they died and required burial.[12]

The situation began finally to be addressed in the 1820s when the property-holders of the northern and midland cities, many of them nonconformists, intensified campaigns to have their civil and political rights recognised. With the repeal in 1828 of the seventeenth-century Test and Corporation Acts (excluding Protestant dissenters from holding civil office) followed by Catholic emancipation in 1829, religious minorities were given equal rights to civic and political participation. The Great Reform Act of 1832 established the principles of a representative, property-owning democracy on a nationally uniform and statutory basis, although votes were only as yet available to a property-holding minority of about 20% of males. Local government was similarly re-made in 1835 as a representative democracy for property-holders.

In 1836, responding to overtures from the newly-enfranchised nonconformists, Parliament legislated for a civil registration system, establishing a novel bureaucracy of a national network of locally-resident salaried registrars to keep full and accurate records of all births, deaths and marriages in England and Wales, regardless of religion (Scotland and Ireland were granted such systems somewhat later).[13,14] The century-long deterioration in the long-established system of official recognition of individual citizen identity, due to the disruptive effects of the rapid economic and demographic growth of the industrial revolution, had thus been countered through

12 R. Richardson, *Death, dissection and the destitute* (London, Routledge and Kegan Paul, 1988).

13 J. M. Eyler, *Victorian social medicine: the ideas and methods of William Farr* (Baltimore, Johns Hopkins University Press, 1979), ch.3.

14 D. V. Glass, *The development of population statistics* (Farnborough, Greg International, 1973).

the self-assertive political activities of the previously excluded nonconformists successfully appealing to a reformist liberal state. With the availability of this centrally-collated comprehensive registration data, the Victorian public health movement now found its voice and began to be able to publicise authoritatively the diseased state of the crowded industrial cities and to explore and devise effective remedial policies.[15]

Thus, an essential element of the administrative groundwork for the democratic recognition of individual rights to health and security had been put back in place by the end of the 1830s. But simultaneously during the 1830s, the other dimension of state infrastructure, even more crucial for maintaining individual rights, the local, parish-funded Poor Law system, was drastically altered. In a close parallel to views, which have gained credence in liberal democracies during the last two decades, such state-backed systems of social security were now disparaged. It was the contention of the chief apologists of the moral and economic virtues of the free market, that this 'welfare' system was overly-generous, laxly administered and a self-defeating encouragement to a dependency culture. Reverend Thomas Malthus was only one of a number of powerful advocates of this viewpoint. National expenditure on the Poor Laws was slashed in half, cut from approximately 2% (at that time the most generous level of support in Europe) down to 1% of national income.[16]

The 1834 New Poor Law's intention was to remove graft and shirking. Parishes were to be centrally monitored by a Poor Law Board in London to excise local corruption. All those without work were now to enter workhouses, where they would perform tedious and arduous labour in return for their daily bread and soup, in the belief that this would return them to the labour market as soon as possible.[17] The putting asunder of man and wife in the new workhouses (the sexes were rigorously separated on Malthusian grounds) represented a significant constitutional victory for the morality of the 'dismal science' of political economy over that of the Church. This was bitterly resented in some quarters and a vigorous anti-Poor Law guerrilla campaign of civil disobedience erupted, particularly in the industrial north where some parishes refused to build workhouses, since much unemployment was recognised to be cyclical, not voluntary.[18] There would seem to be more than a passing similarity between the centrally devised 'one size fits all'

15 S. Szreter, 'The G.R.O. and the public health movement 1837–1914', *Social History of Medicine*, 4 (1991), 435–63.

16 P. Slack, *The English Poor Law 1531–1782* (Basingstoke, Macmillan, 1990); ME. Rose, *The Relief of Poverty, 1834–1914* (Basingstoke, Macmillan, 1986); P. Mandler, 'The Making of the New Poor Law *Redivivus*', *Past and Present* 117 (1987), 131–57.

17 M. A. Crowther, *The workhouse system 1834–1929: the history of an English social institution*, (London, Batsford, 1981).

18 M. E. Rose, 'The anti poor law agitation', ch. 3 in *Popular Movements*, ed. TJ. Ward (London, Macmillan, 1970), pp.78–94.

Whitehall policy of 1834, the compound of moral and economic rationale, the grudging compliance, particularly where the one size patently did not fit, and the recent history of the structural adjustment programmes handed down by the I.M.F. to the world's less developed countries during the last two decades, insisting that they radically reduce public expenditure on collectively-provided services, on the general argument that they cannot be afforded, distort the operation of the free market and are in any case conducive to corruption in their administration.[19]

The New Poor Law in effect replaced the post-Reformation principle of exclusion of individuals from the polity on doctrinal, religious grounds with a new principle of exclusion on market economic grounds. This transformation in the statutorily-sanctioned principles of social exclusion illustrates the breadth and depth of ideological, cultural and social disruption, which rapid economic growth entails. Even long-standing and powerful elite groups, such as the Church of England and the nation's landowning oligarchy, found their traditional moral values and economic interests threatened and over-turned. In the case of the landowners, the great symbol of their political defeat at the hands of the urban industrial bourgeoisie was the repeal of the Corn Laws in 1846, a protectionist statute which had kept agricultural prices high to the benefit of landholders at the expense of urban employers and their workers.

Multiple dimensions of disruption are an inevitable concomitant of economic change on such a scale as occurred in Britain during its initial phase of widespread industrial mechanisation and urban growth through rural in-migration. At times like these there are undoubtedly great opportunities for those with the wit and initial resources to take them, but at the same time this disruption threatens the security of all concerned, rich, middling and poor. Established social and economic relations, ways of doing business, ways of thinking, even, and recognised moral claims on others (kin, neighbours) and long-established institutional sources of assistance (the Poor Law, or the extended family in today's poor countries) are thrown into question. Population mobility and migration means that kin may no longer be accessible, neighbours may be strangers.

As in Third World cities today, do-it-yourself forms of trust and mutual assistance come into being, born of necessity. In Britain, due to its long-term inheritance of the nuclear family household, extensive family and kinship links did not tend to contribute a major support network. Instead this was often provided by small, even single-chapel congregations led by a local charismatic figure, or certain of the local business leaders themselves, endeavouring to look after their work-forces as well as they could.[20,21] Trade-based Friendly Societies of mutual insurance (and

19 J. E. Stiglitz, *Globalization and its discontents* (New York, Norton, 2002).

20 A. D. Gilbert, *Religion in Industrial Society. Church, chapel and social change 1740–1914* (London, Longman, 1976).

rudimentary trade-unions) were also popular among those who could make regular payments to insure themselves against sickness or disability.[22] These were primarily forms of bonding social capital (see *Note on social capital* on page 227).

Thus, when in 1834 the state withdrew its support for the poor, as has happened in many developing countries today under structural adjustment programmes and also in USA with welfare cuts, access to support in these circumstances became closely tied to admission to certain 'privileged' groups, such as religious congregations, workingmen's associations or the work-forces of a paternalistic company. The plight of Silas Marner in George Eliot's novel of that name (published in 1861) is a celebrated literary example of the dire social consequences for the individual of exclusion from such sects and closely-bonded networks at this time. In the absence of collective local or national, state provision for **all**, reliance on these islands of support necessarily creates around them a sea of potential deprivation, engulfing all those who cannot gain access because they do not qualify for membership. If the sea of deprivation is too deep and many of the deprived are too weak, they may drown in large numbers, particularly of course the most dependent groups – the women and children. This certainly happened in Britain's industrial towns during two long decades of economic fluctuations and ferocious epidemic, endemic and sanitary diseases in the 1830s and 1840s.[23] And her sister island, Ireland, administered by the same laissez-faire government in Whitehall, was of course engulfed during this same period in the tragedy of the Great Famine. It seems likely that much of this story is playing itself out again today in the tearaway economic growth being experienced in parts of China. Like Britain in the 1830s and 1840s China's national economic growth rates signify soaring success. But the economy is being powered by an exploited workforce, notably in China's case the 'black population' drawn from a staggering estimated 200 million 'unplanned' births, unregistered citizens lacking legal and civic rights.[24]

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21 D. Roberts, *Paternalism in early Victorian England* (London, Croom Helm, 1979).

22 P. H. J. H. Gosden, *The Friendly Societies in England, 1815–1875* (Aldershot, Gregg, 1993).

23 S. Szreter and G. Mooney, 'Urbanisation, mortality and the standard of living debate: new estimates of the expectation of life at birth in nineteenth–century British cities', *Economic History Review*, 50 (1998), 84–112.

24 S. Greenhalgh, 'Making up China's "Black Population"', ch. 8 in *Categories and Contexts. Anthropological and Historical Studies in Critical Demography*, eds. S. Szreter, H. Sholkamy and A. Dharmalingam (Oxford, Oxford U. P., 2004), 148–72, Table 8.2, p.163.

1834–1945

The entire period from the early nineteenth century until 1945 in Britain was characterised by a very slow, hesitant and conflict-ridden process, full of reverses, of building-up the second factor emphasised above, as essential for society's capacity to cope with the conflicts and challenges of economic growth. This includes elected, representative local government, a free press, trade unions, professional and employers' associations, and the many other civil organisations, or forms of social capital, which express the diverse identities, interests and pursuits of citizens in a market economy. The chequered history of press freedom tracked the first half of this process. Although Britain in the mid-eighteenth century was endowed with a comparatively literate and relatively highly urbanised population, the British state sought increasingly to restrain the Press through a range of taxes, on paper, advertisements and a heavy 'stamp duty' (per printed sheet!) At times of difficulty for the national government the duty was successively raised – in 1776, 1789, and 1797, hoping to dampen down protest. Not until 1836 was there a significant relaxation in this regime of discouragement, with all taxes finally repealed during the period 1853–1861.[25] During the second half of this period from the 1860s and 1870s onwards, armed with a genuinely free press, there emerged the beginnings of a serious move on the part of the nation's civil institutions, led by certain municipal administrations, by the public health movement and their allies to negotiate the third element, collective provision of health and social security. That process was then accelerated massively by the intense pressures on British state and society during the era of imperial rivalry, total war and world depression from the 1890s through to 1945, resulting finally in Beveridge's welfare state.

It fell to the 'civil servant genius', Edwin Chadwick (1800–90), and his generation to confront the undeniable accumulating evidence that, whatever the capacities of the new market economy to grow businesses, to make some wealthy beyond their dreams, and to cut the prices of many material goods beyond previous possibilities, nevertheless distinct and substantial causes for concern over the nation's health were also emerging in this brave new world. This was the first society in the world to experience, as an experimental process with an unknown denouement, the unlocked power of capital and commerce to transform not only the physical dimensions of life, but also our social and legal relations to each other. It was both, and by turns, an intoxicating and terrifying experience, even for those dynastic landowners and factory-owning capitalists who stood to gain most from the process. The switchback roller-coaster ride of the early, emerging trade-cycle of booms and busts was particularly devastating, not just for entrepreneurs and

25 S. Koss, *The rise and fall of the political press in Britain. Vol. I The nineteenth century* (London, Hamish Hamilton, 1991), chs. 1–2.

investors, but for entire urban communities repeatedly-but unpredictably – finding themselves short of work and sustenance, sometimes for months on end.

Having already been the principal author of reform of the Poor law in 1834, Chadwick found to his consternation that the costs of the Poor Law continued to rise in many places after 1834. Chadwick saw ill-health as the cause of these unfortunates' incapacity to command an adequate price for their labour in the free market. Therefore, he increasingly focused on identification of the causes of such incapacitating disease in society, to eradicate this blemish on the operation of the free market. This, then is the point in his intellectual and policy odyssey at which Edwin Chadwick enters the history of the public health movement, with momentous consequences. Although French and Scottish doctors had arguably led the field before Chadwick's arrival on the scene and although he wasn't even medically trained (and in fact remained highly distrustful of the claims of medicine, reserving his approbation more for the enterprise of engineering), it was Chadwick's 1842 Report on the Sanitary Condition of the Labouring Population of Great Britain, his subsequent Public Health Act of 1848, and the reaction to it, which defined for two generations, the understanding and response of the world's leading industrial power to the manifest domestic problems of health, security and environmental deterioration, under the conditions of social change created by the first great wave of global economic growth, capital accumulation and trade.[26,27] Focusing on those 'zymotic' diseases (mostly recognised today as infectious diseases), which exhibited the greatest variation in their geographical incidence, in this pre-bacteriology era Chadwick believed that the bad smells and 'effluvia' emitted from decomposing organic matter was the principal source of all such diseases, such as cholera, typhus, typhoid, measles, scarlet fever, infant wasting and diarrheoa and tuberculosis. The solution, therefore, was to clean-up the environment. And so was born the 'Sanitary Idea', the international public health movement's first great 'magic bullet' policy. It would more accurately be called the 'Sanitary Dream', since so little of Chadwicks ambitious programme was actively pursued until a whole generation later, after 1870.[28,29]

Chadwick's aim was that the subsequent Public Health Act of 1848 would coerce all of Britain's major urban centres to invest in the extremely expensive engineering,

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26 A. F. La Berge, *Mission and method. The early nineteenth-century French Public Health Movement*, Cambridge, (Cambridge U.P., 1992).

27 C. Hamlin, *Public health and social justice in the age of Chadwick. Britain, 1800–1854* (Cambridge, Cambridge U.Press, 1998).

28 M. W. Flinn, ed and introduction, *Report on the Sanitary Condition of the labouring population of Great Britain by Edwin Chadwick 1842*, (Edinburgh, Edinburgh U.Press, 1965).

29 S. Szreter, 'The Importance of Social Intervention in Britain's Mortality Decline c. 1850–1914: A Reinterpretation of the Role of Public Health', *Social History of Medicine*, 1 (1988), 1–38.

sanitary infrastructure, which his diagnosis indicated was necessary: constant clean water supplies to all domiciles, regular street and courtyard cleansing, and, correspondingly, an arterial underground sewerage system to take all liquid wastes out of the city.[30] Local property-owning ratepayers were to foot the bill for these expensive undertakings. However, Chadwick's Health Act was, politically, fatally flawed. In the land of political liberty, Chadwick, for all his endorsement of classical political economy, had trespassed, in a most heavy-footed fashion, on citizens' private property rights. This was a clash between one kind of security – the rights to unqualified ownership of the income from their property– and another – the possible effect that expensive commitments to their town councils' rates might have in securing the health of the city's families. For most petty property-holders at mid-century in the Victorian age, this was no choice at all; and they knew which form of security mattered more to them and which they trusted the most. They refused to pay for the collective sanitary improvements to their cities; and those that could afford it simply moved their families away from the miasmas out to the suburbs, where the air, light and space was more abundant.

Chadwick had prematurely enacted compulsory legislation, which could only work if there was sufficient trust in the towns and cities that their councillors would spend the much-increased rates wisely and effectively. Such trust – bridging social capital across different networks and religious groups – was distinctly lacking in provincial towns and cities of religious networks that had been firmly thrown back onto their own resources by the New Poor Law of 1834. These crowded cities of immigrants were highly divided societies of strangers: new wealth jostling alongside new poverty. New religious leaders, new nonconformist sects and congregations were springing up everywhere, as lost souls looked for some spiritual comfort and the material support of bonding social capital with a sect of like-minded persons in the harsh environments of the new industrial towns. In the estimate of hard-nosed practical men of business, Chadwick had now shown himself to be a dangerous creature. By 1854 Chadwick had been hounded out of government by a sustained popular campaign in defence of 'local self-government' and against this over-mighty, dictatorial 'Bonaparte'.[31]

Nevertheless, the great 'Whig-liberal' reform era of 1828–1835 had been marked by an important sequence of constitutional measures. In the much longer term, these did undoubtedly prove to be vital foundations for a positive efflorescence of bridging and linking social capital, and an associated thorough revivification and sustained dramatic expansion of local government and civic associational activity in Britain from the late 1860s onwards. This was to set in train a long series of

30 Flinn, (1965), pp.150, 394–5.

31 J. Prest, *Liberty and locality. Parliament, permissive legislation, and ratepayers' democracies in the mid-nineteenth century* (Oxford, Clarendon Press, 1990).

developments, which were to establish in the twentieth century, on an entirely new, collectivist basis, important new forms of human security in British society, with profound consequences for the health of the majority.

By the 1860s an entirely new generation of men, who had only been infants and children in the 1830s, were coming into their maturity as the nation's political and economic leaders, on the back of two decades of unparalleled national prosperity, since the harrowing late 1840s. This was nowhere more true than in Birmingham, the nation's second city and commercial centre of the Black Country, the world's leading region for the manufacture of all the basic iron and metal-ware of the new industrial economy, from coins to guns, brass ornaments to weighing scales, chains and springs to nuts, bolts, nails and screws. Its principal competitor for second-city status was the Scottish metropolis of Glasgow. During the last four decades of the century these two rival cities egged each other on and led the way in a nation-wide provincial revolution in government, finance and social capital, which amounted to a wholly new, collectivist and municipal (not yet national) model of delivering social security and health to their crowded working populations.[32] By the opening decade of the twentieth-century the annual reports of the Medical Officers of Health for all the major cities such as Liverpool or Manchester, as well as Birmingham or Glasgow, reveal these local authorities to have been administering a massive range of municipal schemes of regulation of the urban environment and food supply, preventive and public health measures, welfare and social services, even including aspects of the local education system and public housing schemes. These were half way to welfare-states at the municipal scale; and even much smaller cities and towns like Halifax, Wakefield and Doncaster were by now following the lead.[33,34] In 1905, after four decades of strong municipal expansion, the aggregate of all local government spending actually briefly exceeded the absolute total of central government spending, an index of this historic peak in local democratic activism and public health initiative.[35]

In Birmingham's case the importance of the prior, constitutional freeing in the 1830s of nonconformists to play a full civic role in society was most evident. For, here it was interlocking networks of local elite families of Congregationalists, Unitarians and Quakers, and their respective ministers, who first began to evolve a

32 W. H. Fraser and M. Maver, eds. *Glasgow Volume II: 1830–1912* (Manchester, Manchester University Press, 1996), chs. 10–12.

33 K. Goschl, 'A comparative history of public health in Wakefield, Halifax and Doncaster, 1865–1914' (University of Cambridge, unpublished Ph.D. dissertation, 1999).

34 F. Bell and R. Millward, 'Public health expenditures and mortality in England and Wales, 1870–1914', *Continuity and Change*, 13 (1998), 221–49.

35 S. Szreter, 'Health, class, place and politics: social capital, opting in and opting out of collective provision in nineteenth and twentieth-century Britain', *Contemporary British History*, 16 (2002), 27–57, Table 1.

theological doctrine of municipal transformation.[36] The civic gospel was preached from the pulpits of Birmingham by local divines such as George Dawson and Robert Dale and it caught the imagination of the leading local industrialists, drawn from families such as the Kenricks and the Martindales. Most especially, it inspired the young Joseph Chamberlain, scion of the Guest dynasty, owners of the largest and most successful screw manufacturing company in the west midlands – and therefore in the world.

Born into industrial wealth and having been trained in the financial markets in the City of London in his youth, Chamberlain's business contacts and superlative public speaking abilities placed him at the apex of this Birmingham-centred movement, led by a new post-industrial, home-grown neo-patrician elite.[37] Their grandfathers and fathers had been among the more modest property-owners, consumed with trade matters and anxious to avoid any demands from the municipal council rates on their hard-earned profits. Whereas, this next generation of business leaders, with the wealth of their families and companies much more securely established, had more likely been classically educated in the nation's great public schools before entering the family business. They were used to thinking on an altogether more ambitious and morally uplifted scale. The civic gospel preached that municipal leadership was a divine calling to save the souls of the plebeian poor through the power of rational administration, education and the efficient use of collective services, while the examples of the Classics and the Italian city-states provided architectural, constitutional and aesthetic inspiration for the design of cities of grace and civilisation.[38] It was a heady mixture of religious calling and a moral challenge to a place in history to match the 'Greats' of ancient and Renaissance civilisation. Early nineteenth-century aspirations of provincial men of affairs, merely to make profits from trade and to look after their own families in suburban mansions, now paled into insignificance as small beer. However, for all their grand ambitions, most of the leading figures in the civic gospel movement, remained rooted in their local industrial communities and in touch with the hopes and fears of the urban working men and their families who provided the workforces for their factories, along also with those of the many smaller industrialists and employers of their cities. They were still close enough to the daily management of their manufacturing businesses, for all their global market reach, to know their

36 E. P. Hennock, *Fit and proper persons*, (Montreal, McGill-Queen's University Press, 1973).

37 P. T. Marsh, *Joseph Chamberlain. Entrepreneur in politics* (New Haven, Yale University Press, 1994).

38 Hennock, (1973); T. Hunt, *Building Jerusalem. The rise and fall of the Victorian City*. (London, Weidenfeld and Nicholson, 2004).

workforces and the inner city districts and also the many regional subcontractors with which their large enterprises interacted.

In social capital terms this was as close to ideal as is likely to be found in the historical record. Well-bonded elite social groups of nonconformist families were bridging across their congregational divides because they had conceived of the ambition and moral motivation to use their joint power and influence to campaign politically for their cities collectively to reform and improve their urban environments and the conditions of life of all citizens, including the poor, women and children. The political success of Chamberlain's Liberal group depended on his capacity to get the message across at the hustings but also on their innovatory ward-level organisation to get the votes out. This unprecedented level of popular participation in the organisation in depth of a local government election campaign in a provincial British city, in turn reflected the massive and extensive investments in all forms of social capital, but particularly bridging and linking, which Chamberlain's Liberal team had mobilised.[39]

Chamberlain demonstrated that municipal spending and expansion of collective services for security and health could pay political dividends in Britain's urban electorate. In this, he crucially benefited from the fruits of the early trade-union movement, another vital form of civic institution alongside local government, which spearheaded the campaign for the workingman's vote. A series of franchise reforms from 1867 to 1884 quadrupled the male electorate, brought in secret ballots and swamped the anti-rate-paying petty bourgeoisie, the so-called 'shopocracy', with the electoral power of a new, non-property-owning (and therefore non-rate-paying), upper, 'respectable' working-class, who were also gradually building the strength of trade-unions at this time.[40] Women also gained the municipal vote – in some restricted circumstances – for the first time at the end of the 1860s. Recent research has uncovered the extent of their activism, not only in the well-known areas of first-wave feminist concern, such as in campaigning for the vote and for fairer property and marriage laws, but also in local government, education and the Poor Law, for instance. [41] Added to this more favourably-constituted electorate, giving a genuine voice to large numbers of the property-less, Chamberlain himself pioneered several crucial innovations in public finance. He created the new practices of substantial municipal borrowing in order to take over local monopolies,

39 Hennock, (1973).

40 J. Davis and D. Tanner 'The borough franchise after 1867', *Historical Research,* 69 (1996), 306–27; H. Pelling, *A history of British trade unionism* (5th edition, Basingstoke, Macmillan, 1992).

41 P. Hollis, *Ladies Elect. Women in English local government 1865–1914* (Oxford, OUP, 1987); M. D. McFeely, *Lady Inspectors. The campaign for a better workplace 1893–1921* (Oxford, Blackwell, 1988); J. Lewis, *Women and social action in Victorian and Edwardian England* (Stanford, Stanford U. P., 1991); B. Caine, *Victorian Feminists* (Oxford, OUP, 1992).

such as power and transport, and to use the profits to fund an expanding range of much-needed urban social and health services.[42,43] Whole new public service professions – another crucial civic institution – such as Medical Officers of Health and Sanitary Inspectors came into being to run these services.[44] Thus, 1865–1905 witnessed a silent revolution in collective provision at the municipal level and a massive increase in civic activism and institutions: construction of the bridging and linking social capital of the nation by ever more empowered individual citizens.

The bottom line, in health terms, was that following half a century during which both the national and the urban life-expectancy at birth values had failed to fall below the levels attained by the end of the second decade of the nineteenth century, at last from the 1870s onwards both national and urban life expectancy resumed the upward trends of the century before the 1820s and began to rise to entirely new levels, never seen before in Britain's recorded demographic history.[45] This, then represented the point at which the potential of economic growth to provide the means to enhance human health had finally been mastered, through all the complex of social, political and institutional changes surveyed here.

Conclusions

Thus, the historical material presented here has focused primarily on the interplay between the three institutional factors identified at the outset as so important for ensuring that the dramatic social changes associated with economic growth can result in positive, rather than negative outcomes in population health. It has been shown that in Britain's case propitious foundations, in the form of vital registration and an effective social security system, to underwrite individuals' entitlements as genuinely functioning capabilities dated from the 16th century in statute and from about the mid-17th century as a nationally uniform practical reality. Although these were supplemented by a vigorous civil society during both the 17th and 18th centuries, the hectic, culminating phase of the industrial revolution, c.1780–1840, radically disrupted all of this, along with its new political ideology of economic laissez-faire. Thereafter, from 1835 until 1905 elected local government authorities,

42 Streter (1997), 710–11.

43 R. Millward and S. Sheard, 'The urban fiscal problem, 1870–1914: government expenditure and finance in England and Wales', *Economic History Review*, 48 (1995), 501–35.

44 A. S. Wohl, *Endangered Lives. Public health in Victorian Britain* (1983); A. Hardy, 'Public health and the expert: the London Medical Officers of Health, 1856–1900', in *Government and Expertise. Specialists, administrators, and professionals, 1860–1919*, ed. R. MacLeod (Cambridge, 1988), 128–42.

45 Szreter and Mooney (1998), Table 6 and Figure 1.

particularly those of the largest provincial municipalities, rather than the central state, played a particularly significant political role in gradually putting back together a system of effective protection against the environmental and epidemiological consequences of rapid economic and urban growth. From the 1860s the widening electorate and fully liberated free press, the increasingly self-organised associations of the working class, and of women, and the newly-formed public service professions added important new voices.

It was elected municipal government which first led the way in responding to the changing interests of this more inclusive 'civic society', no longer dominated by the narrow, small-scale, private property-preserving interests of the rate-paying 'shopocracy', those who had gained the vote in the 1830s. This ultimately delivered a wide range of collective environmental, preventive health and social services to promote welfare, security and health. Although the English penchant for local self-government defeated an early effort at (unfunded) centralised direction in 1848, the state did eventually both fund and organise a significant addition to the range of services provided by municipalities during the decade of intense imperial rivalry which preceded the outbreak of the First World War. The 'New Liberal' administration, anxious to maintain its appeal to the increasing pool of working-class voters in the face of rising competition from the newly-founded Labour Party, enacted a range of important health and welfare measures, nationally funded through the innovation of a more progressive taxation system. These included old age pensions, national insurance against illness and unemployment for working men, a school medical inspection service and free school meals.[46] The longer term product of the momentum built up in this period, and further extended by the subsequent generation in their social and political responses to the sequence of national crises presented by the Great War, the severe interwar slumps of 1919–20, 1925–6 and 1929–33, and the global war against fascism, was the British nation's increasing ideological commitment and political conversion to national, collectivist provision for health and social security, ultimately resulting in the Beveridge Plan of the 1940s.[47]

Historical developments – full citizenship rights, civil associations, a free press, and collective provision for human security and health – culminated in the mid-20th century with most of the advanced western liberal democracies assuming the form of pluralist societies with welfare states.[48] This balanced pattern served the

46 J. R. Hay, *The origins of the Liberal welfare reforms 1906–1914* (Basingstoke, Macmillan, 1975); P. Thane, *The foundations of the welfare state* (2nd edition, Harlow, Longman, 1996).

47 P. Addison, *The road to 1945. British politics and the Second World War* (London, Quarter, 1977).

48 G. Esping- Andersen, *The three worlds of welfare capitalism* (Cambridge, Polity Press, 1990).

western democracies reasonably well for over a quarter century following the end of World War II, and also provided a helpful model for various client states in the Third World to emulate. Economic growth rates in both sets of states were consistently strongly positive, while rising average life expectancies confirmed that the fruits of such economic growth were being equitably distributed without undue disruption to the lives of the majority. But then, tragically for many in the Third World and painfully for the socially excluded of the First World, the important historical lessons regarding the preservation of human security and health under conditions of rapid economic change have been progressively lost to the policymakers and leading opinion formers of the world's elite societies and global institutions during the 1980s and especially in the era of triumphalist 'free market fundamentalism' of the 1990s.

After a generation of change since 1945, there was certainly much that needed reform and reinvigoration in the relationship between state, civic society, and citizenship in western liberal democracies by the 1970s. The prescriptions of the New Right offered partial diagnosis and a rather extreme form of medicine. The ensuing two decades have resulted in significant reforms along the lines they advocated; however, considerable damage to human security and health also has been wreaked in these societies by the evangelical application of New Right ideology, resulting in sharply rising inequality and deepening poverty for the socially excluded in both developed and less developed countries.

In terms of the institutional and civic underpinnings to ensure human security and health in a turbulent world of economic growth, it is arguable that the last thing the citizens of the poorest countries needed, emerging from centuries of dependence and decades of tutelage, was a generalized attack on the legitimacy of their youthful state structures and nascent public goods and services. The neoliberal policies were originally devised in Chicago, Wall Street, and London by First World economists unhappy at the role played by a highly developed central state in their own economies. But these policies were soon applied as the 'Washington consensus' in many other contexts.

In developed western democracies, the ideologists of the New Right have had a fairer fight on their hands, facing a strong state and a well-developed range of civic associations able to argue for the continuing provision of collective services to ensure human security and health. Public services, so essential for the health and security of the poor, have been pruned but not eradicated. By contrast, in far too many ex-colonial countries, the IMF found that it could impose its strictures at will, through conditionality clauses to its loans, on relatively unconfident and young state bureaucracies and on civil societies lacking sufficient development in local government, trade unions, an independent press, or other civic associations capable of representing the poor and resisting the attack on their interests. In 1980, what all of these developing countries needed, and what was appropriate for the

provisional state of development they had achieved by that point, was to expand and strengthen their nascent welfare states so as to boost significantly their nation's human and social capital. Instead, they received orders from Washington, in the form of the structural adjustment programs, to abandon the minimal welfare states they had begun to construct, and to open themselves up to western capitalism and trade.[49]

The possibility of financing and maintaining a genuinely comprehensive system for enumeration and vital event registration of all individual citizens in today's poorer countries now looks further away than ever. Yet, history indicates this to be a foundational step, if the social change associated with economic growth is to deliver sustained improvements in population health, social security and welfare. The principal glimmer of hope on the horizon – a bright glimmer – is comprised by the innovative INDEPTH network, founded in 1998.[50] This currently comprises a set of population observatories providing high quality continuous demographic surveillance systems in 34 localities in very poor countries in sub-Saharan Africa and Asia.[51] It can only be hoped that international organisations with the financial and political clout of the World Bank and the IMF take note of these highly impressive sentinel initiatives and the valuable epidemiological and socio-demographic findings, which they are generating, and seek to encourage and support the governments of less developed countries to build on these initiatives, as first steps in a long road.

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49 G. Kolko, 'Ravaging the poor: the IMF indicted by its own data', ch. 5 in *The Political economy of social inequalities*, ed. V.Navarro (Amityville, Baywood, 2002), 173–9.

50 O. Sankoh, K. Kahn, N. Kiwanuka, E. Mwageni, P. Ngom, P. Nyarko, D. Simba (eds). *Population and, Health in Developing Countries. Volume 1: Population, Health, and Survival at INDEPTH sites*, (IDRC, Ottawa, Canada, 2002).

51 INDEPTH An International Network of field sites with continuous Demographic Evaluation of Populations and Their Health in developing countries. [http://www.indepth-network.net/dss_site_profiles/dss_sites.htm].

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Note on social capital

Bonding social capital refers to norms and networks of trusting relationships formed among persons perceiving themselves to share a similar social identity. Bridging social capital, by contrast, refers to trusting norms and networks, where the participants acknowledge that they are different from each other, with respect to the conventions of social identity groupings. Participants in the network are typically drawn from a relatively wide range of ethnic, social class, age and gender backgrounds. Linking social capital is now recognised as a third category. It refers to the relationships of respect and trusting networks between parties who know themselves not only to be unalike, as in the case of bridging social capital, but furthermore to be unequal in their power and their access to resources. Linking social capital enables all the range of 'vertical', institutionalised relationships between citizens and those occupying positions of power and authority, on behalf of central or local government, small or big business, local or international organisations, to be analysed within the social capital framework, without conflating these kind of relationships with the more 'horizontal' relations of bonding and bridging.

On bonding and bridging, see Putnam R. D. *Bowling Alone. The collapse and revival of American Community* (New York: Simon and Schuster, 2000), 22–30. On linking see Woolcock M., 'Managing risk, shocks, and opportunity in developing economies: the role of social capital' in Ranis G., ed. *Dimensions of development* (New Haven Conn: Yale Center for International and Area Studies, 2000), 197–212; Szreter S., 'The state of social capital: bringing back in power, politics and history', *Theory and Society* 31 (2002), 573–621; Szreter S. and Woolcock M., 'Health by association. Social capital, social theory and the political economy of public health' *International Journal of Epidemiology*, 33 (2004), 650–67.

Improving Public Health in France. The Local Political Mobilization in the Nineteenth Century

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With hindsight one of the achievements of the rich countries has been to reconcile tremendous social changes with remarkable improvements in health. For instance, the life-expectancy for French women has increased from 35 years to 83 years since the eve of the French Revolution (Appendix table 1). Despite industrialisation, urbanisation and rural de-population, which have changed the conditions of living, the environment and the economic origin of the family means, the improvement has been incredible. But this does not imply that there has been a smooth evolutionary improvement for the whole population. On the contrary, during several decades, the first industrialization led to increases in mortality (and probably increasing morbidity) among the workers and the urban poor population, especially the children.

In fact, to appreciate the links between social change and health, scholars have to pay attention to different analysis scales.[1] The chronological scale first, because the social change effects on health improvement have not been immediate, regular or constant – an increase of the mortality can even be the first consequence of a social change. The geographical scale is also important because the economic and social change occurred first at a local level, and surveys at a national or regional scale can immerse these changes. Taking into account the social scale is fundamental because specific categories, new industrial workers or women or children have been more exposed than the others, and were, at least during a first phase, the main losers of the evolution. The three dimensions, the three scales, have to be connected to each other.

I propose here, after a global perspective on life-expectancies, to focus first, at a local level, on an example of the consequences for mortality and health of the 19th century industrialization. The ways in which the industrial and urban penalties have

1 Jacques Revel, *Jeux d'échelle, la micro-analyse à l'expérience* (Gallimard-Le Seuil, Paris, 1996).

been solved lead me to pay more attention to the local policies and municipal initiatives. In the third part of this paper I will emphasize on a French specificity: the importance of municipal, state and public institutions in the field of Public Health and assistance. In other words, who were the main victims of the mortality-increase in the industrial cities? What was the influence of employer's policies-specific to industrial towns-in reducing level of mortality? More generally, how have the policies to improve public health developed? What scale? What political leaders? What ideas?

The Global Evolution

At the national level, life expectancy curves indicate that the crisis have been first linked to the wars periods, striking mostly men: the end of the first Empire (1812–1814), the First and Second World Wars (figure 1). When life expectancy for women decreased, it is the result of a surge of epidemics, smallpox, measles, dysentery in 1871, and Spanish influenza in 1918–1919. At the national level, the consequences of the industrialization process or of the urbanization are not very obvious, except during the decades 1840–1850 when the trend stagnated. What is interesting is the differential increase of the expectancy for each sex since the late 19th Century with a growing gap until the 1950s. It is also clear that the curves continue their progression after the wars.[2]

In spite of a tremendous social change over the 19th Century, life-expectancy began to increase, especially in the last third when important policies to fight against infant mortality were implemented and when the main industrial centres completed their rapid growth period. But men were more vulnerable than women, with working conditions, professional illnesses, consumption of alcohol and tobacco supposedly explaining the differences. Since the Second World War the cross-sectional values of life tables are more regular than before, emphasising that the sanitary situation and the epidemics are under control. To examine more precisely the links between social change and health the local scale is necessary.

2 Many thanks to France Meslé and Jacques Vallin for having open us their annual reconstitution of the French Life expectancy.

Figure 1. Life expectancy. France 1806–2001.

Source: see note 2.

The Health Effects of Industrialization and Urbanization

The consequences of the new economic conditions, the large industries (textile first and then, mines and metal plants) on the health of the workers in both England and France, have been the centre of the political debate for several decades. The danger for children's health has been emphasised on the both sides of the Channel, from the beginning of the 19th century. The new economy was accused of using children as slaves and to cause weakness, malformations, severe illnesses, and very often to anticipate their death.[3] On the other side, the industrialists advocated that industry was the cause for a new prosperity and better health.[4] On the both sides of the Channel the first sociological surveys were organized.[5] In France, several surveys to analyse what were the new conditions of living of industrial workers and urban

3 Christopher Hamlin, *Public Health and Social Justice in the Age of Chadwick, Britain, 1800–1854* (Cambridge University Press, 1998).

4 Andrew Ure, *The Philosophy of manufactures; or an Exposition of the scientific, moral and commercial economy of the factory system of Great-Britain* (London, Charles Knight, 1835).

5 Edward Palmer Thompson, *The Making of the English Working Class* (London, Victor Gollancz, 1963).

population and the origins of the dysfunction's were done in the 1830's.[6] In the most famous, Villermé tried to show that the situation was bad, and worse in the industrial cities. At the end of his own work he reconsidered the results given by M. Ure who had found the cotton industries to protect children from cholera and the development of scrofula. The heat in the industrial buildings, the quality of food and of clothes allowed by high wages were benefit for them. Ure even insinuated that the rural population has a worse health that the manufacture's one. Villermé emphasised that these assertions were probably a response to Michael Saddler's contradictory thesis. In contrast, Villermé tries to maintain a critical position in front of all the studies. It is the reason why he chose statistics published by the Houses of Communes, giving some indications on mortality and average life for counties and districts. The data are all the more relevant as they have not been organized to answer to that specific question. Splitting the industrial counties and districts from the agricultural ones, he finds strong evidences that the mortality was higher in the former compared to the latter. He calculated that of 10 000 children born, 4 457 reach 40 in the agricultural area, 4 124 in the districts partly agricultural, partly industrial, and 3 541 in the manufacture districts. He also shows that the mortality between 0 and 10 years old and the mortality from 10 to 40 were ranked similarly.[7] It was not really a surprise for him, because some data collected for Mulhouse, the large textile centre in Alsace region, gave more or less the same results. Life expectancy had declined from 25 years in 1812 to 21 in 1827, during the industrial growth (but he also emphasised that this was still a better performance than Leeds). Villermé emphasised that even if mortality is not the direct consequence of the industrial work but the result of the living conditions near the factories, of the housing conditions, industrialisation was still responsible for the deterioration.

As for the increase of the urban population, Villermé was the first to conduct an extensive study of the mortality differences among the Parisians during the 1820's. His papers published by the new *Annales d'hygiène* contributed to the emergence of a new paradigm. Traditionally, in these decades, the neo-Hippocratic thesis dominated medicine and the explanations for mortality differences were seen in the level of hygrometry, direction of the wind, orientation of the streets and of the flat's windows, or the distance to the Seine river, or the altitude etc. With the censuses data and vital registration for each "arrondissement", Villermé was able to show that mortality was not linked to these environmental factors but mainly to the degree of the individual wealth of the arrondissements. It was a total break from the

6 Kate Lynch, *Family, Class, and Ideology in Early Industrial France* (The University of Wisconsin Press, 1988).

7 Louis-René Villermé, *Tableau de l'état moral et physique des ouvriers employés dan sles manufactures de coton, laine et de soie* (1840, reprint EDI, Paris, 1989), 513–518.

Table 1. Mortality rates among young children, 1847–1857 (per thousand).

Country/City	Infant mortality		Mortality in ages 1–4		Mortality in ages 5–9	
	Males	Females	Males	Females	Males	Females
France	180	157	130	130	47	50
Lyon	–	194	–	174	–	63
Le Creusot	207	163	197	217	137	147
Mâcon	139	121	145	176	59	58
Seraing	214	188	261	254	101	85

Sources: Lyon; Samuel Preston and Etienne Van de Walle, 'Urban French Mortality in the Nineteenth Century', *Population Studies*, 32,2 (1978), 275–297. Le Creusot; Bourdelais and Demonet, (2000). Mâcon; Research to be published by Patrice Bourdelais and Michel Demonet, on the French urban mortality (1861). Seraing: Suzy Pasleau, *La formation d'un prolétariat industriel, Seraing 1846–1914*, (Thèse de l'Université de Liège, 1990); Michel Oris, 'Mortalité, industrialisation et urbanisation au XIXe siècle', Pp 252–281, in Dix essais sur la démographie urbaine de la Wallonie au XIXe siècle, édité par Desama (Claude et Michel Oris, 1995).

traditional view, it oriented the mortality analysis towards a social perspective in the analysis.[8]

In the Parisian case, social changes led directly to the degradation of health for the new population. In the context of the then dominant paternalist policy paradigm, these numerous surveys and the debates around the negative consequences of industrialisation and urbanization had a major influence especially with respect to employers' obligation towards the workforce. We could follow the Mulhouse case studied by Florence Ott[9], but it is not the only example. Another one is offered by the metal industrial city of Le Creusot in which the mortality has been systematically reconstructed.[10] It is clear here that the increase of the city lead to a big decline of the life-expectancy.

We propose first to place the mortality of Le Creusot in its geographical context, in relation to other towns in the same department (Saône-et-Loire), to the neighbouring city of Lyon, to France as a whole and to another industrial town, Seraing. All of our previous studies have shown the importance of mortality up to

8 Ann La Berge, *Mission and Method. The Early Nineteenth Century French Public Health Movement* (Cambridge University Press, 1992); Patrice Bourdelais, *Les épidémies terrassées. Une histoire de pays riches* (Editions de La Martinière, Paris, 2003).

9 Florence Ott, *La Société Industrielle de Mulhouse, 1826–1876, ses membres, son action, ses réseaux* (Presses universitaires de Strasbourg, 1999).

10 Patrice Bourdelais and Michel Demonet, 'Demographic Changes in European Industrializing Towns. Examples and Elements for Comparison', *The History of the Family. An International Quarterly*, 5, 4 (2000), 363–372.

Table 2. Mortality rates in Le Creusot, 1833–1839 (per thousand).

Age	Males	Females
Infants	130	120
Ages 1–4	81	97
Ages 5–9	89	95

10 years of age; our comparison will thus concentrate first on infant mortality and then on the age groups 1–4 and 5–9 years.[11]

In the middle of the nineteenth century, the mortality rate for Lyon – he nearest city to Le Creusot – was higher for all ages in comparison to the mean mortality of a largely rural France. The gap between Lyon and Le Creusot was, however, even more important between the first and fifth birthdays and especially between the fifth and tenth. At the latter age, mortality in Le Creusot was three times higher than mortality in France, and over twice as high as mortality in Lyon (which was already 26 % above the average rate for France). For the industrial city, it is not rare that the mortality quotient between 1 and 5 years is superior to that of infant mortality. The coal-mining town of Seraing near Liège in Belgium, cradle of the Cockerill factory and thus very similar to Le Creusot in socio-economic terms, offers another point of comparison. While the mortality rate of Le Creusot from 1–4 years is high when measured by the general mortality rate for France, when compared to Seraing, its stands out by its high mortality rate among children over 5 years of age. In contrast, infant mortality and mortality from the 1st to the 4th birthday are lower in Le Creusot than in Seraing.

A Belgian study has shown that by the end of the century mortality increased in proportion to the size of the town considered.[12] English studies have come to the same conclusion.[13] As for Le Creusot and its surroundings, the overall relation between the size of the town and levels of mortality is perceptible, but there is an additional factor, which appears to characterize the mortality here. The question

11 Patrice Bourdelais, 'Infant mortality in France, 1750–1950, Evaluation and Perspectives', in *The decline of infant mortality in Europe –1800–1950– Four national case studies*, ed. Carlo Corsini and Pier Paolo Viazzo (Florence, UNICEF, 1993), pp. 51–69.

12 Thierry Eggerickx and Marc Dubuisson,'La surmortalité urbaine : le cas de la Wallonie et de Bruxelles à la fin du XIXe siècle (1889–1892)', *Annales de Démographie Historique*, (1990), 23–41.

13 Gerry Kearns,. 'Le handicap urbain et le déclin de la mortalité en Angleterre et au Pays de Galles 1851–1900', *Annales de Démographie Historique*, (1993), 75–105 ; Naomi Williams, and Chris Galley, 'Urban-rural differentials in infant mortality in Victorian England', Conférence on '*The European decline of infant mortality*', Istituto degli Innocenti, Florence, 5–7 décembre 1994 (1994).

Table 3. Life expectancy at birth, at 5 and at 10 (in years).

Year	E0 Males	E0 Females	E5 Males	E5 Females	E10 Males	E10 Females
1836	37,2	42,1	41,3	47,9	40,0	47,6
1846	32,8	30,9	43,7	41,8	44,3	42,3
1851	32,1	32,1	45,6	42,8	48,3	45,8
1856	29,7	32,5	42,2	43,3	42,9	44,6
1861	31,6	34,6	47,2	46,7	49,3	48,6
1866	36,2	36,8	48,2	47,0	47,6	46,9
1872	35,7	37,5	44,2	47,4	43,4	47,2
1876	37,2	42,5	48,7	53,8	46,6	52,1

therefore arises as to whether it is as a result of industrialization or rather the rapid population growth, which followed that industrialization and made it possible?

The chronology is important to understand what happened. In the case of Le Creusot, the years 1846–1866 constituted the heart of the phase of paroxysmal growth, with annual rates reaching 10 %. Can, therefore, the increase in mortality be traced back to the town's demographic surge and industrialization?

In 1836, when Schneider bought the Creusot factories, the site – with some 2 300 inhabitants – was neither a town nor an industrial centre faced with an influx of large workforce, but a village, with some little forges and one cristallerie, which had more or less vegetated since the French revolution. Life tables calculated for the years 1833–1839, give a proxy for the mortality in Le Creusot before its massive growth. Although the limited numbers surveyed and the probable modifications with the population structure between 1833 and 1839 prevent one from commenting on small disparities, the results are spectacular:

Mortality was still fairly low, even if the level for 5–9 years old was already high compared with that of the two previous age groups. Life expectancy at birth at the time was 36.9 years for men and 42 years for women, owing to a net excess-mortality among men of 15–35 years during the median period of professional activity. But twenty years later, life expectancy was only 31.1 years for men and 31.6 for women. The years of massive industrialization and rapid population growth thus correspond to a loss of over 6 years of life expectancy for men and over 10 years for women.

Women were the main losers of these changes. Is one to suppose that in an industrial town deprived of wage-earning activities for women, girls were less brought up with care than boys? Yet in Seraing, which had the same employment situation, excess-mortality among girls was not perceptible; it was, however, in 1861

in Elbeuf, where textile works provided plenty of possibilities for the feminine workforce. No conclusion can therefore be drawn on this point as long as results appear to contradict the hypotheses when various towns or industrial centres are compared. Nevertheless, the effects of industrialization and the influx of workforce on the mortality rate of a given site appear to be undeniable.

But for young adults, their mortality increased, in particular among young women. We have shown that the age of marriage decreased markedly between 1836 and 1856, thus rendering the proportions of those at risk through childbirth greater at the end of the period in question. Given such a hypothesis, it would seem that the sanitary conditions in which women gave birth had also worsened.

An Excess-Mortality Among Immigrants?

Lately, one of the most debated questions has been whether the increase in mortality was due to recent immigrants who had a hard time adapting to new surroundings or rather to those individuals who had already lived in the town for a period of time and been worn out by hard work and a awful environment? By reconstituting the population of Le Creusot and linking the longitudinal data, it is possible to measure the mortality of both sub-populations. Recent immigrant women appear to have died more frequently than those already installed in the town for the age groups 5–9 and 30–34 years.

If one now compares the evolution of mortality in Le Creusot with that of the whole of the French population between 1836 and 1876, one detects certain particularities for Le Creusot, but also very many resemblances, in particular in the evolution from one census to the next one. Whatever the date examined, excess-mortality in Le Creusot for 1 to 4 and especially for 5 to 9 years old is indisputable. When one compares the evolution of mortality quotients over the twenty years for Le Creusot and for France as a whole, one is struck by a very strong resemblance, although the divergences are larger in Le Creusot particularly amongst women in 1876. In both cases, the evolution is not regular, but follows a series of advances and retreats. This is rather surprising, but may point to the importance of conjuncture of the epidemiological context.

There are also notable differences between men and women. Whether for France in general or for the town of Le Creusot, life expectancy varied much more among men than among women. In both cases, the years 1861–1876 were favourable to women of almost all ages, except perhaps for elderly women; on the other hand, life expectancy dropped fairly quickly for men after their 10th birthday. It should finally be noted that variations among men were particularly prevalent between the fifth and twentieth birthdays; afterwards, they tended to diminish for

France, while remaining rather important in Le Creusot. Overall, if one considers globally the period 1846–1876, women of all ages and in both cases – albeit much more massively in Le Creusot – gained in number of years left for them to live. Their life expectancy rose back up to 42.5 years, close to that they had known in 1836 (42.1 years). For men, however, this bonus disappeared by the 20th birthday for France in general, and turning into a deficit by the 25th birthday in Le Creusot,

One further element is worthy of note: the growing gap between men and women in Le Creusot in 1876. From the age group of 10–14 years upwards, women – especially until the ages of 35–39 years – died in far fewer numbers than their masculine counterparts. And yet on the national scale – except, to a certain extent, for the age group of 20–24 years – one would have to wait 40 years for feminine mortality to become slightly inferior to that of men. Could this be explained by the effects of poor working conditions – fatal accidents and injury?

Arduous working conditions, mining or factory accidents account for the high level of masculine mortality compared to that of young women of the same age (15–35 years). This is especially during the initial industrialisation phased in 1836. Later on, masculine mortality fell at a time when feminine mortality was on the rise, so that the gap diminished. Industralization does not seem thus to have directly incurred over-mortality, especially as women in Le Creusot participated only very marginally to production.

As to the middle – and long-term effects of pollution (often described as spectacular) on the health of the population, they are impossible to verify, although there is no dearth of written accounts. In the 1870's, the pollution was so intense in the poorly ventilated valley where the waste from the mine and factory hovered over the town, that the Director of the factory works, Emile Cheysson, left the town abruptly in order to preserve the health of his wife, who did not tolerate well the smoggy environment. The number of cases of chronic bronchitis, so weakening to the organism, must therefore have been very high.

In conclusion, it would appear as if public health measures, the development of individual housing, water supply, garbage disposal, a hospital, consultancies and free treatment, as well as the acquisition of the principles of individual and family hygiene were indispensable in compensating for the negative effects linked to population growth. The life expectancy at birth among inhabitants of le Creusot in 1836 was thus attained once more in 1876, after forty years of worsening living and environmental conditions. The paroxysmic phase would appear to be that of very high mortality rates, whereas the consolidation of the phase signalled the return to levels of mortality preceding the surge in population growth.

The City: The First Scale for Public Health Intervention:

The Le Creusot Example

The experience of Le Creusot in France or Seraing in Belgium illustrate the challenges major companies faced in organising accommodation for their growing workforce. Initially this was of no concern to them, but the inability of the private market to provide enough houses and flats led them to play an increasing role in the organisation of the city. Starting with little caserns they quickly moved building little houses with gardens as a bulwark against the rising threat of socialist radicalism. There was also a more direct utility for the industrialists in having a workforce close to the factories.

In the case of Le Creusot, it is possible to follow very precisely how the initiatives converge to improve public health. The analysis of mortality has brought to light certain particularities which are worth considering. First of all, the surprising mortality rate among children up to 10 years, especially between 5 and 10 years. It has been known for years that mortality among 1 to 4 years old is an excellent indicator of conditions of hygiene and healthiness in which young children live. This is much more true than for infant mortality, since infants benefit for a time from maternal immunity and from the mother's antibodies through breastfeeding. While infant mortality is generally high, it is not particularly so in Le Creusot, where young children died mostly in late summer and early fall, the usual time for gastro-enteritis and epidemics such as scarlet fever. According to Dr Cancal, the Creusot children, "frail and sickly scrofutous and syphilitic", died in large numbers: out of "300 cases in 1857, 193 died of gastro-enteritis". The measure lacks the precision one would wish, but Dr Cancal indicated that between 1854 and 1858, out of a total of 3 482 births, 729 deaths from gastro-enteritis were recorded among young children.[14]

Lists of causes of death were kept with great care by physicians and have survived for the years 1857 and 1858. In Le Creusot, Dr Cancal appears to have made a conscientious listing insofar as the columns headed "other causes" (including still-births) and "unknown causes" account for 13 % of the cases only, out of a total of 895 deaths. The principle causes of death, for the whole of the population, were the following:

14 Dr. Cancal, 'Note à M. le Dr. Carion, médecin des épidémies de l'arrondissement d'Autun' (Académie François Bourdon, Le Creusot, March, 1859).

Table 4. Major causes of death reported. Le Creusot 1857–1858.

Causes of death	**% of total deaths**
Measles	2.0
Croup	4.8
Meningitis, convulsions	6.0
In total	**12,8**
Catarrh, pleurisy, pneumonia	*7.2*
Pulmonary consumption	*8.9*
In total	**16.1**
Typhoid	*3.8*
Enteritis	*29.6*
Dysentery	*4.9*
Diarrhoea	*7.4*
In total	**45.7**

The "sickness of the digestive organs", suffered mainly by "young children", come far ahead of all the other causes of death according to the cross-checkings established from different evidence assembled by Dr Cancal (193 out of 212 deaths in 1857 and 137 out 163 in 1858).

These findings direct attention to the quality of the water supply. In spite of the influx of workforce, the number of wells remained small, leading to ever greater water shortages in the 1850's. It is estimated that the 16 000 inhabitants consumed only 100 cubic meters of water per day (that is, six litres per person, per day!). The shortage was so severe, that the water reservoirs of Riaux and Forge of 200 000 cubic meters were rapidly consumed by the factory at a rate of 3 000 cubic meters per day, forcing the workshops sometimes to close down. In the town as a whole, there was only one source of water which was abundant and did not dry up: the Riaux springs. On the hottest summer days, water merchants went to fill their vaults from the mountain springs near Le Creusot and sold it to the town dwellers. It is easy to imagine that the modest consumption of water, which was at once expensive, hardly fresh and probably polluted, could not but begin harming the youngest organisms as early as August.

Between 1862–1864, a stream was captured in the neighbouring hills and eased the situation though many people still had to rely upon water fountains. However, the very prominent reduction of mortality in infancy by 1876 seems to have resulted, at least in part, from the introduction of water distribution. Preston's and Van de Walle's demonstration of a strong relationship between the implementation of water supply and sewages and decreases in mortality in Lyon, Paris and Marseille

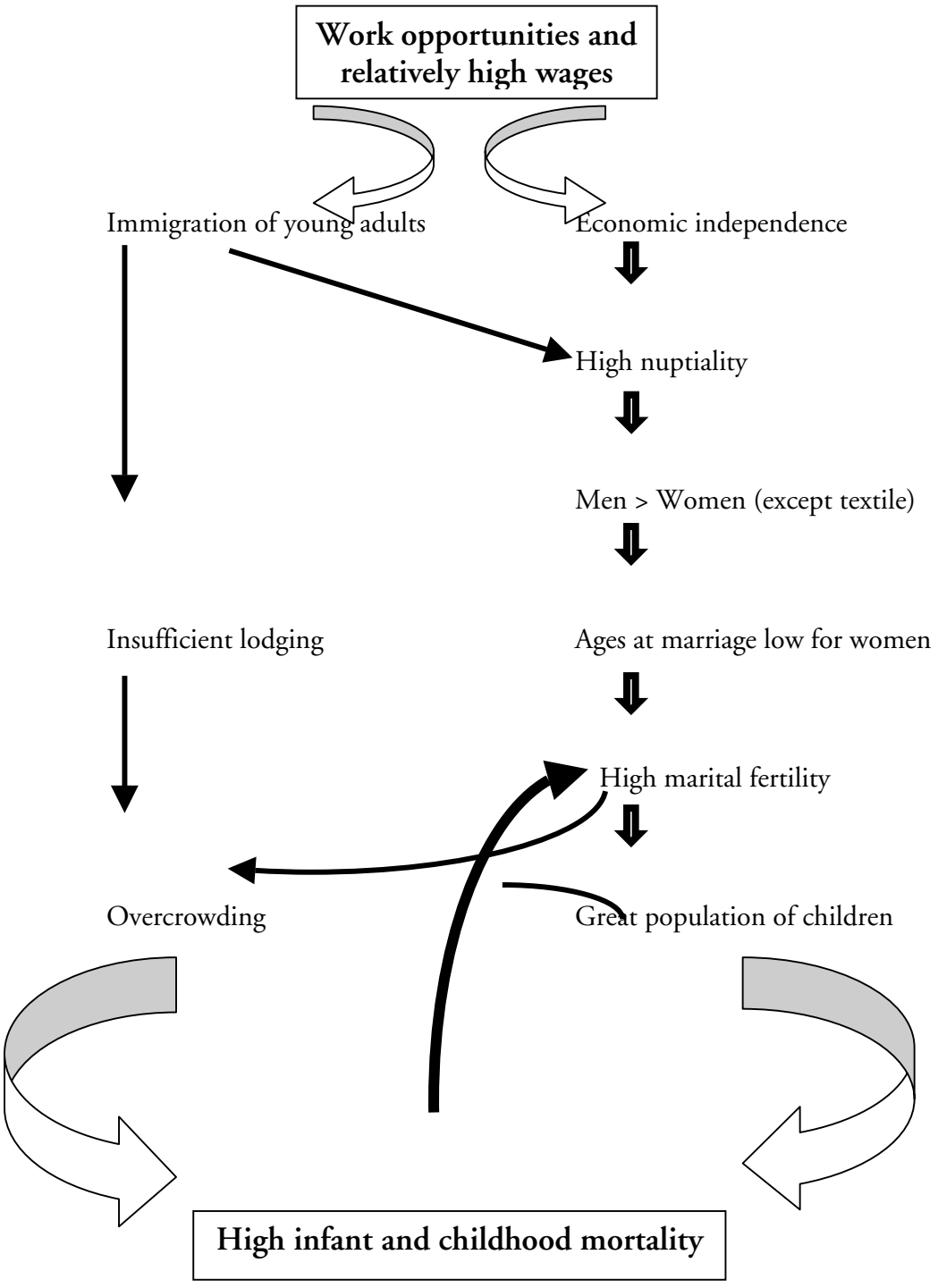
seem to be confirmed in a little industrial town too. Nevertheless, even in 1876, mortality among the 5–9 year-olds was still much higher in Le Creusot than in the rest of France (6 per thousand instead of 3!). Water being still no doubt scarce, the summer of 1873 saw another water shortage, for the population of the town had grown by some 8 000 inhabitants since the early 1860's.

Public health improved slowly: in 1867, a general service of garbage and waste disposal was introduced, while a slaughterhouse was not built until 1879. Besides these public hygiene shortcomings, causes of mortality were also to be found in housing. Construction could not keep pace with the rapid population growth of 10% per annum between 1846–1866. A juxtaposition of permanent constructions, workers' barracks and make-shift dwellings haphazardly lined along the roads which crisscrossed the town. Certain neighbourhoods of Le Creusot must have resembled the slums of modern third-world cities, in which child mortality is likewise very high. Respiratory ailments, particularly tuberculosis, came second in causes of death for the years 1857–1858, without any noticeable imbalance between the sexes. Young girls were not kept inside by activities linked to the nearby textile industry or to needle work distributed merchant-contractors.

Such housing and hygiene conditions were probably the cause, at least in part, of feminine excess mortality in early childbearing years. For young women newcomers these risks were compounded by their lack of social relations in the new environment which might have allowed them to secure more hygienic childbirth conditions and assistance based on mutual aid (the number of midwives was very small). The lack of social capital could be one of the factors of their high mortality. However, in this case too, mortality had receded significantly by 1876. The parsimonious distribution of water is not enough to explain such a significant decrease. This raises the question of the possible effects of employee policy.

The Schneiders were faced with the obligation of organizing a small village into a town whose population was increasing relatively to the rate of development of the factories. They rapidly set up a church, a school, took charge of refuse collection and urban planning and then housing for their workforce. The construction of districts and then of sorts of housing lots was undertaken as early as 1856 (rue de Montchanin). It was marked by a sudden increase in numbers of advances ceded to the personel (predominantly to pay for the housing). The total sum of advances came to 150 000 francs in 1856, the first noted maximum to 100 000 francs in 1860 when the Boulevard du Guide was constructed, then to 440 000 francs in 1856, when the building of the Sablière, Villedieu and Saint-Charles was launched. Between two large operations, the annual sum leveled off at 25 000 francs. At the end of the period studied the construction of Croix-Menée was launched and the advances went from 11 000 francs in 1874 and 1875 to 150 000 francs in 1876, 118 000 in 1877 and again to 118 888 francs in 1878. Such successive incentives

Figure 2. The Demographic Pattern in the «Paroxysmic Phase»



towards constructing small houses with gardens produced an unquestionable improvement in housing conditions in the Creusot area (for example, 150 houses were built in the sole operation of Villedieu).

Housing conditions improved all the more after 1870 with the considerable decrease in the rate of population growth. In 1863, Schneider opened a hospital in which his workers and employees, their wives and children under 15 years were treated without charge; three consultancies were created within it as well as pharmacies. The level of medical efficiency was certainly not very high, but elementary advice on hygiene could thus be given to mothers and an awareness of health was allowed to develop. Nor can one neglect the consequences of free schooling for boys and girls. Future mothers were able to acquire notions of family hygiene which may have contributed to the aforementioned accelerated decrease in mortality.

The relatively lower mortality among young masculine immigrants in Le Creusot during the period which marked the greatest cramming and promiscuity requires some explanation. One can argue that those who emigrated from the country to the town were the strongest peasants – a form of selection bias. In such a hypothesis, the selection would not have come into play for their wives, who simply accompanied their husbands, which would explain their high mortality rate compared to local women. Finally, it is not impossible that the young men who immigrated to Le Creusot had become progressively used, thanks to their former temporary migrations, to a new bacterial environment, while their wives had not had such an opportunity before settling in Le Creusot. Both explanations are more complementary than antagonistic. And Le Creusot is not an exceptional case.

The Others Cities

The growth of industrial workforce is not the only explanation for the new local policies that appeared in several French cities during the first decade of the Third Republic. The phenomenon of the high mortality in some poor urban districts was clearly known and for the new local elite – republican – it was no longer possible to be apathetic. At the same moment, the multiplication of international scientific conferences on Public Health highlighted the creation of *Municipal Board of Health* in Brussels (created by Dr. Janssens in 1863) and Turin (1864).[15]

15 Anne Rasmussen, 'L'hygiène en congrès (1852–1912): circulation et configurations internationales' in P. Bourdelais, *Les Hygiénistes, enjeux, modèles et pratiques* (Belin, Paris, 2001), 213–239 ; Serenella Nonnis Vigilante, 'Idéologie sanitaire et projet politique. Les congrès internationaux d'hygiène de Bruxelles, Paris et Turin (1876–1880)', in P. Bourdelais, *Les Hygiénistes, enjeux, modèles et pratiques* (Belin, Paris, 2001), 241–265.

Following these conferences men such as Dr. Gibert of Le Havre succeeded in convincing the majority of the town council of the utility to create such a Board. But not without difficulty. Between the opposition of the doctors who fear the loss of potential customers and the city council men who do not want to engage in any additional expenditure, the way is narrow. In order to convince the local elites and public opinion, Dr. Gibert leaves on mission to Brussels and addresses five letters to a newspaper of Le Havre so that it publishes them.[16] Even if the rhetoric of these letters is that of a political operation of promotion and a setting in scene of the medical claims, it is also a vibrating plea in favour of medical progress.[17] After stating his admiration for the whole of the organization, Dr. Gibert shares with his reader the visit to the office of the director of the Board of hygiene, Dr. Janssens. "Here you find a chart of the town of Brussels, constellated with a quantity of small red, green points, blue, etc. You approach, each coloured point is a head of a pin; each pin, according to its colour, represents a disease. Each day Dr. Janssens pricks these pins; thus, the smallpox is represented by a blue head, the typhoid fever by a red head, etc. It does not insert the pin of the day, it leaves it left all its height. Then, this made work, the chart is carried the evening, each evening, in the Mayor office, who, after having examined the new cases of contagious diseases, inserts the pins." Thus, it adds, the mayor seizes in a simple glance which are the epidemic dangers and what is the trail of the disease. Information is collected by the doctors who, vis-à-vis a case of "smallpox, scarlet fever, measles, typhoid fever, typhus fever, Asian cholera, diphtheria, epidemic dysentery", fill an *avis sanitaire* addressed to the Board of Hygiene; they indicate on it the name, the age and the residence of the patient while respecting the professional confidentiality thanks to the use of a numbered nomenclature of 116 causes of death. Each day, the municipal administration thus knows the magnitude of all new epidemic and can take adequate measurements. In the event of smallpox, for example, all the inhabitants of the house and street concerned are vaccinated or revaccinated. All clothing and pieces of furniture of the patient are disinfected, and the patient isolated as far as possible downtown, or at the hospital in a service specific to the contagious patients. The Board of Hygiene also organizes daily and free vaccinations; moreover, all the pupils of the schools are revaccinated. If it is about the typhoid fever, as soon as a case is announced, the Office of Hygiene makes make an accurate check of the roadway system of the district, and particularly of the sealing of the sewers and water pipelines.

On the question of the unhealthy flats, very sensitive since the law of 1850, Dr. Gibert stresses that in Brussels, the commission of the unhealthy flats is joined

16 Bourdelais, (2003).

17 Dr. Gibert, *Une visite au Bureau d'hygiène de Bruxelles* (Imprimerie F. Santallier, Le Havre, 1878a).

together at the Board of Hygiene, so that "the municipal administration has any authority to make carry out by the owners the improvements which the Board of Hygiene will have asked for", it is a also judge of the conformity of work completed. It describes finally the organization of medicine in the Brussels schools. Each school is visited once per week, which make it possible to the doctor to identify the children with any contagious disease of the eyes, skin, scalp and to exclude them until their cure. He must give a brief lecture also there on this disease observed at one of the pupils or on another epidemic. Gibert underlines the double utility of these lectures because "the children admirably retains all that one says to them, and will repeat on at home these precepts of hygiene which penetrate more easily in the families in this manner than by the book or the journal."

He completes his last letter by tackling the budgetary matters, to which the city council men are necessarily very attentive. "Thanks to a weak sacrifice, the administration saves many human lives, and it can be proud justifiably to have given to all Europe a similar example to follow." Nevertheless, by mentioning the level of the wages of the doctors of the Board of Hygiene of Brussels, he insists on the need for also remunerating them by Le Havre: "Pay your doctors well, otherwise you will not have anything. If you do not want to pay well, do not do anything. That is worth better." These words are more poignant coming from a doctor who established the first dispensary for children in France, on his own capital stocks, in Le Havre in 1875, and which gave free consultations every morning! Like all the medical hygienists, he is convinced that this prevention policy will result in substantial savings on the budget of the hospital and that of the medical care.

In the creation of a Board of Hygiene in Le Havre, presented in front of the town council of the city, Gibert insists on the eminent place that medicine must occupy in the management of the city.[18] He succinctly captures the thoughts of the medical ambitions and hygienists of the time. "If the social life did not profit yet from all the progress made by medicine in our century, the fault is especially with the routine which did not make it possible to the Doctors to up to now take in the social body the place to which they have right, and to be made the popularizers of the scientific conquests that they only can know and make." A Board of Hygiene would fill four principal gaps of the existing systems: the timely monitoring of epidemics; the roadway system and initially sewers and drainings (always the question of the sealing of the sewers, the use of the mobile tubs and the conditions of removals of the refuses); the unhealthy houses (the law exists but is not applied, the Board of Hygiene would centralize the complaints, would supervise the completions of the work prescribed by the Commission of the unhealthy houses);

18 Dr Gibert, Fauvel and Lafaurie, *Création d'un Bureau d'hygiène municipal* (Imprimerie Alphée Brindeau et Cie, Le Havre, 1878b).

medical care (organization of the helps in residence, of means of bandage and treatment distributed by districts, in order to prevent that the hospital becoming "the rendez-vous of all the wrecks of the social life"). The Board of Hygiene must also deal with the protection of the infants, of the ergonomics of the school furniture as well as of the infectious diseases present in the schools, as well as organization of baths for children.

Gibert by insisting on the relevance of the municipal scale of the Board of Hygiene, because "the municipalities, generally, do not listen or listen only imperfectly and almost never seriously into practice do not put the opinions of the Councils of hygiene, departmental and of arrondissement." Lastly, typical of the French elites, it does not fail to locate the efforts requested from the point of view of the demographic safeguard of France: "A stronger reason the country will have it the right to be applauded to have granted to hygiene its true place in the social life, if each year a more considerable number healthy and robust defenders is preserved for the army, if a more crowd of arms is preserved at her workshops of all kinds, and if a greater number of girls are prepared, by a salutary education, with their role of mothers... we are not the first in the production of the human life, now be the first in the economy and the saving of this treasure incomparable."

Demographic fear and particularly the spectacle of the catastrophic mortality which accompanies the urban growth at the end of the Second Empire are also at the origin of the pleas in favour of the creation of Board of Hygiene in Nancy, Rheims or Grenoble. In the latter, Dr. Berlioz presents at his project of creation of Board of Hygiene at the end of the 1880's and highlights on the high level of mortality in his town compared to other comparable cities. He also highlights the extent of the fall recorded in the cities, which obtained this device and quotes the example of Glasgow. Lastly, insofar as the Board mainly make it possible to fight against the epidemic mortality, which accounts for 20% of the whole of mortality in Grenoble, its effectiveness would be significant.[19]

The first Board of Hygiene is created, after a year of committee work, by the municipality of Le Havre in March 1879. It soon is followed by Nancy the same year, then by others towns: Rheims (1881), Saint-Etienne (1884), Amiens (1884), Pau (1885), Bordeaux (1890), Grenoble (1889); a new system is set up in Rouen at the middle of 1880's. Finally, if the debates in Parliament find hardly legislative outlets in the field of the public health, the cities multiply the initiatives. In about fifteen years, more than twenty French cities created this new municipal service in particular.

One of the first effects of the existence of such Boards is the reinforcement of the control of the smallpox re-vaccinations and the attempt to determine the

19 Lucie Paquy, *Santé publique et pouvoirs locaux. Le département de l'Isère et la loi du 15 février 1902*. History thesis (Université Lyon 2, 2001).

characteristics of the epidemics by their cartography. To this end, "sanitary registers of houses" (*casiers sanitaires des maisons*) are set up, in Le Havre (a la Brussels) and also in other cities like Bordeaux, Nantes, Nancy or Saint- Etienne. The survey of houses or blocks and the comparison of numbers, which the renowned social engineer Emile Cheysson recommends highly, constitute a prototype of the crossing of the administrative organization (hierarchical) with the empirical hypothetical deductive approach. In Le Havre, statistics of death by phthisis, typhoid, diarrhoea enteritis as well as seasonal curves and charts by street are published regularly.

Paris launches out in its turn in the adventure of the constitution of sanitary register of houses of the capital in the last years of the 19th century. Tuberculosis and cancer are particularly tracked: the unhealthy small islands are represented starting from a concentration of "cases" located with the address (number and name of the way). But this innovation is not only technical: it rather translates as the will to "treat" the small islands. Cartography is one of the principal means of visualization and consolidates the territorialisation of the public action by identifying infected places or environment: buildings, streets, small islands, subdistricts. The teaching aspect of many presentations leads to the publication of directories, or of booklets, which as many become familiar tools for the local municipal officers and elected representatives. Issued from the comparison of administrative files concerned with two different sectors, the technical and the social one, the statistics made it possible to identify factors starting from simple comparisons between the causes of death and the climate, the medical infrastructures, the characteristics of the residences etc. There is no more opposition between the importance of the environment, in the neo-hippocratic sense, and the recent discoveries of bacteriology, because it from now on is empirically shown that the bacillus of Koch for example survives and multiplies more easily safe from the light and in a humid atmosphere.

On the eve of the 1902 law, the first great general law of public health, which imposes at the cities of more than 20 000 inhabitants to create an Office of Hygiene, many large French cities had already created such structures entirely on their municipal budget. Some had already moved onto the constitution of a sanitary register (*casier sanitaire*). The volume of the correspondence exchanged between the French cities, on technical subjects (organization of the night medical service, surveillance of the markets, organization of the Board of Hygiene, but also construction of the sewers) testifies these advances.

Institutionalisation, Professionalism. A Revenge of Non-Catholic Élite?

With the 3d Republic, a new group of politicians emerged: less conservative, more often non-catholic. It is amazing to have a list in each big city and to verify this point. In Le Havre, Jules Siegfried, belonging to the well-known protestant family of industrialists in Mulhouse has been elected mayor. Dr. Gibert, protestant from Switzerland has married one of the daughters of another protestant Mulhouse's family: the Dollfus. In Nancy, during the 1870's, Charles Nathan-Picard, from jewish religion, begins to advocate for more municipal credits for the official municipal charitable Board.[20] Some years later, the radical reorganization of the municipal charitable system is from Léopold Lallement, lawyer and protestant. In Rouen, Louis Ricard, republican and protestant, built the "Rouennais system" in the 1880's, and some other personalities of the reform in Rouen were freemason, as was the first director of the Municipal Board of Health in Grenoble.

These men proposed to organize, under the municipal responsibility, new Boards of Health, new dispensaries, new systems to help poor people. Pushing away all the catholic volunteers and religious nurses they proposed finally an institutionalisation, a municipalisation and a professionalisation of the people working in charitable activities. These changes didn't occur without any conflicts. Two examples illustrate the difficulties.

In Nancy, during the 1870's, Charles Nathan-Picard proposed to make permanent, non exceptional as it was usually, the relief to elderly people, widows, and ill people. For such a purpose, he asked for municipal funds. But the private catholic charitable organizations protested because they would loose their role and also their social importance.

In Rouen, in 1879–1880, Ricard worked for a fusion between the social and sanitary administration of the city.[21] For instance, the members of the fifteen boards of the dispensaries are exclusively the catholic elite. So he designates some personalities from Jewish milieu and from protestant organizations. But a lot of clashes occurred. Very explicitly, one of the previous catholic administrators writes that in the Town Hall, behind the mayor, is the representation of the Republic with its claims for human rights, these he cannot recognize because he only abides by duties taught by the Christ. Guillou was dismissed for postponing the distribution of meat cards for poor to celebrate the 14th July (the anniversary of the French revolution) to the 17th, to "discredit the Republic". Some months later a new clash

20 Sanford Elvitt, *The Third Republic Defended: Bourgeois Reform in France, 1880–1914* (Louisiana State University Press, Baton Rouge, 1986).

21 Yannick Marec, *Bienfaisance communale et protection sociale à Rouen (1796–1927)*, La Documentation française (Paris, 2002).

occurs between the new administration and two catholic nurses in charge of the poor relief. They were opposed to the new reforms and refused to give card relief just to the poor regularly registered and even organized a demonstration of poor against the new administrator. It is in such a situation that the dismissal of the catholic nurses was sought and that the municipality planned to employ municipal servants for each dispensary. Salaries were not the only cost. The buildings in which the dispensaries were organized belonged to the catholic orders or to the bishop. And so, a big municipal program to think what could be the new dispensaries and how it would be possible to build it very quickly was launched.

But in Nancy, as in Rouen, the main concern of the new elite was the distribution of relief to poor people without rules, just if they were "good poor", belonging to the catholic influence networks and so on. In Rouen for instance, the catholic nurses kept the relief cards of the dead and gave it to some poor people they knew.

In such context, the municipalization of the Public Health and assistance system seemed to republicans the only way to prevent favouritism, discrimination, and to implement social justice in the relief distribution. For that, they had to propose new procedures for the targeting of the poor. Voluntary workers (catholic) were pushed away and replaced by new municipal servants who were more and more professionalized. Criterions were produced: First, the person has to be an inhabitant of the city for one year at least. Second were the economic criteria – the person has to have less than 1 franc per day from her work or be unable to work. For the families, tables were established. The threshold to receive relief was fixed to 9 francs each week for a two persons family, 12 for a three persons family, 15 for a 4 persons family… Reliefs for elderly people are limited to those over 70. For each poor person or family, a dossier had to be opened. The poor had to ask for relief on a form, supply a certificate for his address (given by the police officer), a receipt for his flat rent, a marriage certificate, a birth certificate for children and unmarried people, a vaccination certificate for each person in the family, a certificate from the dispensary's physician indicating infirmities of the family members and a certificate for school attendance (just after the laws on free primary schools, secularized and compulsory). After receiving the dossier, the municipal employee (the ancestor of our social workers) has to do an investigation at the family address, to verify the information given and to verify also if the situation of the family has changed since the opening of the dossier. For each district a position of verification officer was opened and another one existed to the central level of the municipality. So, the information on individuals and families were verified and crossed before relief! The transparency was the prerequisite for social justice; but it has also opened the doors to the interpretations in terms of social control.

Each step of the process means to invent printed forms, cards, alphabetical systems to cross the information between all the relief districts. A real professionalism emerged and improved very quickly.

In the 1880's, another new direction was the linking of social assistance to medical care. For instance, in Rouen all the new dispensaries built had a special room for medical examination. This was the case in Le Havre since the 1870's, but on a private basis of private and individual beneficence (Dr. Gibert personal dispensary). Physicians were appointed to the dispensaries and their role was to treat minor illnesses before it worsened and required hospitalisation. So, an economic purpose was also behind this policy of preventive medicine : the choice was to invest more money in Municipal Board of Health, in dispensaries, to try to diminish strongly the very high hospital budgets.

Conclusion

Around the middle of the 19th century, in France, industrialization leads to urbanization of old market town or countryside places as well as the development of workers areas in larger cities. In the first case, all the European studies, in this instance in Le Creusot, show how the consequences of the unregulated growth of the industrial city had tremendous consequences on the decline of the expectancy of life and on the high level of childhood mortality. A paternalistic policy improves the local environment and sanitary situation to mitigate the penalty of growth. The new liberal economy was not able to provide people regular work and wages making families vulnerable to pauperisation because of illness of the father or because of the economic situation. In a lot of large cities, poverty lead to a high mortality and to epidemics. The first policy against the mortality and the epidemics, to improve Public health occurred at the local level. As early as the 1870s a variety of local initiatives have been initiated. But it is clear that the change of political regime has also been decisive. The new local political elite increasingly came from Protestant or Jewish origins and freemasons became more influential. In that context, it is possible to analyse why and how the assistance system and public health structures have been municipalized. For the Republican, often non active catholic elite or not at all catholic, the social justice in attribution of relief was linked to transparency of procedures. That led to a reflection about the objectiveness of the criterion chosen to decide who will be relieved. New methods, new forms, new investigation follow and a professionalisation of what will become the "social" work, as a guarantee for rational choice between people to help. Introduced to compensate the uncertainty of workers revenues, the system was rapidly linked to health perspective and

medical cares, even to preventive medicine. The question of the regulation of social changes and of consequently vulnerability is still addressed to our societies.

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Table

Table 5. Life expectancy at birth. France 1806–2001.

Year	Men	Women	Year	Men	Women	Year	Men	Women	Year	Men	Women
1806	32,8	37,3	**1855**	35,0	39,0	**1904**	46,5	49,8	**1953**	64,3	70,2
1807	32,0	36,5	**1856**	38,5	40,9	**1905**	46,6	50,3	**1954**	65,0	71,2
1808	31,2	38,0	**1857**	38,7	39,8	**1906**	46,0	49,7	**1955**	65,2	71,5
1809	31,3	39,0	**1858**	39,2	39,9	**1907**	46,5	50,2	**1956**	65,1	71,6
1810	35,3	39,7	**1859**	34,4	35,7	**1908**	47,5	51,4	**1957**	65,5	72,2
1811	34,0	38,4	**1860**	42,4	43,6	**1909**	48,1	52,0	**1958**	66,8	73,1
1812	24,3	39,4	**1861**	39,1	40,3	**1910**	49,5	53,3	**1959**	66,8	73,3
1813	23,8	38,9	**1862**	41,8	43,0	**1911**	46,2	50,1	**1960**	67,0	73,5
1814	23,8	36,7	**1863**	40,8	42,1	**1912**	49,6	53,8	**1961**	67,5	74,3
1815	34,2	38,9	**1864**	41,0	42,5	**1913**	49,4	53,5	**1962**	67,0	73,7
1816	38,9	41,0	**1865**	38,7	40,2	**1914**	29,5	53,3	**1963**	66,8	73,7
1817	37,7	39,8	**1866**	40,5	42,1	**1915**	27,2	52,6	**1964**	67,7	74,7
1818	37,7	38,7	**1867**	41,2	42,8	**1916**	30,8	52,4	**1965**	67,5	74,7
1819	36,5	37,8	**1868**	38,9	40,8	**1917**	35,6	52,0	**1966**	67,8	75,1
1820	38,0	39,5	**1869**	40,0	42,0	**1918**	28,6	43,3	**1967**	67,8	75,2
1821	38,6	39,8	**1870**	33,7	37,7	**1919**	43,7	50,2	**1968**	67,8	75,2
1822	37,3	38,7	**1871**	26,3	31,7	**1920**	50,2	53,9	**1969**	67,5	75,1
1823	39,0	40,9	**1872**	41,8	44,0	**1921**	50,6	54,8	**1970**	68,4	75,8
1824	38,2	39,9	**1873**	40,4	42,3	**1922**	52,9	56,8	**1971**	68,3	75,9
1825	37,4	38,4	**1874**	42,6	44,7	**1923**	52,6	56,7	**1972**	68,5	76,2
1826	36,6	37,7	**1875**	41,0	43,1	**1924**	53,0	57,4	**1973**	68,7	76,3
1827	38,4	39,9	**1876**	41,6	44,1	**1925**	52,0	56,7	**1974**	69,0	76,7
1828	36,6	38,1	**1877**	43,0	45,0	**1926**	51,8	56,2	**1975**	69,0	76,8
1829	38,5	40,1	**1878**	42,0	44,1	**1927**	53,6	57,8	**1976**	69,2	77,2
1830	38,3	39,9	**1879**	42,8	45,0	**1928**	53,3	57,5	**1977**	69,7	77,8
1831	38,2	40,0	**1880**	41,0	43,2	**1929**	51,9	56,5	**1978**	69,8	77,9
1832	34,8	36,2	**1881**	41,8	44,3	**1930**	54,3	59,3	**1979**	70,1	78,2
1833	38,0	39,5	**1882**	41,7	44,3	**1931**	54,5	59,2	**1980**	70,2	78,4
1834	34,1	35,6	**1883**	41,9	44,4	**1932**	54,7	59,7	**1981**	70,4	78,4
1835	38,2	40,2	**1884**	41,0	43,7	**1933**	55,1	60,2	**1982**	70,7	78,8
1836	40,6	42,3	**1885**	42,2	44,9	**1934**	55,5	61,2	**1983**	70,7	78,7
1837	38,5	39,7	**1886**	41,1	43,9	**1935**	55,4	61,1	**1984**	71,2	79,3
1838	38,5	39,8	**1887**	42,2	44,8	**1936**	55,8	61,7	**1985**	71,3	79,4
1839	40,2	41,4	**1888**	42,4	45,5	**1937**	56,1	62,1	**1986**	71,5	79,6
1840	39,1	40,7	**1889**	44,0	46,9	**1938**	55,9	62,0	**1987**	72,1	80,2
1841	39,1	41,3	**1890**	41,3	44,3	**1939**	56,5	62,6	**1988**	72,3	80,5
1842	38,8	40,7	**1891**	42,2	45,2	**1940**	42,6	59,1	**1989**	72,5	80,6
1843	39,9	41,3	**1892**	41,9	44,8	**1941**	53,9	61,2	**1990**	72,8	81,0
1844	41,5	42,8	**1893**	42,0	45,2	**1942**	53,6	61,5	**1991**	72,9	81,1
1845	42,6	43,9	**1894**	43,9	47,2	**1943**	48,9	58,1	**1992**	73,2	81,4
1846	39,4	40,7	**1895**	42,7	46,2	**1944**	41,8	53,7	**1993**	73,3	81,4
1847	39,3	40,9	**1896**	45,4	48,7	**1945**	51,3	58,6	**1994**	73,7	81,8
1848	39,3	41,0	**1897**	46,2	49,3	**1946**	59,8	65,1	**1995**	73,9	81,9
1849	35,1	36,6	**1898**	44,5	47,4	**1947**	61,2	66,6	**1996**	74,1	82,0
1850	42,4	43,8	**1899**	43,7	47,1	**1948**	62,7	68,7	**1997**	74,5	82,3
1851	40,7	42,0	**1900**	43,4	47,0	**1949**	62,1	67,5	**1998**	74,8	82,4
1852	40,4	41,6	**1901**	45,4	49,0	**1950**	63,4	69,2	**1999**	74,9	82,4
1853	41,5	42,9	**1902**	46,4	49,5	**1951**	63,1	68,8	**2000**	75,2	82,7
1854	34,8	36,6	**1903**	46,8	50,2	**1952**	64,4	70,2	**2001**	75,5	83,0

Source: see note 2.

Social Changes and Better Health Conditions of the Portuguese Population 1974–2000

Teresa Rodrigues Veiga, Maria João Guardado Moreira, and Ana Alexandre Fernandes

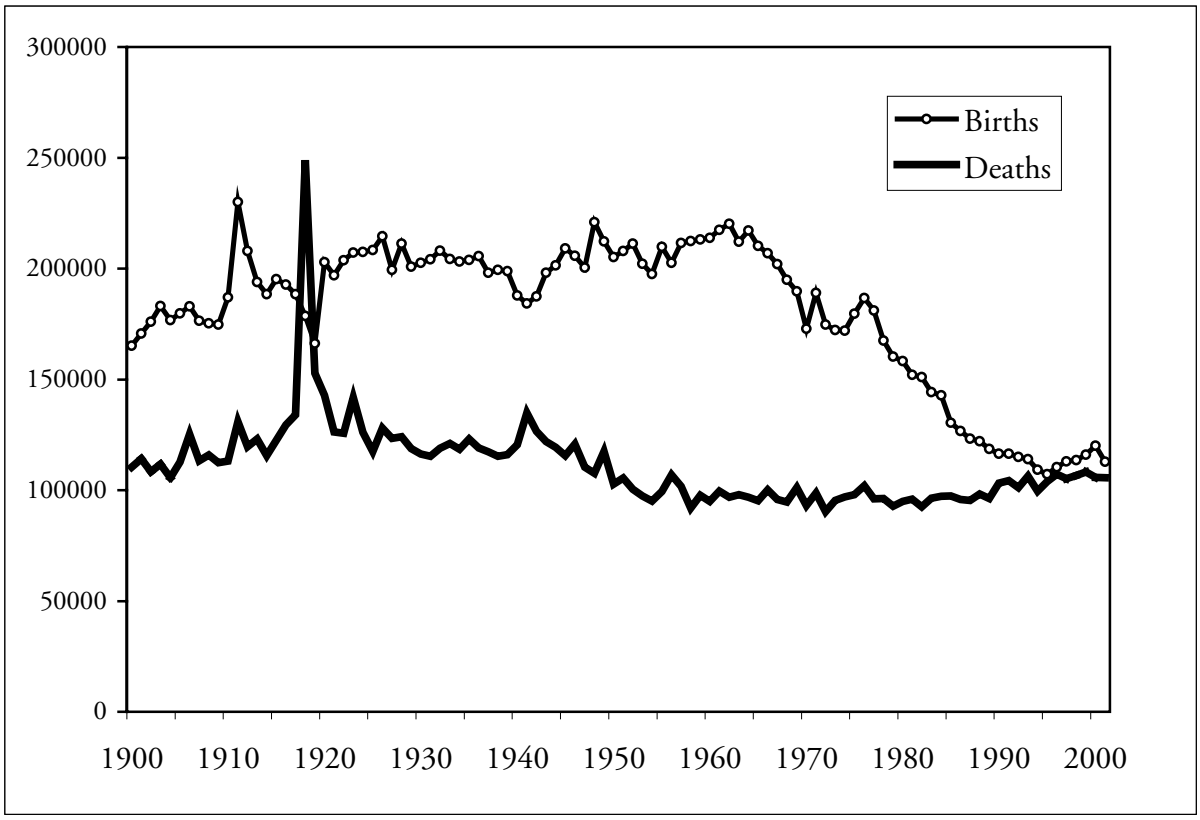
The main purpose of this chapter is to illustrate the most significant changes in mortality rates and health status and their impact on Portuguese society. For practical purposes, we have taken into consideration two major problems, and we have approached them following different methodologies. Firstly we detect changes in Portuguese mortality rates using some demographic indicators and correlate this to the broader socio-economic changes that have occurred. Secondly we focus on the role of the National Health Care System as well as alternative institutional support at all levels.

The methodological approach followed varies according to the available statistical data on health and death. Official statistical data on population movements became of scientific interest at the beginning of the modern era, by the end of the 19th century. The records on population movements became reliable by the second half of the 19th century, although it was not until the late 1880s that the publication of demographic statistics began. This data provides information on basic mortality rates, fertility rates and migratory movements during the last 150 years. After 1864, a reliable general census of the population is made. Nevertheless, major changes in the global quality of data will not be introduced until the 1930s.

General Demographic Trends

During the 19th and 20th centuries, the processes of urban growth, industrialization and migration were the main explanatory factors of national demographic movements. After 1974, migratory movements within the country became more relevant, and population density increased in the coast. In recent years, the importance of such movements has been partly replaced by immigration.

Figure 1. Number of births and deaths during the 20th century.



Source: Estatísticas Demográficas, INE, Lisboa, 1910–2001.

Today, Portuguese society presents an almost inexistent level of demographic growth, a high rate of life expectancy, low levels of fertility rates and an increasingly elderly population. All these demographic trends converge and create a model with slight regional variations.

In the diachronic axis, Portugal has presented moderate growth rates for the last two centuries, with variations and asymmetries between the mainland and the islands – Azores and Madeira –, the northern and southern parts of the country, the coast and the countryside. However, it is possible to distinguish clear-cut phases and sub-periods, which differ with regards to total annual average growth rates and variation rates (table 1 in appendix).

In the contemporary era, industrialization has had an obvious effect on migration and regional differences within the country. At the same time, political stability and the improvement of life conditions helped to change mortality rates, compensating for the negative tendency of the migratory flow and enhancing the general growth of the population. In 1918, the "Spanish flu" brought such tendency to a halt, but after that period population experienced a new growth (figure 1). An analysis of the total annual growth rates and of net migratory rates from 1900 up to 2001 (table 2 in appendix) shows that in the last 100 years the population increase in Portugal has always depended on the intensity of the migratory flow, and more in particular

from the third quarter of the 19th century onwards.[1] Migration within the country increased after the 1870s, reinforcing a new pattern vis-à-vis fertility and mortality ratios.[2] The crack of 1929 and the Second World War slowed emigration rates. During that period, war refugees influenced the increase of population rates. In the 1940s emigration started out again and, as a consequence, population growth slowed down and actually decreased between 1960 and 1974. However, after the 25th of April, Portuguese and African citizens from previous colonies provoked a population growth of 7%. In the last thirty years, it is necessary to consider stability as the keyword to describe demographic reality.[3]

Between 1855 and 1930, more than 2 million people left the country and 2 more millions followed them between 1930 and 1970, 40% of them during the 1960s. After 1975, emigration rates dropped. Between 1974 and 1976, almost half million Portuguese citizens returned to Portugal from former African colonies. Nevertheless, in the 1980s, emigration increased again, with an annual flow of 26 thousand persons per year, but with new destinations and most of them on a temporary basis.[4] Immigration patterns change too. European immigration has increased in the last five years.[5] One third of the immigrants come from the EU and other European countries (31.9%); some others come from Africa (45.6%), mainly from Cabo Verde (14.6%). Brazilians represent a 14.6% of the total.

According to the last two censuses of 1991 and 2001, Portugal population shows an average annual increase of 0.45%, significantly higher than that of the previous decade, almost entirely due to immigration. Yet, this average value does not reflect the whole story, as some regions, since the mid-80s, show significant reductions in population figures. Population has grown old. At the beginning of the 20th century, the ratio of old and young people was of one to six. By the middle of the century the ratio was one to four, but from the 1960s onwards, swift changes have taken place. The last census counted 1.7 million people over 65, which represents an increase of 44% vis-à-vis 1981. In the same period, young population decreased by 37%.[6] Today, only 16.0% of the population is below 15, 16.4% is over 65. Portugal

1 Maria Ioannis Baganha, "A emigração atlântica e as migrações internas em Portugal", in *Los 98 Ibericos y el mar*, IV, (Lisboa, 1998), 215-228.

2 On this subject see Manuel Nazareth, Portugal. Os próximos 20 anos, III – Unidade e diversidade da demografia portuguesa no final do século XX, (Lisboa, 1988).

3 Teresa Rodrigues, "A população portuguesa no século XX – Permanências e mudanças", *Ler História*, 53, (Lisboa, 2003).

4 In the last five years of the 20th century, temporary emigration has always represented more than half of the total of legal exits (maximum value of 86% in 1999). In 2000 and 2001, 21,333 and 20,589 declarations of temporary exit represented a 78% and a 72%, respectively.

5 In 2001, 27.5% of all the European immigrants came from other EU countries (the United Kingdom, Spain and Germany being the most representative ones).

6 Data taken from the census of 2001 show that Portugal has 1,656,602 young inhabitants (from 0 to 14 years) and 1,693,493 elderly inhabitants (65+ years old). 36,891 young

is one of the five countries of the European Union with fewer younger than elderly people.

In the coast, population is younger, but in the south and in the countryside population is older. As migrants are young, their settlement implies the rejuvenation of the regions they move to and the ageing of those where they came from. This trend has benefited the Portuguese coast, whose population increased during the second half of the 20th century, at the expense of the countryside.[7] Regions with a higher percentage of elderly inhabitants are in the south and in the interior of the country. There are, however, local variations that must be registered, since villages and small towns are more affected than cities, and isolated places with bad accessibility are also noticeably affected. As migrants are mostly individuals in their fertile age, their movement from one place to the other has also negative and positive consequences on fertility rates in the places they leave and they arrive to, respectively. Still, ever since the mid-20th century, and mostly during the last thirty years, the decline of the average number of children per woman has led to the narrowing of the base of the population pyramid of Portuguese population age rate.

Migration towards new economic, more attractive areas has led to the abandonment of the countryside,[8] to the creation and, sometimes, to the chaotic growth of suburbs around big cities and to the formation of metropolitan areas.[9] A study about the recent evolution of the Portuguese urban system shows that in almost all regions the nucleus with urban functions has augmented in size, or at least, has experienced lower demographic losses vis-à-vis towns of smaller dimensions.[10]

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people less. All regions have contributed to this inferiority, except the regions of the north and the islands. In the Alentejo, the proportion is of 174 old persons to 100 young ones; in the central region of the country of 131; in the Algarve of 128; and in Lisbon and Vale do Tejo of 110. In the north this ratio is of 80 elderly people to 100 young people. The Autonomous Regions of Madeira and the Azores have the youngest population in the country, with only 72 and 61 aged people to 100 young people, respectively.

7 Cf Maria João Guardado Moreira, *A Dinâmica demográfica na região do INTERREG Ibérico no Final do Século XX*, FCSH-UNL (Lisboa, 2001); Maria José Carrilho, "Evolução Demográfica no período intercensitário 1991-2001", *Seminário Censos 2001 – Resultados Definitivos*, INE, (Lisboa, 2002).

8 Several studies indicate that 80% of migrants moved from rural areas to urban centres. Only 29% moved from one urban centre to the other (Teresa Rodrigues and Maria Luís Rocha Pinto, "Migrações internas", *Dicionário de História do Estado Novo*, II, Círculo de Leitores, (Lisboa, 1996), 561-565).

9 Teresa Rodrigues and Luís Baptista, "Population and Urban Density: Lisbon in the 19th and 20th centuries", *Urban dominance and labour market differentiation of a European capital city. Lisbon, 1890-1990*, Kluwer Academic Publishers, (London, 1996), 75-122.

10 The methodological presupposition based on Portuguese reality is that all settlements with two thousand or more residents have infrastructures that allow us to consider them urban

Coastal cities and villages have continued to attract people from the interior, but the great beneficiaries have been the surrounding areas of Lisbon and Porto. In the case of Porto, the regions of Braga and Aveiro are to be mentioned, while in the case of Lisbon, it is Setubal that must be referred to.[11] These are, together with Faro, the preferred settlement by immigrants, and they present the highest demographic dynamics. Today more than three quarters of the country show negative natural rates. In fact, during the 1990s, 82% of Portuguese population total growth is due to positive migratory rates.

Fertility Changes

The first phase of demographic transition extended up to 1925 and it was characterised by a decrease in mortality, while fertility rates continued to be high. This would lead to high rates of population growth between the late 19th century and the first quarter of the 20th century, if it were not for the unfavourable migratory balance. However, after 1930 the situation was much the reverse with a slight decrease in birth rates. Between 1940 and 1960, the average Portuguese fertility rate remained stable. It was only in the 1970s that the fecundity of Portuguese women decreased by 25% from 3 to 2.2 children per woman. In 1982, the country ceased to guarantee generational continuity. Still, in the last five years the fertility rate has stabilised around 1.5, with a slight rising tendency.

The traditional family model based on asymmetric conjugal roles followed its course until the late 1960s, as guarantee of social harmony zealously promoted by the political and religious institutions of Salazar's regime (the so-called "*Estado Novo*"). Portugal began to enjoy new social and political conditions from the revolution of 1974 onwards, and this seems to have had a strong influence on parental and familiar behaviour. The cohabitation rate (mixed couples) increased, as well as divorce frequency and the amount of one-parent families, which are both signs of the deep-rooted modifications that characterize Portugal nowadays, with slight regional differences.[12]

Portugal has traditionally low proportions of newborns outside marriage, and its decline is steady between 1930 and 1970. At that time, it represented a 7.2% of the total birth rate, a 9.5% in 1981 and a 15.6% in 1991, and it has reached 23.8%

centres. (Teresa Rodrigues and Maria Luís Rocha Pinto, "1981-1991: as tendências recentes da evolução populacional portuguesa", *História*, 26, (Lisboa, 1996), 44-53).

11 Luís Baptista, "Dominação demográfica no contexto do século XX português: Lisboa, a capital", *Sociologia – problemas e práticas*, 15, (Lisboa, 1994), 53-77.

12 In the past, divorces and one-parent families were more usual in the south and in urban areas. (Ana Fernandes, *Velhice e Sociedade*, Celta Editora, (Lisboa, 1997)).

presently. The average age of women who give birth for the first time has increased since the beginning of the 1980s.[13] At the same time, the proportion of people living alone has risen to 45%, particularly in the case of people over 65.[14] Families with children under 15 represented 46.9% in 1981, 39.9% in 1991 and only 29.9% in 2001. All these changes have led to a decrease of the average family size.[15]

The Mortality Model and the Epidemic Transition

By the end of the 19th century, Portugal seemed to be facing a slow demographic transition. In spite of all the sudden transformations occurred during that century in the economic and social fields, this variable remained stable with regards to annual volumes. Within the country, the battle against death took place in two fronts chronologically separated in time. At first, it was based on progress carried out at a preventive level. Health authorities managed to halt dissemination of various epidemics at bay by several means, of which isolation barriers are a case in point.[16] "At the beginning of the 19th century, epidemics became a real state affair."[17] In fact, it was the central government that played a central role during the several crises that took place throughout the country. In this regard, Portugal took advantage over neighbouring Spain.[18] Hygienists' campaigns came in the second place, as well as the vaccination campaigns that followed Jenner and Pasteur's discoveries. These were to produce specific positive results for the improvement of general health conditions, though this was not yet clear at the turn to the 20th century. Several factors interfered and caused localised alterations in these indicators: differences between life in rural and in urban areas, greater female participation in the labour market, percentages of young or elderly people in some parts of the country, political and/or economic instability.[19]

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13 From 23.6 years in 1981 to 26.8 years in 2001(EUROSTAT (2000); *Indicadores Estatísticos Gerais* (www.ine.pt)).

14 From 10.8% in 1960 to 17.3% in 2001. According to the 1991 census, they represent 55.5%. Ten years later, the number rose to 50,8%.

15 They were 69,7% in 1981, 60,8% in 1991 and 54,3% in 2001.

16 Teresa Rodrigues and Piedade Braga Santos, "Poder central e poder local, um caso de conflito", *Ler História*, 34, (Lisboa, 1998).

17 Jorge Crespo, A Economia do Corpo em Portugal nos finais do Antigo Regime, I, UTL, (Lisboa, 1984), 192.

18 See Teresa Rodrigues and Piedade Braga Santos"Poder central e poder local, um caso de conflito", *Ler História*, 34, (Lisboa, 1998), 71-77.

19 Teresa Rodrigues, *Crises de Mortalidade em Lisboa. Séculos XVI e XVII,* Livros Horizonte, (Lisboa, 1991), 76ff.

The tragedy of death became dramatically noticeable in places with higher population densities, leading to the common idea that mortality rates were higher in urban centres, and mainly in big cities, which was not always true. On the one hand, in some of those cases it was foreigners who died in cities. The existence of hospital institutions, charities, asylums and hospices attracted the poorer and sicker, some of which used to live outside the city. On the other hand, as cities were the abode of important and public figures, there was a link between social notability and the importance of death when it happened during a period of high mortality.[20]

Individual socio-economic conditions and place of residence determine the survival probabilities too. In urban centres, people would die more and very young, but there were differences between social groups. Lisbon and Porto's quarters enjoyed very different sanitary conditions. The noble areas would be occupied by the richest, whose diet and health would be better. In such quarters, the conditions to isolate and treat people affected by contagious diseases would be more adequate. As cities grew, the relation between immigration, poverty and mortality became closer, while the main epidemic diseases started to affect mainly the poor quarters, where the poor environmental conditions predominated. In rural areas, social differences were less apparent, and inequalities more likely to be due to differences in staple diets or exposure to environmental inclemency.[21]

Death would follow cyclic patterns. Each year, certain repeated circumstances would kill people belonging to certain age and social groups, usually in the same months as the year before. In rural areas, there were always two critical periods. The first one occurred during the winter, when cold and food shortage contributed to the rise of bronco-pulmonary infections. The second one went from July to September when victims were the younger. However, disease and the high prices of food spread the sudden rise of mortality rates at all ages. In urban centres, the relation between men and the environment was more complex. A great number of aspects contributed to change death's trends. The smaller proportion of children, as compared with the total number of inhabitants, was enough to diminish seasonal variations in death rates.

In 1800, the crude mortality rate (henceforth CMR) was higher in the south and in the interior regions of the country, although the higher fertility rates in these areas would make up for this disadvantage.[22] But internal differences diminished as

20 Those responsible for the report on Lisbon's yellow fever epidemic published in 1857 takes up this question. The report confirms that the most amazing fact was the death of some relevant persons of political, social and artistic scenes. (Teresa Rodrigues, "O quotidiano da morte no Portugal Moderno (séculos XVI-XVIII)", conference held in Lisbon in 1996, at the Universidade Lusófona).

21 Cf. Jorge Crespo, *A História do Corpo*, Difel, (Lisboa, 1990).

22 Fernando de Sousa, *A população portuguesa nos inícios do século XIX*. Dissertação de Doutoramento. Faculdade de Letras da UP, (Porto, 1979), 356.

the century progressed. At the beginning of the 20th century, such differences were of no consequence. What we cannot forget is that, until the end of the Second World War, infant mortality rates underwent cyclic fluctuations, due to the evil effects of some well-known contagious diseases that affected Portugal for much longer than any other European country.

It is impossible to ascertain the exact moment or place in which the decline of crude mortality rates took place for the first time, although it must have happened around the 1890s (table 3 in appendix). At the beginning of the 20th century, rates were moderate and stable, in spite of some conjuncture oscillations.[23] The decline was progressive, anticipating the fall in fertility rates, a fact that partly explains the positive population growth rates during the following decades. At first, the negative trend evolved slowly, and then it faster, leading to a substantial growth in life expectancy at birth. This last indicator increased from 38 years to 58 years between 1920 and 1950. The most relevant periods were already seen during the 1920s, and later, during the 1940s, in spite of the Second World War. From 1950 onwards, the crude mortality rate continued to fall and the advantages were significant, although the general process became progressively slower, as it approached the highest levels possible within an accelerated ageing structure. During the second half of the century, it raised from 58 to 77 years of age (table 4 in appendix).

The general advances towards survival in the case of Portuguese population are directly connected with the general rise of children's survival probabilities during the last hundred years. By 1900, approximately half of the children died before reaching the age of 15 and infant mortality rates hit 200‰, remaining very high up to the 1940s. Only by the middle of the century did mortality rates fall below 100‰, with a delay of 40 or 50 years in relation to more developed countries. The decline was significant after 1960, decreasing a 94% between then and 2001. 2001 shows the lowest rates of infant mortality, with only 5 cases of death as against 1000 births. The relative contribution of infant mortality to crude mortality rates changed during the last century. Around 1900, it represented 25.1% of total death rates; in 1995, no it just represented 0.8%.[24] Most of this decline can be explained by massive decrease in infectious diseases (table 5 in appendix).

As to children, the most lethal diseases were epidemics: smallpox, scarlet fever, whooping cough and measles, in particular. In some other cases, death was due to croups, diptheria, scrofula and cerebral hydrous. After the hazardous first years of life, the most usual death causes were typhoid fever, chest pains and inflammations of various organs, as well as pregnancy in the case of young women. The ageing process increased the danger of dying due to hydropxies, apoplexies, cancers and

23 Among which, reference should be made to the great epidemic crisis of 1918, which is the last proof of the old demographic regime. See Figure 1.

24 *Idem*, 84.

various kinds of unspecified inflammations. At the beginning and at the end of life, most death circumstances were linked to complications in the respiratory and nervous systems. By the end of the 1800s, precarious life conditions, economic working structures, public and private lack of hygiene account for the appearance of tuberculosis as a widespread, main death cause in high-density places.[25]

The decline in infant mortality can be attributed to the improvements in general health conditions, which is enhanced by systematic public health policies, which proved to be efficient; but also to changes in the social and economic conditions of Portuguese population that became clear in the last decades of the 20th century. The improvement of life standards for individuals over 70 is a later process, due both to better preservation of good health through economic, social and cultural factors, but also to medical progress in fighting certain pathologies, namely infections. Advances in life expectancy were moderate during the first half of last century, and very sudden in the last thirty years. While in 1900, Portuguese women lived less than 40 years; by the beginning of the 21st century they may live an average of 81 years, while men may live 74 years (table 4 in appendix). As these figures mounted up, the difference between sexes increased. In 1900, Portuguese women lived about three years more than men. In 1950, the advantage was five years and today it reaches seven years, although women from the south and urban women enjoy a smaller advantage. The augment in female average life expectancy is due to male high mortality in all the different age groups.

In the last decades Portugal has faced a process at the level of sanitarian and epidemic transition. This has contributed to reduce the importance of infectious pathologies, such as those affecting the respiratory and digestive systems. However, it has also led to the increase of degenerative pathologies, such as tumours and other problems linked to the circulatory system. The highest figures pertain to vascular failure. In 1960, circulatory system diseases and malignant tumours were responsible for 35% of all identified death causes, though in 2001, they came to represent 59.8%.

The relative importance of external factors (such as accidents, poisoning and injury) has increased (table 6 in appendix).[26] Road accidents deserve to be

25 In Porto, by 1900 and 1901, 17% of the deaths were attributed to tuberculosis, and this figure did not diminish until the end of the Second World War (João José Maduro Maia, "Padrões de mortalidade e transição sanitária no Porto", *População e Sociedade*, 1, (Porto, 1995), 237).

26 Maria da Graça Morais, *A transição da mortalidade e estruturas de causas de morte em Portugal continental durante o século XX*, Dissertação de Doutoramento em Sociologia, Universidade de Évora , I, (Évora, 1999), 263-300.

mentioned within this category, since they are responsible for one sixth of the deaths among men every year, which affect, specifically, men between 20 and 44.[27]

The slow conquest of survival is a result of the improved efficiency of primary medical care and of a wider and more efficient hospital network. It should be noted that the National Health Service (Portuguese *Sistema Nacional de Saúde*) was implemented between 1970 and 1981, period during which the most significant increase in life expectancy – up to 65 – took place (table 7 in appendix). The central tenets of change at the level of general life standards and health conditions that impact on the epidemic profile of the country and on life expectancy at all ages are connected to aspects of Portugal's recent history. These include the adoption of the democratic system that followed the revolution of 1974, which is linked to decolonisation of African territories and to the European integration (in 1986).[28]

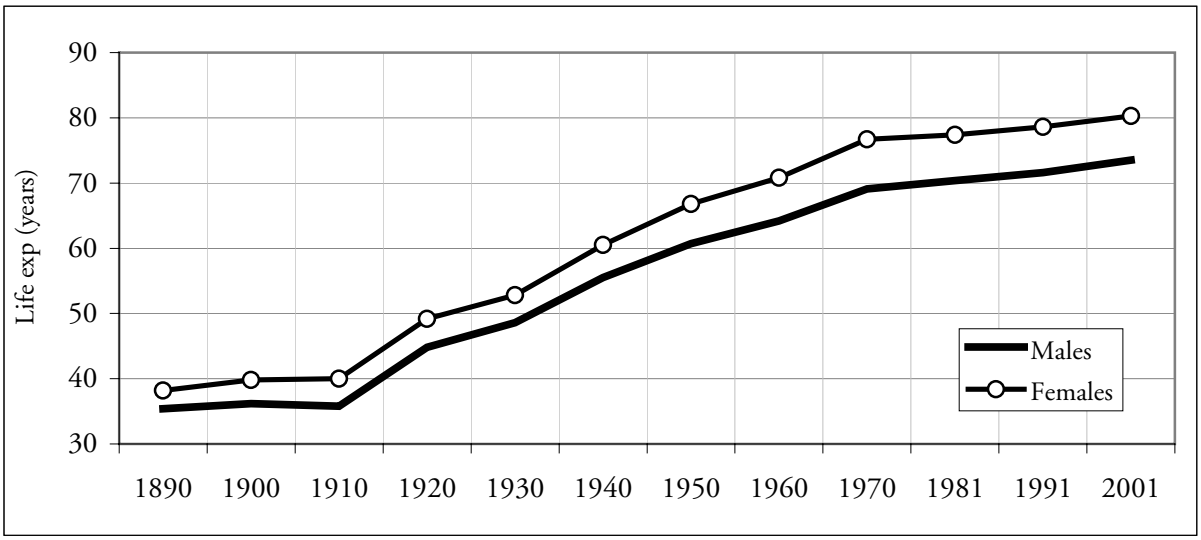
Therefore, we can conclude that, in the last hundred years, Portuguese population's crude mortality rate has unequivocally receded, in spite of regional differences and evolution pace. Still, infant mortality, which is the indicator that is traditionally a more accurate reflection of socio-economic conditions, remains high by European standards. Only by the 1960s was there a significant improvement of these rates. By 1995 they reached their lowest level, very close to northern and western European average. In recent years, statistics have registered a decrease in yearly casualties due to respiratory, infectious and parasitic diseases, accidents, cirrhosis and liver pathologies, although figures continue to be high for European standards.

Another delicate issue is that of the high percentage of deaths that continue to be classified "signs, symptoms and badly defined morbid states". These were the main death cause for the age groups ranging 1 to 4 and 45 to 54, and still occupying the third place in the table of mortality causes, in 2000. The analysis of the epidemic transition process in Portugal has to take into account the importance that infectious and parasitic diseases still have in the country and the inability to identify some of the death causes. Should these became known, would Portuguese mortality patterns be understood differently?

27 Paula Santana, Helena Nogueira, "A esperança de vida em Portugal", *Cadernos de Geografia*, 20, (Coimbra, 2001), 11.

28 A study about social and economical variations of mortality, between 1980 and 1990, justifies the decrease of mortality among manual and factory workers during that decade by improving their life standards after the revolution of April 1974. They had better salaries, better working conditions and occupational health care. (Mª do Rosário Giraldes, Ana Cristina Ribeiro, "Desiguladades socio-económicas na mortalidade em Portugal, no período 1980/82-1990/92", *Documento de Trabalho 3/95*, Associação Portuguesa de Economia da Saúde, (Lisboa, 1995).

Figure 2. Life expectancy at birth for men and women in Portugal 1890–2001.



Source: Estatísticas Demográficas, INE, Lisboa, 1890–2001; IVº–XIVº Recenseamentos Gerais da População Portuguesa, INE, Lisboa, 1890–2001.

The Portuguese mortality model fits in the South–European mortality model, despite showing some particularities connected to the country's recent political and social history. One of these relates to the variation of life expectancy between Portuguese men and women, despite the considerable gains of the last three decades. Within the European Union, Portugal has the lowest life expectancy at birth. It is also the EU country whose life span has extended the most in the last 45 years. Between 1950/55 and 1990/95, in Portugal, the increase was of 13,9 years for men and 16,2 for women (figure 2).Between 1970 and 1995, there was an increase rise in the difference of life expectancy between men and women.[29] Thus, if men who were born in 1970 could expect to live 64.2 years and women 70.8 years, in 1995, those values rose up to 71.6 and 78.6, respectively (table 4 in appendix). These differences between sexes are not exclusive to Portugal and can be explained by the higher mortality rates for men at all ages. Portuguese men die prematurely and lose more years of life due to vehicle accidents,[30] liver cirrhosis, brain damage, cardio-vascular disease and infectious and parasitic diseases (table 8 in appendix) . HIV/AIDS was the second death cause in the case of men between 25 and 34 and

29 Ana Fernandes, *Velhice e Sociedade*, Celta Editora, (Lisboa, 1997), 49.

30 Between 1981 and 2000, approximately 78% of these death causes affectted men (Maria José Carrilho, "Situação demográfica recente em Portugal", *Revista de Estudos Demográficos,* INE, (Lisboa, 2002), 164.)

the third for the 35 to 44 year-olds during the 1990s,[31] rating among the highest figures in the EU.[32] If we consider the total amount of 'avoidable' deaths (between 1989 and 1993), i.e. those that happen before 64, for a sample of one hundred and thousand inhabitants, 77.4 women died, as against 170.2 men.[33]

Improvements in Health Services

An important explanatory factor for the remarkable improvements in life expectancy has been the improved access to good quality health services. The last 30 years have witnessed a sustained effort to improve medical care and the health of the Portuguese. Specific measures included a rise in health care funding, the expansion of health care services – at the level of institutions and at the level of acquisition of new information and medical technologies, wider access to medication and continual efforts to optimise the organization and management of the National Health Service.

During the first half on the 20th century, health care was restricted, fee-paying, and hospital institutions were few and most of them had many deficiencies. After the Second World War, in 1946, a federation of Pensioner's Funds (Portuguese *Federação das Caixas de Previdência)* was created, offering a complete system of medical and health care to its associate members. In time, other measures followed, which led to the creation of several subsystems, increasing the different access modalities to health care.

By the beginning of the 70s, during the so-called *marcelista spring,*[34] under Marcelo Caetanos' rule and under the motto "health as everyone's right", a network of Medical Centres was proposed. Primary health care in medical centres began in 1971 striving to respond to public health needs: vaccination, antenatal care and childcare, as well as campaigns connected with sanitation and environment.[35] These services were meant to prevent and give professional support to some groups at risk. This was undoubtedly a big step forward in Portuguese health care assistance, with direct consequences on general demographic mortality indicators.

31 De que se morre mais em Portugal. As principais causas de morte em Portugal de 1990-1990, Observatório Nacional de Saúde, (Lisboa, 2003).

32 Paula Santana, Helena Nogueira , "A esperança de vida em Portugal", *Cadernos de Geografia*, 20, (Coimbra, 2001), 10.

33 Paula Santana, "A mortalidade *evitável* em Portugal Continental, 1989 a 1993", *Revista de Estudos Demográficos,* INE, (Lisboa, 2002), 112.

34 "Primavera marcelista" is the political name given to Marcelo Caetano's first years in the government.

35 A. G Branco e Vítor Ramos Branco, "Cuidados de saúde primários em Portugal", *Revista Portuguesa de Saúde Pública*, (Lisboa, 2001)

Unfortunately, the implementation of the network system was slow, never achieving more than half of the intended goals. In the field of hospital care and global management, the Misericórdias, private charity institutions, continued to play an important role since they owned all local and regional hospitals, a central hospital, and a few specialized places for the treatment of specific diseases.[36]

Thus, the Portuguese health care system was fragmented. It consisted of state hospitals, *Misericórdia* hospitals, medical centres, social and medical care centres for subscribers (Portuguese *Serviços médico-socias da Previdência*), municipal doctors, maternal and infant care support services against tuberculosis, among others. Till the mid-1970s, actions were directed against specific diseases (such as tuberculosis and those that could be prevented through vaccination) among population groups at risk (such as children and mothers).

The Revolution of 1974 propitiated the necessary political conditions for the creation of a thorough Health National System (NHS),[37] to which all citizens had a right, which was state funded and covered the whole country, and which was enacted as law and included in Portugal's Constitution of 1976. The main implications of this new right to health care was clearly emphasized by the transfer of all the *Misericordia* hospitals to the public domain, as well as by the integration of all the already existing health sub-systems into the NHS.

The National Health Service Bill (1979) guaranteed the access of all citizens, regardless of their social or economic situation, to medical and health care. A later revision of the constitution in 1989 changed 'free' medical care to 'tendentially free'. The new bill signalled that funding for health care was to be obtained from the government's general budget instead of from social funds.[38]

From 1983 on, a new branch of medical studies was created, that of General Practitioner, and, at the same time, new medical centres were opened as a result of the fusion of several social care institutions with a view to using available resources in a more efficient way. By the mid-1980s, the NHS inability to suitably respond to the increasing demands, and the financial problems that the system was facing, gave rise to the conditions for the development of a prosperous private health care market that would expand very quickly during the following years. However, universal access to health care, supposedly free of charge, was still guaranteed to all

36 Paula Cristina Almeida Remoalda, A morbilidade e a mortalidade infntil em territórios. Amostra do distrito de Braga – desigualdades territoriais e sociais, Tese de Doutoramento na Universidade do Minho, (Braga, 1998),98

37 The phases of implementation and expansion of the Health System in Portugal were the following: before 1970, from the beginning of the 70s to 1985 – implementation and expansion of the health care system -, from 1985 to 1995 – rationalization and assignment of new roles to the private sector - and from 1995 to 2002 – a new public management for the Health system.

38 Observatório Português dos Sistemas de Saúde (OPSS), www.observaport.org

Portuguese citizens. The hospital network system expanded through the whole of the national territory and several new hospital institutions were built in order to guarantee reasonable access to all people.

However, the well-meant reforms were frequently left incomplete due to management problems, resistance to change or policy discontinuity. Throughout this period, substantial changes took place, even though the same political party and the same Prime Minister continued in charge. Despite the huge progress, Portugal still illustrates insufficient and unequal access to health care.[39]

Conclusion

The national public health system aims to accomplish two main goals or challenges, which will end with all internal differences and increase life expectancy. As to the first goal, public health policies have to keep geographic diversity in mind, taking into account factors such as place of residence and distance from the health care institutions or specialized personnel. Social and/or economical differentiation is another aspect to consider, as it involves better and quicker treatment as well the economic capability to search for better assistance abroad. The goal must be to guarantee equal access to health care, the increasing efficiency of the sanitary system as well as uniform information levels, based on more active preventive attitudes, premature deceases, healthier life habits (towards consumption of alcohol, smoking, and physical activity) and healthier staple diets (mainly at the informative level, telling people what is best to keep in good health and what should be avoided, changing their mentality).

The second goal is to increase the life expectancy of the whole of Portuguese population. Three aspects should be taken into account to achieve it. The first is related to biological boundaries, i.e. the maximum age up to which we can expect to live with quality; the second is linked to the reduction of endogenous causes of persisting diseases and death. The third seeks to guarantee life quality among the elderly. All this requires adequate equipment strategies: health centres, schools/ professional schools, and pensioners' homes/home assistance. It also requires the existence of groups with specialized qualification in this area, such as physiotherapists, professional instructors, educators for children with special needs and geriatric specialists. Flexibility between the labour market and the social security system is still the *hottest point* of discussion between government, unions and employers (superannuation, proposing new age limits to stop active life, and a

39 Miguel Pereira, M., J, Bugalho, "Economia da Saúde: novos modelos", *Análise Social*, 166, XXXVIII, (Lisboa, 2003).

second professional life, which implies the reinforcement of new strategies (occupations related to community support activities: taking care of children or gardens, transmitting the cultural heritage).

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Tables

Table 1. Phases of differential growth.

Inter-census periods*	Population		Annual average growth rate
	Beginning of period	End of period	
1801–1851	3115330	3844119	0.42
1851–1917	3844119	6164018	0.72
1917–1920	6164018	6080135	-0.46
1920–1945	6080135	8200913	1.20
1945–1974	8200913	8373508	0.07
1974–1976	8373508	9010160	3.73
1976–1993	9010160	9803869	0.50
1993–2001	9803869	10355824	0.69

Source: Iº to XIVº Recenseamentos Gerais da População Portuguesa, 1867–2002.

Commentary: 1801–1851 – period of social and political instability, civil war and three French invasions; 1851–1917 – economic (industrial and urban) development, decline in mortality levels; 1917–1920 – critical period (war, emigration, Spanish flu); 1920–1945 – population growth is due to differences between mortality and fertility levels, this last one still high; 1945–1974 – emigration stands as the most important variable and influences global population growth; 1974–1975 – democratic revolution brings 500 thousand people from African colonies and Europe; 1976–1993 – major changes in demographic behaviours; 1993–2001 – Portugal became an positive migratory country.

* Estimated population 1917 = Census population.1911 + annual average growth rate.0.78 (1912, 1913) + annual average growth rate 0.39 (1914, 1915, 1916) = 6164018.

Est. pop. 1945 = Census population 1940+1950/2+ correction of null migratory balance (+68081) = 8200913.

Est. pop. 1974 and 1976 = Census population.1970+ annual average growth rate 1970/81(this procedure leads to an over-evaluation error, due to a lower trend of physiological balances) + 500 thousand ex-colony inhabitants = 8 373 508. The decade's median growth rate was levelled in order to obtain the probable population in 1976 = 9 010 160.

Est. pop. 1993 = Census population 1991 + physiological balances (1991/92) + migratory balances (1991/92) = 9803869.

Table 2. Annual natural population growth rate (NR), total population growth rate (TR) and net migration (NM) in Portugal in the 20th century (%).

Inter-census periods	NR	TR	NM
1900–1911	1.20	0.86	-0.34
1911–1920	0.79	0.14	-0.65
1920–1930	1.26	1.24	-0.02
1930–1940	1.15	1.24	0.09
1940–1950	1.05	0.89	-0.16
1950–1960	1.22	0.48	-0.74
1960–1970	1.15	-0.21	-1.36
1970–1981	0.85	1.29	0.44
1981–1991	0.34	0.03	-0.31
1991–2001	0.08	0.45	0.37

Source: Estatísticas Demográficas, 1968, p.LXX e XIº to XIVº Recenseamento Geral da População Portuguesa, 1970,1981,1991 e 2001.

Table 3. Crude death rates in Portugal in the 19th century (‰).

Years	Crude mortality rate
1801	30.3
1838	20.8
1843	20.8
1849	25.0
1850	22.7
1862	23.5
1975	24.1
1890	25.5
1895	20.8
1900	20.5

Source: IVº Recenseamento Geral da População.

Table 4. Main indicators of mortality levels in the 20th century.

Years	CMR	IMR	EoM	EoF	AVR(M)	AVR(F)	E0 (M-F)
1890	25.5	> *200*	35.4	38.2	–	–	2.8
1900	20.5	> *200*	36.2	39.8	2.21%	4.02%	3.6
1920	23.7	161.0	35.8	40.0	-1.12%	0.50%	4.2
1930	17.1	143.6	44.8	49.2	20.09%	18.70%	4.4
1940	15.9	126.1	48.6	52.8	7.82%	6.82%	4.2
1950	12.2	98.0	55.5	60.5	12.43%	12.73%	5.0
1960	11.0	83.5	60.7	66.8	8.57%	9.43%	6.1
1970	10.9	51.3	64.2	70.8	5.45%	5.65%	6.6
1981	9.7	24.3	69.1	76.7	7.09%	7.69%	7.6
1991	10.6	10.8	70.4	77.4	1.85%	0.90%	7.0
1995	10.8	6.9	71.6	78.6	1.68%	1.53%	7.0
2001	10.2	5.0	73.5	80.3	2.59%	2.12%	6.8
2002	10.2	4.9	73.7	80.6	0.27%	0.37%	6.9

Source: IIIº a XIVº Recenseamentos Gerais da População Portuguesa, 1893–2002; Estatísticas Demográficas, 1891–2002.

Commentary: *CMR* (crude mortality rate): deaths/1000 pop; *IMR* (infant mortality rate): deaths at 0 years/1000 births; *EoM* and *EoF* (expectancy at birth for Male and Female): number of years; *AVR(M)* and *AVR(F)* (variations between periods for Male and Female): *EoM* (1890–1900)/100 and *EoF*(1890–1900)/100; *Eo(M-F)* (differences in life expectancy at birth between Male and Female): number of years.

Table 5. Infant mortality rate (‰).

Years	Endogenous IMR	Exogenous IMR
1960/61	15.7	67.5
1970/71	17.1	36.6
1980/81	13.1	10.0
1990/91	6.1	4.8
2000/01	2.7	2.6

Source: Anuários Demográficos (1960,1961) and Estatísticas Demográficas (1970 to 2002).

Commentary: *Exogenous IMR*=death caused by infectious diseases and external causes; *Endogenous IMR*= death caused by non-communicable diseases and physical problems in the first 27 days of life.

Table 6. Main Death Causes (%) in Portugal 1930–2000.

Causes of death	1930	1950	1990	2000
Circulatory system	15.5	21.9	44.2	38.9
Tumours	2.7	4.9	18.0	20.9
Respiratory system	9.4	15.9	7.2	9.8
External causes	2.4	2.7	6.5	5.4
Digestive system	14.2	9.2	4.5	3.9
Endocrinal and metabolic dis.	0.0	0.0	3.1	4.5
Infectious diseases/AIDS	23.6	18.8	0.9	2.7
Non specified in official statistics	32.2	26.6	15.6	13.9

Source: Maria da Graça Morais, *A transição da mortalidade e estruturas de causas de morte em Portugal continental durante o século XX*, Dissertação de Doutoramentoem Demografia, Universidade de Évora , Évora, 1999; António Barreto (org.) *A situação social em Portuga, 1960–1995*, Lisboa, ICS, 1996; *Elementos Estatísticos Informação Geral. Saúde/2003*, Lisboa, Direcção-Geral de Saúde, 2003

Table 7. Life Expectancy at 65, for men and women in Portugal 1930–2001.

Years	Males	Females	Differences	AVR(M)%	AVR(F)%
1930	11.47	13.09	1.62	–	–
1950	12.35	14.35	2.00	0.384	0.481
1970	12.20	14.65	2.45	-0.061	0.105
1981	14.36	17.95	3.60	1.762	2.253
1991	14.83	18.39	3.56	0.334	0.245
2001	15.55	19.01	3.46	0.485	0.337

Commentary: *AVR(M)* and *AVR(F)*= variations between periods for Male and Female: EoM (1930–1950)/100 and EoF(1930–1950)/100.

Table 8. Loss of years of life, by sex and specific causes of death, in Portugal (per 100,000).

Causes of Death	1990		1995		2000	
	Males	Females	Males	Females	Males	Females
All causes	*9143*	*4436*	*8397*	*3692*	*7072*	*3141*
Tumours	1250	953	1203	872	1191	824
Endocrine and metabolic diseases	222	112	655	196	547	187
Diseases of the circulatory system	1182	553	1028	442	855	366
Diseases of the digestive system	518	189	460	156	363	134
Diseases of the respiratory system	407	206	306	113	252	104
HIV/AIDS	85	14	552	105	451	108
External Causes	*2774*	*779*	*2280*	*628*	*1560*	*390*
Road accidents	1390	340	1210	309	654	141
Suicide	257	78	202	76	115	27

Source: *Elementos Estatísticos Informação Geral. Saúde/2003*, Lisboa, Direcção-Geral de Saúde, 2003.

Commentary: Loss of years is used as an indicator that tries to estimate how many years in total life expectancy are lost by all Portuguese population due to the impact of these specific diseases.

Health Care and Social Change in the United States
A Mixed System, A Mixed Blessing

Bruce Fetter

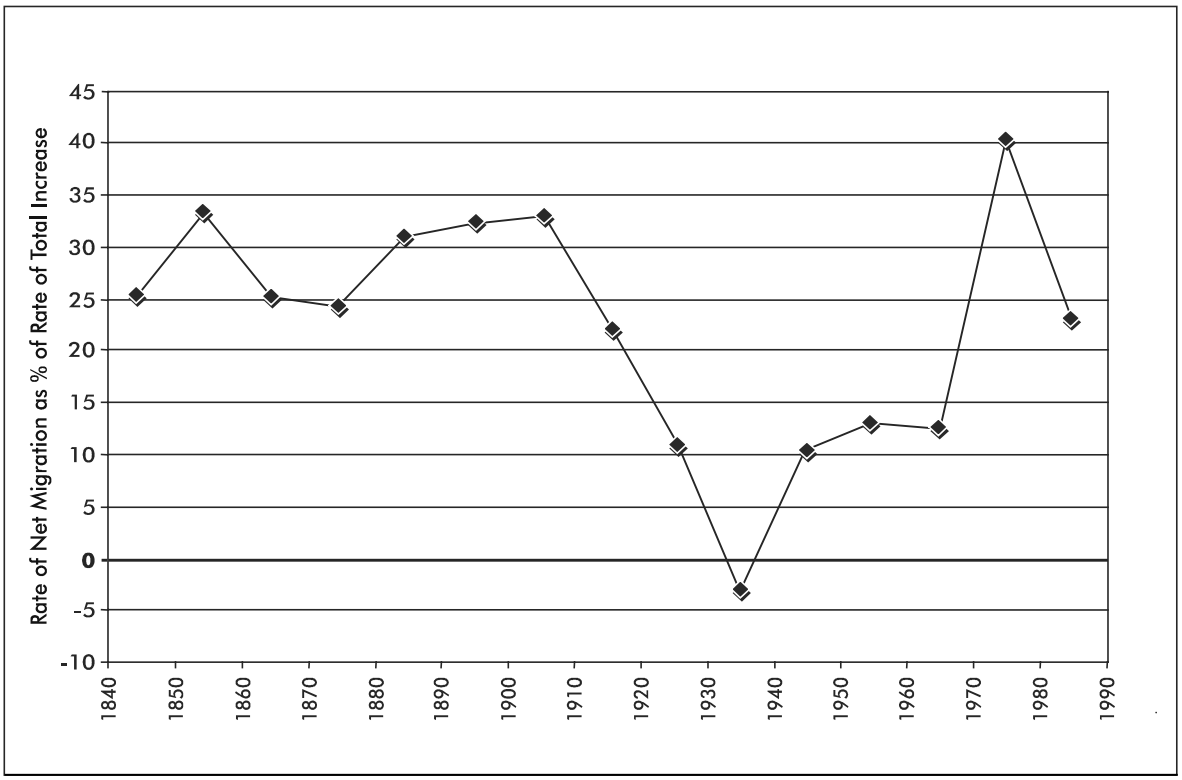
For most of human history, the health of any society did not depend much on its biomedical healing system. Physicians could cure or assuage a limited number of conditions, but not until the late 19th century did medicine have a sufficient grounding in experimental science to allow the systematic treatment of disease. Indeed, in 1880, when the United States entered what is commonly known as the mortality transition, its biomedical establishment was weaker than those of most nations in Western and Central Europe. In order to understand changes in the health of Americans, one must consider medical factors as well as political and cultural ones. Indeed, the importance of non-biomedical considerations has persisted to the present in American health.

This essay will analyze the relationship between health and society in the United States over two long periods, from 1880 to 1930 and from 1930 to the present. It will identify those forces that contributed to better health and longer life as well as those problems that had to be addressed. The paper will also consider inequalities in health among Americans. On the basis of these generalizations, the U.S. experience can be made comparable to that of other countries.

Transition America, 1880–1930

The United States entered the demographic transition in the 19th century. Fertility levels began to fall early in the century, but mortality levels did not consistently decline until the 1880s. On the surface, America's mortality decline was the product of the country's social assets By 1880 the United States was one of the wealthiest countries in the world, where even unskilled workers could earn food and shelter more easily than in their European former homelands. It was a democracy in which all adult men had the right to vote. Its traditions of freedom of association led to the establishment of fraternal organizations which offered their members

Figure 1. Increases from international migration as percent of total increase by decade 1840–1990.



Source: Haines and Steckel, 2000, p 700.

insurance to cover the costs of death and disability. On the negative side of the side of the balance sheet, however, lay a series of obstacles to be overcome. America's industrial cities were every bit as polluted as those of Europe. It lacked a highly trained medical profession. Its constitutional system raised substantial barriers to government action in health care. Finally, its society was riven along lines of race, region, and gender.

Before proceeding to the specifics of the health of Americans, let us explore its social setting. America's wealth has always made it a magnet for migration. Immigration has exceeded emigration for all decades in U.S. history except for the 1930s. Between 1840 and 1920, net migration accounted for well over a quarter of total population increase.[1] One can only conclude that immigrants came to the United States because life there was better than at home.Voluntary associations played an important role in the efforts of Americans to protect their lives and health. Perhaps, as Robert Putnam[2] suggests, U.S. civic engagement has served as an

1 M. R Haines and R. H. Steckel, *A Population History of North America* (Cambridge, Cambridge University Press, 2000), 700, Table A.2

2 Robert Putnam, *Bowling Alone: The Collapse and Revival of American Community,* (New York: Simon & Schuster, 2000).

alternative to "passive reliance on the state". Civic associations, by providing their members with social capital, could have played a key role in the reduction of mortality levels that took place between 1880 and 1930. David Beito[3] has shown that during the late nineteenth century, a number of fraternal organizations such as the Eagles, Moose, and Foresters collectively hired doctors to care for their members, and, in the case of the Moose, members' families. This "lodge practice" was comparable to the medical services provided by friendly societies in England.[4] Unfortunately for the American fraternal associations, however, the U.S. medical profession attacked these collective contracts, belittling the doctors who accepted them as ignorant and unprofessional.[5] These attacks occurred at the time of the great reform of U.S. medical training which roughly coincided with World War I.[6] The fraternal associations, with the exception of those for black people in New Orleans, abandoned lodge practice, leaving their members to arrange for medical treatment individually. In addition, Beito shows that the fraternal associations suffered two further blows during the Depression. Unemployed members could no longer afford to pay their dues. The enactment of the Social Security Act of 1935, moreover, deprived them of their insurance clientele, because the federal government began to provide the social insurance that had previously only been available through private vendors such as the fraternal associations and commercial insurance companies.

In contrast to America's material and organizational wealth, other late 19th century social realities militated against longer life. The first was the abysmal condition of American cities described by Haines[7] as "virtual charnel houses." Urban political leaders embarked on extensive public works to clean up the microenvironment. The task proved too great for politicians alone; they found that they needed effective local bureaucracies and trained technicians, especially engineers and doctors to build a health-promoting infrastructure. The major causes of death were water-borne diarrheal diseases.[8] Scientists, even before they could

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3 David Beito, From Mutual Aid to the Welfare State: Fraternal Societies and Social Services, 1890–1967 (Chapel Hill, University of North Carolina Press, 2000).

4 J. C. Riley, *Sickness, Recovery, and Death* (Iowa City, University of Iowa Press, 1989); H. Southall, 'Ageing, health and ending with: A study of life cycle and life chances among 19th century British artisans'. Presented to the International Congress of Historical Sciences, Beijing, 1995.

5 Beito, (2000).

6 K. M. Ludmerer, *Learning to Heal: The Development of American Medical Education* (New York, Basic Books, 1985).

7 M. R. Haines, 'The urban mortality transition in the United States, 1800–1940', *Annales de démographie historique,* 2001–1:33–64, (2001), 37.

8 E. Meeker, 'The improving health of the United States: 1850–1915', *Explorations in Economic History*, 9 (1972), 353–373; E. Meeker, 'The social rate of return on investment in public health, 1880–1910', *Journal of Economic History*, 34 (1974), 392–421; G. Condran,

draw a definitive link between microorganisms and disease, recognized that polluted waters were poisoning American cities. They therefore embarked on massive public works that built an infrastructure of reservoirs for filtering water, pipes for distributing it, sewers to remove liquid waste, and dumps to receive solid waste. These public works in turn reduced the incidence of water- and insect-borne diseases in urban areas, allowing the survival of babies who would otherwise have died.

Unfortunately, the U.S. medical profession of the 1880s, although relatively large in numbers, had little capacity to deal with Americans' health problems. Unlike the more settled societies of Europe, Americans did not inherit a sound system for the training of doctors. Most American physicians were trained at proprietary schools of medicine whose instruction lasted less than a year. As late as 1904, Americans were spending roughly four times as much on patent medicines as they were on physicians.[9] The first modern medical school, Johns Hopkins, did not open until 1893, and scientific standards of medical education were not generally established until the Flexner report of 1910, which forced one-fifth of the nation's medical schools to close their doors.[10] The proportion of physicians per 100,000 population actually dropped by nearly a third from 171 in 1880 to 125 in 1930.[11] The new physicians were usually trained in university hospitals that established high standards for patient care and medical education.

The transformation of U.S. medicine in the early twentieth century differed from that of European states, however, in a fundamental way. In Europe, state agencies – monarchs, parliaments, and universities – played a central role in the establishment of scientific medicine. In the United States, by contrast, the central government's role was relatively minor. This inaction was deeply rooted in American political practice. The 1787 constitution calls for a separation of powers between the federal government and the states, which retain sovereignty in all matters not expressly

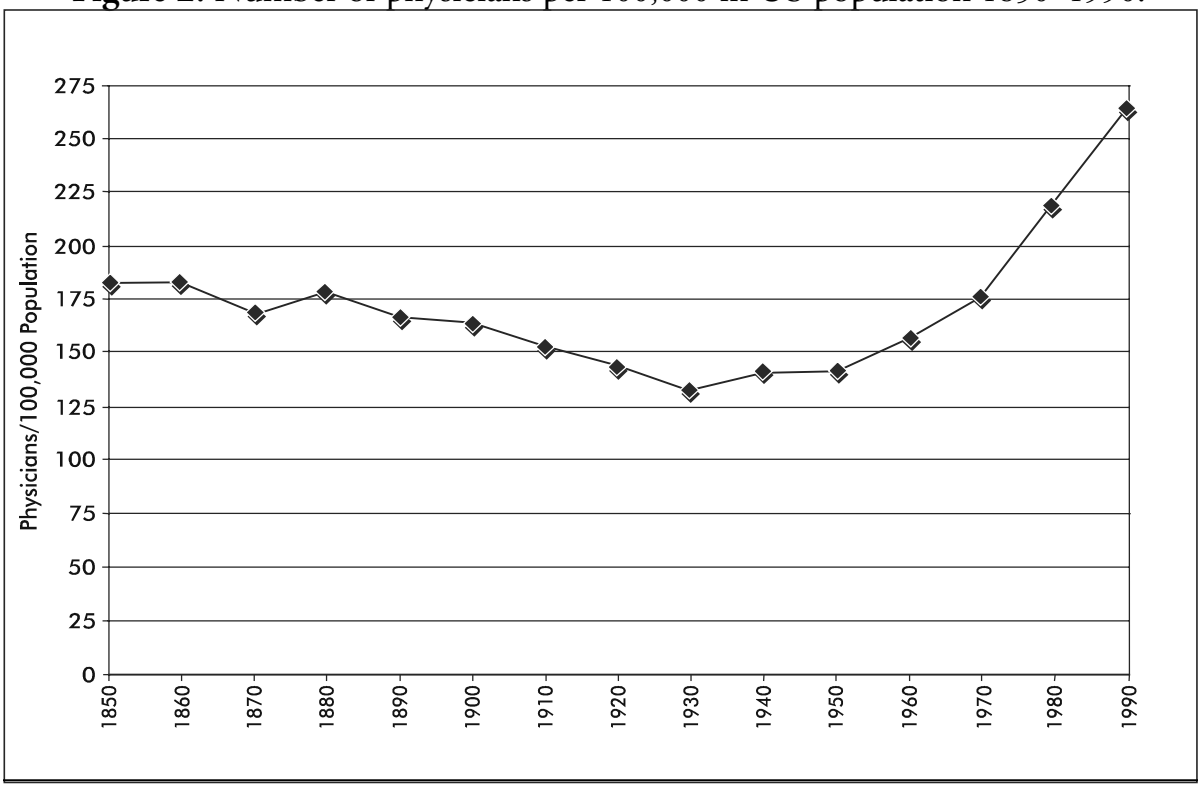
'Declining mortality in the United States in the late nineteenth and early twentieth centuries', *Annales de Démographie Historique*, (1987), 119–141; M. V. Melosi, *The Sanitary City: Urban Infrastructure in America from Colonial Times to the Present* (Baltimore, Johns Hopkins, 2000); L.P. Cain and E. J. Rotella, 'Death and spending: Urban mortality and municipal expenditure on sanitation', *Annales de démographie historique*, 2001–1, (2001), 139–154.

9 Calculations based on J. H. Young, *The Toadstool Millionaires: A Social History of Patent Medicine in America before Federal Regulation* (Princeton, Princeton University Press, 1961), 176; Ludmerer, (1985), 178; P. Starr, *The Social Transformation of American Medicine* (New York, Basic Books, 1987), 142.

10 Ludmerer, (1985).

11 *Historical Statistics of the United States: Millenial Edition* (Preprint, Cambridge, Cambridge University Press, 1999), Table A25.

Figure 2. Number of physicians per 100,000 in US population 1850–1990.



Source: Historical Statistics of the United States: Millenial edition, 1999 preprint Table A25.2.

delegated to the central government.[12] In addition to slavery, the Civil War of 1861–65 was fought over the rights of the states. Even though the Southern states, which had sought to secede from the Union, had been defeated militarily, a strong element of suspicion of the federal government remained in North as well as South. In the 1870s, Southern states resisted federal efforts to combat a yellow fever epidemic;[13] as late as the 1920s, Massachusetts refused federal money for poor women and children on the grounds that such payments were subversive of the state's authority.[14]

The federal government was, when compared to its European counterparts, extremely slow to act in health matters. Congress did not pass a general national quarantine law until 1893. The Public Health Service did not emerge as a separate agency until 1912.[15] Most American health expenditures were in the private sector. The first systematic inquiry into national health expenditures reveals that

12 R. Apple, *Reaching Out to Mothers: Public Health and Child Welfare*. Evening Lecture Series 5 (Sheffield, European Association for the History of Medicine and Health Publications, 2002).

13 M. Humphreys, *Yellow Fever and the South* (Baltimore, Johns Hopkins, 1992).

14 B. G. Rosenkrantz, *Public Health and the State: Changing Views in Massachusetts* (Cambridge MA, Harvard, 1972).

15 F. Mullan, *Plagues and Politics: The Story of the United States Public Health Service* (New York, Basic Books, 1989).

Americans in 1929 were spending a respectable 3.4% of the GDP on health, but the government's share was only 13.9% of that total, most of it by states and localities for mental and tuberculosis hospitals. A full 86.1% came from private sources.[16]

Despite these many deficiencies, the health of Americans improved substantially in the period between 1880 and 1930. A tabulation of these improvements, however, shows that some Americans benefited more than others. Let us begin with the issue of mortality. Haines[17] offers two measures of mortality, life expectancy at birth [e0] the Infant Mortality Rate [IMR], calculated as a ratio of infant deaths per thousand live births per annum. For white men, the life expectancy rose from 40.5 years in 1880–84 to 60.9 years in 1930, while that for black men rose from somewhere in the mid-thirties to 48.5 in that same period. Disparities between the life expectancies of the two groups actually widened to the point that whites at birth had a life expectancy that was 25% longer than blacks.

Similar trends can be found in the Infant Morality Rate. That for white infants fell from 214.8 per thousand in 1880 to 60 in 1930; that for black infants fell from approximately 230 in 1880 to 99.0 in 1930.[18] Even at the end of this period, black infants in their first year were 50% more likely to die than white ones.

U.S. racial categories are not the only ones subject to disparities. Geography also made a difference. At the turn of the century, rural white males had a life expectancy at birth ten years longer than that of urban white males, a discrepancy that fell to 2.6 years in 1940. Nearly three-fourths of the difference between rural and urban life expectancy disappeared in the first four decades of the twentieth century.

Another factor affecting life expectancy was gender, but during the early years of the century it became more pronounced. In 1900 white women's life expectancy was 3.7 years longer than that of white men; by 1940 the discrepancy rose to 5.2 years. As far as Infant Mortality Rates are concerned, urban boy babies in 1900 experienced a reported mortality rate nearly fifty percent higher than that of girls: 151.0 per thousand as opposed to 101.0. By 1930 the gap had declined substantially; boys' rate stood at 69.9 per thousand versus girls' 55.2.[19]

Country of birth also played a changing role in mortality. Native-born white men and women tended to experience lower mortality levels than foreign born. The standardized death rates for native-born white men [between the ages of 25 and 64 calculated from statistics derived from industrial insurance policies sold to working

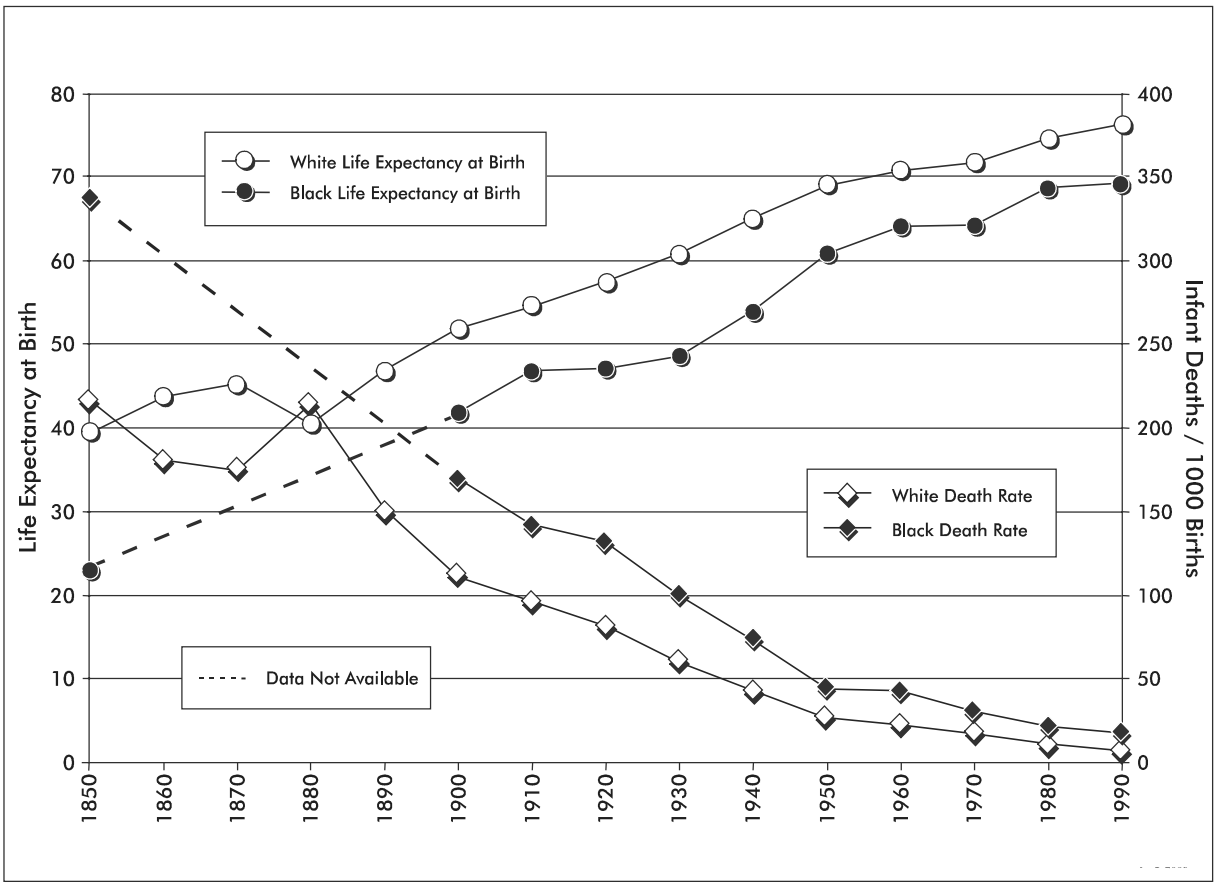
16 Based on Committee on the Costs of Medical Care 1932, *Medical Care for the American People* (Chicago, University of Chicago Press), 14, 52; and retrospective GDP estimates.

17 M. R. Haines, 'The white population of the United States, 1790–1920', in *A Population History of North America*, Haines and Steckel (2000), 308.

18 Haines and Steckel, (2000), 696–699.

19 Haines, (2001), 46, 52.

Figure 3. US black and white life expectancy at birth and infant mortality rates 1850–1990.



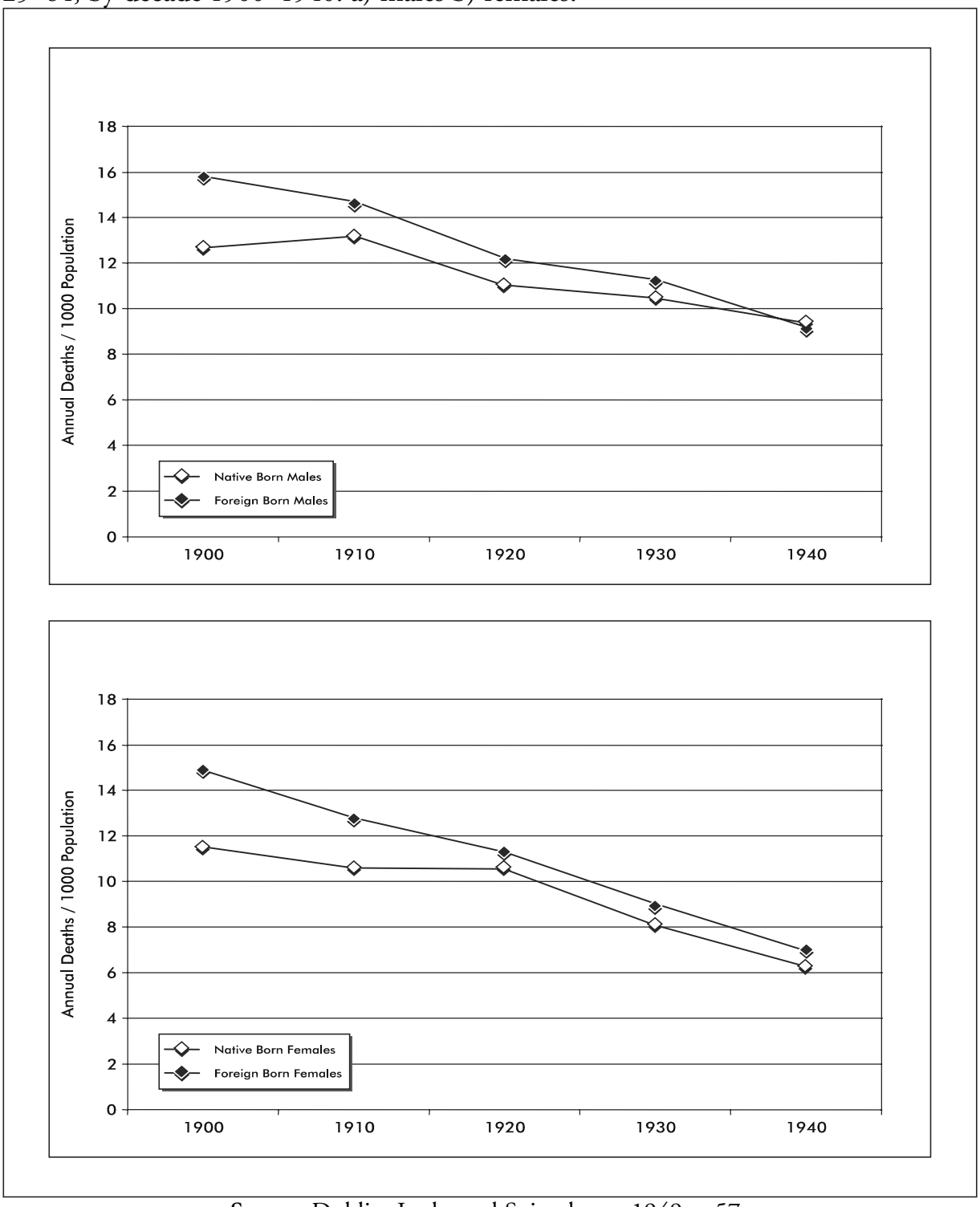
Source: Haines and Steckel, 2000, p 696.

class Americans] was 12.7 per thousand as opposed to 15.8 per thousand for foreign born men. By the same measure, the rate for native born white women was 11.5 per thousand compared with 14.9 for foreign-born women. Thus, foreign-born adults experienced mortality levels roughly twenty percent higher than those of native born whites. All groups' mortality fell over the next forty years: native born men had a mortality rate of 7.9 per thousand while that for foreign men was 8.1. The mortality rate for women in 1940 was lower still: native born had a mortality rate of 6.3 per thousand while that for foreign born was 7.0. In effect, the gender gap proved more durable than that of national origins.[20]

Latinos, an immigrant group that would by the end of the century become a significant proportion of the U.S. population, did not initially share this convergence with the native-born population. In 1910, they constituted a little over one percent of the total population. Exact numbers are difficult to come by, because the population was enumerated by race and not by native language. Recent studies

20 L. I. Dublin, A .J. Lotka and M. Spiegelman, *Length of Life: A Study of the Life Table* (New York, Ronald Press, 1949), 57.

Figure 4a–b. Standardized death rates per 1000 for native and foreign born, ages 25–64, by decade 1900–1940. a) males b) females.



Source: Dublin, Lotka and Spiegelman, 1949, p 57.

have shown that at that time the mortality of their infants was more than 50% higher than that of whites, roughly the same as that for blacks. The disparity between Latinos and non-Hispanics remained at this same order of magnitude to the end of the 1930s.[21]

Let us now discuss the reasons for these discrepancies of race, gender, urban residence, and country of birth. Conditions improved for all groups; on the average, they lived longer in 1940 than they did in 1880. By 1940 some gaps had closed. City-dwellers were living almost as long as rural people. The life expectancies of the foreign-born were catching up to those of the native-born, as were those of boy babies compared with those of girl babies. Haines[22] represents the consensus in attributing (urban) mortality reduction to "significant public works improvements and advances in public health and, eventually, medical practice." In other social groups, however, disparities persisted. Blacks and Latinos lived less long than whites, and women were outliving men by increasing margins.

The causes of these changes in relative privilege were not necessarily the same for all categories. Let us first consider race, that canyon dividing American society. The twenty-year increase in life expectancy enjoyed by white Americans in only sixty years is nearly unique in demographic history. White and Preston[23], by projecting the effect of various mortality rates, conclude that almost all of the improvement in life expectancy between 1900 and 1930 can be attributed to lower death rates for infants and young children.

But did mortality decline among white infants for the same reasons as among black ones? After all, during those years they did not live in the same regions: whites were more likely to live in the urbanized North, while blacks were concentrated in the rural South. The complication here was that although rural areas were healthier than cities, Southern rural areas were far less healthy than northern ones. The American South lived under a heavier disease burden than the North, because it was subject to diseases which survived better in semi-tropical environments than in temperate ones: malaria, yellow fever, and hookworm in particular.

Urban areas, moreover, had better access than the countryside to the new generation of university-trained physicians. City children had greater access both to physicians and to public health officials. These groups became agents for the administration of vaccines to prevent disease. Early tangible evidence of this came

21 Myron P. Gutmann et al., 'Intra-ethnic diversity in Hispanic child mortality, 1890–1910', *Demography* 37,4 (2000), 467–475; D. Forbes and W. P. Frisbie, 'Spanish surname and Anglo infant mortality: Differentials over half a century', *Demography*, 28,4 (1991), 639–660.

22 Haines, (2001)

23 K. M. White and S. H. Preston, 'How many Americans are alive because of twentieth-century improvements in mortality?', *Population and Development Review*, 22,3 (1996), 415–429.

with diphtheria, one of the first vaccine-preventable illnesses of childhood. Its incidence fell from a high of 190 per 100,000 in 1921 to 11.8 in 1940.[24]

White children may also have benefited from vaccination against smallpox. For the country as a whole, the incidence of smallpox fell from a high of 66.4 per 100,000 in 1914 to 2.1 in 1940[25], but this decline camouflages other trends in the occurrence of the disease. The real killer was the acute subspecies of the virus, Variola major, which in the eighteenth century had devastated many parts of the world with disfigurement and mortality levels of up to thirty percent. Jennerian vaccination with Vaccinia, a virus closely related to Variola, protected many from the disease, especially after the 1840s when periodic revaccination was introduced. The procedure became even more popular when risky arm-to-arm vaccination was replaced by a safer vaccigen derived from calves.

In the United States, however, not everyone was vaccinated. Prevailing racist beliefs inhibited arm-to-arm vaccination of African Americans, a taboo continued even after that form of vaccination was discontinued. Salvation for African Americans came in the form of an epidemic of Variola minor, a milder subspecies of the virus that produces a much lower mortality, but which nonetheless provides immunity against Variola major. Beginning in 1896, Variola minor spread through the United States, infecting African-Americans and leaving them immune to the more virulent form of smallpox. The racially divergent paths to ending the smallpox danger can be seen in the number of cases of the two strains. Variola major fell from 10,000 cases a year in 1902 to 0 in 1928, while reported cases of Variola minor peaked at 109,000 cases in 1920, falling back to a still substantial 48,000 cases in 1930.[26] One can therefore conclude that the decline of Variola major among whites resulted from public health efforts to vaccinate susceptible white people and to isolate active cases, while the decline of Variola minor among blacks was the unplanned result of a largely benign epidemic. If access to physicians had been black people's only defense against smallpox, the mortality gap between the races would have been even broader than it was.

The other major inequity in American society was that between men and women. Explanations for women's greater life expectancy vary from the biological to the behavioral. Females outlive males in most forms of animal life. Men, historically the main breadwinners in American families, were reluctant to take time off from work in order to get medical help. Conversely, women have been more

24 *Historical Statistics of the United States: Millenial Edition* (Preprint, Cambridge, Cambridge University Press, 1999), Table A 37.

25 *Historical Statistics* (1999), Table A 37.

26 C. Chapin, 'Variation in type of infectious disease as shown by the history of smallpox in the United States, 1895–1912', *Journal of Infectious Diseases*, 13,2 (1913), 171–196; C. Chapin, 'Permanency of the mild type of smallpox', *Journal of Preventive Medicine*, 6 (1932), 273–320.

willing to seek medical help when feeling sick. A single factor explanation for women's longer life is obviously inadequate.

The convergences and divergences in American health between 1880 and the Great Depression demonstrate the societal priorities of the time. Americans wanted to close the health gap between cities and the countryside, just as they wanted to prevent the avoidable death of children. As a nation founded by immigrants, they wanted new arrivals to enjoy the same health as other citizens. Their commitment to equality in health for blacks and Latinos, by contrast, was less urgent. As for the shorter life spans of men, Americans focused their private and public resources on the consequences of the loss of a breadwinner rather than on the means of extending that breadwinner's life.

Post-transition America, 1930–2003

Since 1930, U.S. society has been transformed in a number of ways that affect American health. Some of these changes include those in the basic demographic indicators: fertility, mortality, and migration. Others involve the growing role of the government in the economy, the provision of biomedical health care, and the role of private initiative.

As far as demography is concerned, mortality continued the decline begun in the 1880s. In the immediate aftermath of World War II, fertility rose, creating a cohort of "baby boomers" succeeded in the next generation by a return to lower birthrates. Migration, which had slowed to a trickle, resumed after the war and peaked in the 1970s and 1980s. Serious divisions remained between the races and sexes in American society.

Life expectancy continued to rise, but more slowly than in the transition period. The combined life expectancy at birth for white males and females increased from 60.9 years in 1930 to 76.1 years in 1990, a smaller percentage of improvement than in the earlier period. For black males and females the combined life expectancy at birth rose from 48.5 to 69.1 years. [See Figure 3.] Part of this deceleration was a statistical artifact in that the greatest increases in life expectancy at birth occur when mortality decreases in infancy and early childhood. Since these components of overall mortality were already reduced during the earlier period, declines in mortality at higher ages did not affect life expectancy to the same degree. According to White and Preston[27], most reductions between 1930 and 1960 affected older children and young adults between the ages of five and fifty. Between 1960 and 1990 most improvements came to adults over the age of fifty. These advances

27 White and Preston, (1996).

resulted from unprecedented improvements in medical care due to the introduction of new pharmaceuticals [antibiotics between the late 1930s and the mid-1950s and in the 1980s and 1990s new drugs whose action obviated the necessity of certain surgeries]. Also new procedures were developed to deal with heart disease, stroke and cancer. To take one rough indicator of the utility of these new diagnostic and curative procedures, the five-year survival rate for all diagnosed cancers rose from 46.3% in 1973 to 60.2% in 1991.[28]

During this same period black life expectancy rose nearly as quickly as that of whites during the transition period. This increase continued across the decade of the Great Depression and despite the Great Migration from the rural South to the urban North. Blacks nonetheless experienced less favorable life chances.[29] Their life expectancies at birth were still 6.7 years less than those for whites. IMRs fell to historically low levels for both racial groups [7.6 per thousand for whites and 18 per thousand for blacks].[30] [See Figure 3.]

Indeed, one might well argue that disparities between blacks and whites ought to be measured by their absolute magnitude rather than by percentages. The infant mortality rate of black babies, less than two percent per year, is thus of the same magnitude as that of whites. The life expectancy of the blacks of all ages, compared with that of whites, by contrast has remained substantial. We therefore need to inquire further into the reasons that the mortality of black adults has remained so much higher than that of whites.

We might have expected a narrowing of the racial gap, because of the Great Migration, which brought millions of African-Americans from the overtly discriminatory South to cities of the Northeast and Midwest. Indeed, the regional gap between North and South diminished as a result of the eradication of malaria in the South.[31] Northern cities, moreover, became at least as segregated as the old Confederacy, and African-Americans continued to suffer from poverty and discrimination. These conditions adversely affected their lives and health.

Another cause for the persistence of the gap between blacks and whites may lay in the surrender by African Americans of the social solidarity that had sustained them in the Jim Crow South. Social capital among African Americans was closely associated with church membership, a phenomenon long recognized by African-American sociologists.[32] Studies of Northern black communities from the 1970s to

28 *Historical Statistics* (1999), Table A. 43.

29 R. A. Easterlin, 'Growth and composition of the American Population in the twentieth century', in *A Population History of North America*, eds. Haines and Steckel (2000), 631–675.

30 Haines and Steckel, (2000), 696–699.

31 M. Humphreys, *Malaria: Poverty, Race, and Public Health in the United States* (Baltimore, Johns Hopkins, 2001).

32 L. L. Hunt and M. O. Hunt, 'Regional patterns of African American church attendance: Revisiting the semi–involuntary thesis', *Social Forces*, 78,2 (1999), 779–791.

the 1990s show a massive drop-off in church attendance.[33] Recent studies of the health of the black population show that those who attend church regularly are far less likely to die prematurely than those who do not attend at all.[34] This is particularly true of northern blacks. Those who attend regularly are substantially more likely than the unchurched to seek preventive health care.[35]

Of course the attrition of church attendance among northern blacks requires further explanation. Does it lie in the failure of the generation of migrants to find opportunity in the North? Or is it a product of the disaffection of Northern-born blacks? In either case, however, those who have maintained their religious social capital enjoy better health than those who no longer value it.

The condition of America's central cities, paradoxically, did not have the same effect on immigrants. In the late twentieth century, the largest group were Latinos, who in 2003 became more numerous than African-Americans [each approximately 13% of the total population]. Between the mid-1930s and the mid-1980s, Latino infant mortality rates, as measured in a Texas county taken to be typical of the country as a whole, fell by a factor of twelve. This decline was twice as rapid as that for the non-Hispanic white population. This led researchers to conclude that Latino infant mortality rates were effectively the same as those for the general population. Scholars used the term "epidemiologic paradox" to describe a situation where the children of poor Latinos were just as well off demographically as those of much wealthier Anglos.[36] By 1997, the infant mortality rate of Latinos, despite greater risk factors such as less health insurance coverage, short gestation times, and low birth weights, was lower than that for Anglos.[37] The 2000 census indicated that their health was better than that of average Americans and much better than that of African Americans.

The government's National Vital Statistics System offers two explanations for this phenomenon: The first is that Latino immigrants come from the healthiest and most robust sectors of Latin American society. The other explanation is that U.S. residents of Hispanic origin may return to their country of origin when ill or to

33 L. L. Hunt and M. O. Hunt, 'Race, religion, and religious involvement: A comparative study of whites and African Americans', *Social Forces*, 80,2 (2001), 605–631.

34 R. A. Hummer et al., 'Religious involvement and U.S. adult mortality', *Demography*, 36,2 (1999), 273–285.

35 K. Felix-Aaron, D. Levine and H.R. Burstin, 'African American church participation and health care practices', *Journal of General Internal Medicine*, 18,11 (2003), 908–915; L. M. Chatters, R.J. Taylor and K. D. Lincoln, 'African American religious participation: A multi-sample comparison', *Journal for the Scientific Study of Religion*, 38,1 (1999), 132–145.

36 Forbes and Frisbie, (1991).

37 W.P. Frisbie and S. Song, 'Hispanic pregnancy outcomes: Differentials over time and current risk factor effects', *Policy Studies Journal*, 31,2 (2003), 237–252.

die.[38] Whatever the explanation, low Latino mortality rates are the realization of an American preference for providing health care to immigrants comparable to that available to native born whites.

Another social category in which disparities remain is in life expectancy by gender. In 1968, women's life expectancy was 7.5 years longer than men's; by 1992, that advantage slipped to 6.7 years.[39] This latter decline may be the result of the massive entry of women of childbearing age into the formal work force during the 1970s. The continuing disparity may come from women's more robust genetic makeup.

Understanding the implications of these social transformations, however, requires background on the politics of U.S. health care since Franklin D. Roosevelt's [1933–45] New Deal. Before that time, the federal government played an extremely small role in the provision of health services. Unlike most of the countries of Western Europe there was no government retirement insurance A program to distribute money through the states to poor children and their mothers had been allowed to expire in 1929. The major innovation of the 1920s was a program to build a network of hospitals for World War I veterans. The Great Depression, however, demonstrated that neither private charities nor state and local governments had the resources to alleviate the great distress that Americans were experiencing.

The Social Security Act of 1935 not only offered public retirement insurance for employees, thereby reducing the need for private insurance and fraternal associations, but it also provided assistance for indigent mothers and their dependent children. Another innovation of the Act was that it allocated funds on the basis of need as well as of population. Government relief programs also improved the health of poor southern blacks.[40] Thus, the government created an entitlement to health care for certain classes of the population: poor mothers, children, and the disabled.

The forty years that followed saw an enormous expansion of government health expenditures. During the 1940s the government created the National Institutes of Health and passed legislation subsidizing hospital construction undertaken by private agencies and local governments.[41] An increasing number of Americans also

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38 A. M. Miniño et al., 'Deaths: Final data for 2000', *National Vital Statistics Reports*, 50,16 (2002), 4.

39 Easterlin, (2000).

40 P. V. Fishback, M. R. Haines and S. Kantor, 'The impact of the New Deal on black and white infant mortality in the South', *Explorations in Economic History*, 38 (2001), 93–122; M. Humphreys, *Malaria: Poverty, Race, and Public Health in the United States* (Baltimore, Johns Hopkins, 2001).

41 D. M. Fox, *Power and Illness: The Failure and Future of American Health Policy* (Berkeley, University of California, 1993).

received coverage for health care from their employers. During the Second World War, the federal government established a tax policy that allowed employers and employees to exclude benefits paid by employers from gross income for the purposes of calculating both individual and corporate taxes. This policy was intended to reduce wartime demand for consumer goods and overall inflation and to narrow the gap between civilian and military wages. This tax exclusion became popular and has continued to the present day, despite criticism of inflation in the costs of medical insurance.

The most important steps in increasing the federal government's role in health care were the Medicare and Medicaid legislation of 1965. Medicare was a new social insurance program for the elderly which covered hospital and physician expenses for all citizens over 65. That entitlement, unfortunately, excluded important items such as preventive care, outpatient pharmaceuticals, and long-term care. Medicaid provided federal matching funds to the states for the provision of medical care to the indigent including the three categories of services omitted from Medicare. Those elderly who could qualify as indigent could therefore obtain total coverage, if they could find a specialist willing to accept government payment levels.[42] Within two years federal spending on health rose by 10% of the National Health Expenditures, and out of pocket spending fell by a similar amount.

These new programs, which guaranteed to Americans many of the health services provided by European welfare states, came at a very difficult time in U.S. economic history, the high point of the 1964–75 Vietnam War. Budgetary restrictions inhibited new government spending on health. The government terminated its subsidies for hospital construction. A number of Americans lacked medical insurance: the young, the self-employed, and non-citizens.[43] For other groups, a number of services, moreover, were not covered: medications and preventive care for seniors, long term health care, and dental insurance, to give three examples.[44]

Other medical fields continued to receive money from the federal government, which invested huge sums in medical research. Well-financed university hospitals developed top of the line procedures to treat the acutely ill. Even though federal investments in health care declined somewhat after the end of the Vietnam War, a combination of public and foundation monies assured a continued improvement in medical technology.[45] The number of specialists grew as did the number of physicians. The proportion of physicians in the population nearly doubled from

42 L. Brown and M. Sparer, 'Poor program's progress: The unanticipated politics of Medicaid policy', *Health Affairs*, 22, 1 (2003), 31–44.

43 Starr, (1987).

44 D. M. Fox, 'Health policy and the history of welfare states: A reinterpretation', *Journal of Policy History*, 10,2 (1998), 239–256.

45 K. M. Ludmerer, *Time to Heal: American Medical Education from the Turn of the Century to the Era of Managed Care* (New York, Oxford University Press, 1999).

150 per 100,000 in 1960 to 285 in 1995.[46] Patients also received care from new categories of health professionals: physician's assistants and nurse practitioners. [See Graph 2.]

Despite increases in federal outlays, a large part of U.S. health care remains in the private sector. To be more precise, most medical expenditures involve both the public and the private sector. The pharmaceutical industry constitutes a case in point. The federal government funds basic research through the National Institutes of Health. Medicaid pays for medications for indigent outpatients, and Medicare and Medicaid pay for in-patient medications. Although the share of pharmaceuticals in national health expenditures fell in the 1960s and 70s, its cost rose again in the 1980s and 1990s. Pharmaceutical manufacturing is in the private sector, and drug prices rose rapidly, particularly after 1995. By 2001, they constituted nearly 10% of total medical expenditures. Profits depend on production of new pharmaceuticals under patent, which sold in 2000 for an average of 3.4 times the cost of their generic equivalents. After 1996, the industry promoted sales of these new drugs through direct television advertisement to consumers.[47] The distinction between the marketing of health products and consumer items has been substantially eroded. Pharmaceuticals alone constitute nearly four percent of U.S. GDP.

The public-private partnership in health care leaves little scope for cost controls found in other OECD systems. European countries, particularly those in the E.U. and its predecessors, faced medical inflation directly. As early as the first oil crisis of 1973, governments intervened to control costs. In Britain, the government protected the National Health Service, but engineered cuts in other social programs such as education and housing.[48] Other countries limited hospital construction in order to optimize use of existing facilities, or raised standards for medical school admission to limit not only the number of doctors but also the expensive procedures they performed. Still others restricted the pharmaceutical industry and encouraged the use of generic drugs.[49] As a result, health expenditures have remained below 10% of GDP in the E.U., while they have risen to over 14% in the U.S.[50]

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46 *Historical Statistics* (1999), Table A25.

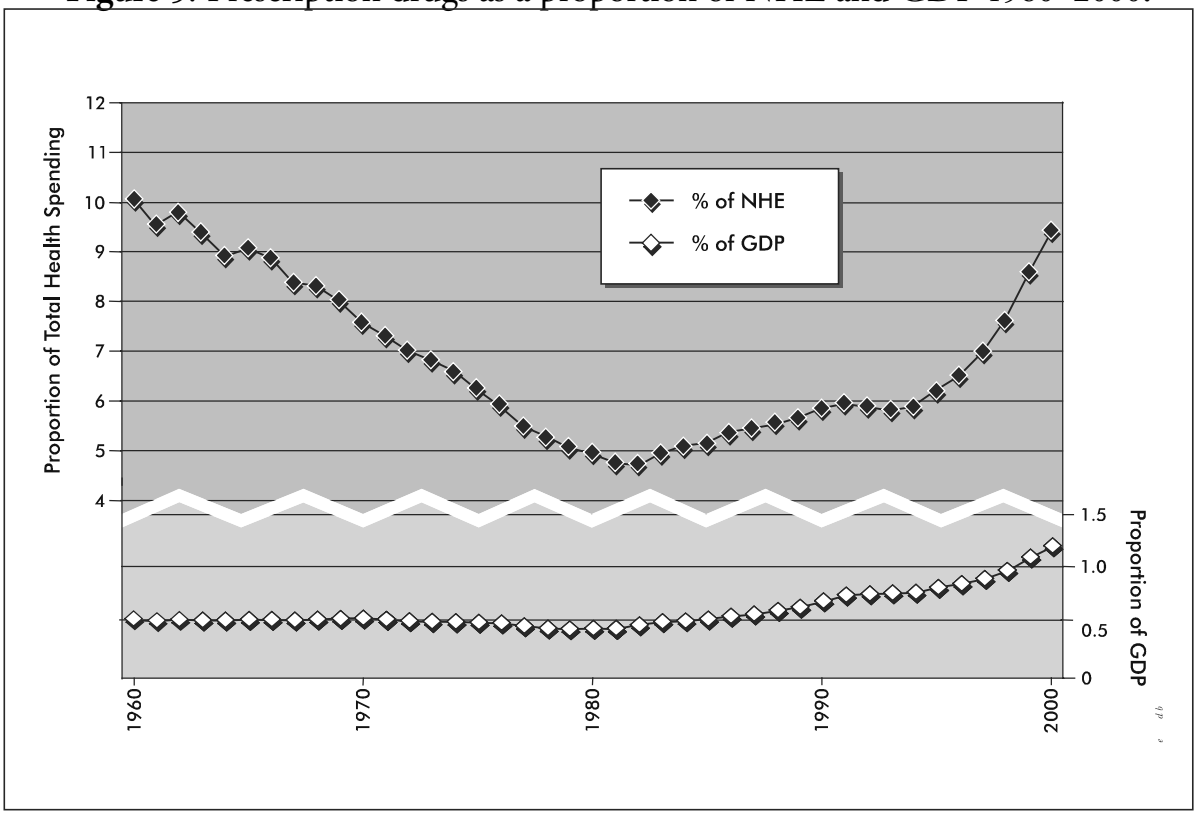
47 D. H. Kreling, D. A. Mott and J. B. Wiederholt, *Prescription Drug Trends: A Chartbook Update* (Menlo Park, CA, Kaiser Family Foundation, 2001).

48 R. Klein, *The New Politics of the NHS* (Third Edition, Harlow, Longman, 1995), 98.

49 B. Abel-Smith, *Cost Containment in Health Care*. Occasional Papers on Social Administration 73 (London, Bedford Square Press, 1984), 1–17.

50 L. Paquy, *Les systèmes européens de protection sociale en perspective* (2003). [http://phoenixtn.net/monographs.jsp]; K. Levit, et al., 'Trends in U.S. health care spending, 2001', *Health Affairs*, 22,1 (2003), 154–164.

Figure 5. Prescription drugs as a proportion of NHE and GDP 1960–2000.



Source: National Health Expenditures, 2002, Center for Medicare and Medical Services, Office of the Actuary, National Health Statistics Group.

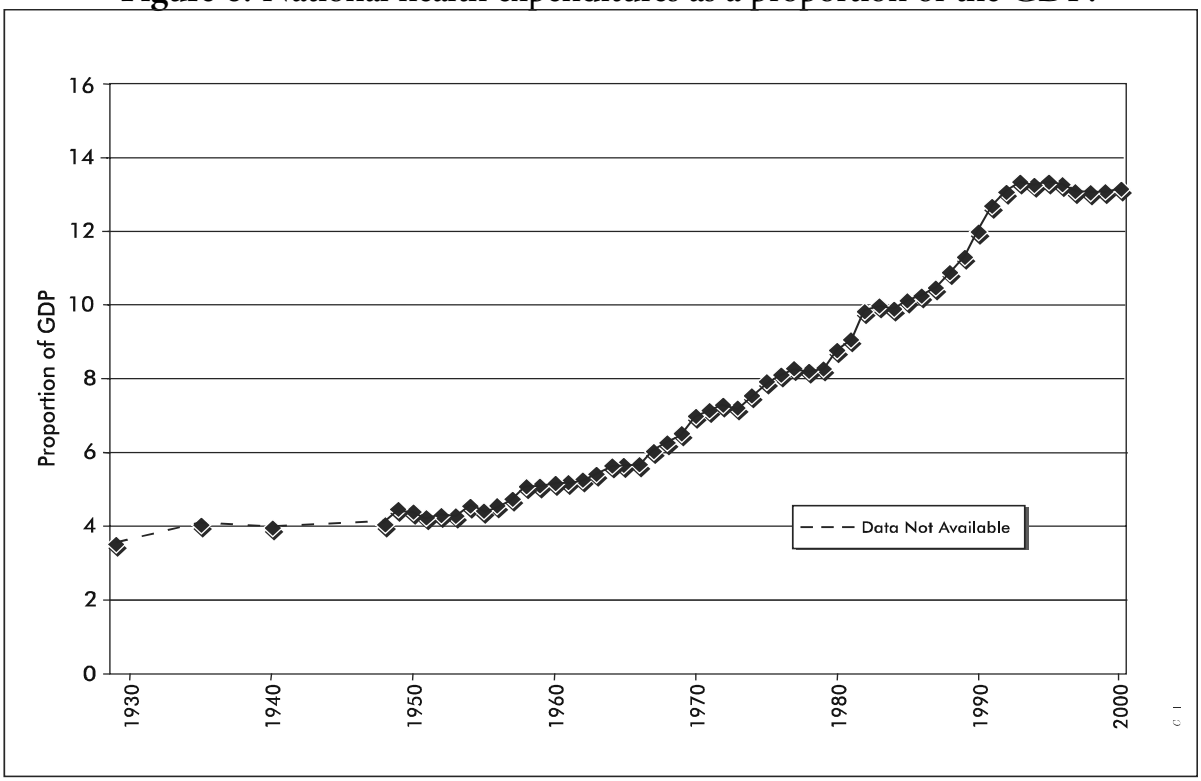
Efforts to control various elements in American health costs have been tried and failed. In the 1970s, a number of state legislatures attempted to control hospital costs by restricting new construction, which then amounted to about 40% of total health care. They required hospitals to obtain certificates of need before expanding their capacities. These measures immediately evoked harsh criticism and, after about 1980, most were repealed. In 1993–94, the Clinton administration attempted to curb the power of insurance companies that were then establishing Health Maintenance Organizations to ration health procedures in order to lower total costs. This, too, elicited a furious response and was rejected by Congress.

By the 1990s, all major elements in American health care were growing simultaneously. The five major providers in the U.S. system are hospitals (32% of total costs), physicians (22%), pharmaceuticals (10%), nursing homes (7%), and private medical insurance companies (6%).

The combination of higher pharmaceutical costs, higher hospital costs, and increased salary costs also strained the resources of all levels of government.[51] By 2001, health costs were consuming 14.1% of the Gross Domestic Product. Indeed,

51 Abel-Smith, (1984).

Figure 6. National health expenditures as a proportion of the GDP.



Source: National Health Expenditures, 2002, Center for Medicare and Medical Services, Office of the Actuary, National Health Statistics Group.

the public sector, which includes the federal government [31%], the state governments [16%] and tax revenues [10%] now accounts for 57 percent of all health costs.[52]

This increase in cost has altered the relationship between different levels of government within the federal system. Municipalities, which during the earlier period played such a vital role in public works and public health, are particularly hard hit. They had benefited from federal matching grants but have found that they can no longer provide the array of services that they had once offered. Perhaps part of the problem was the increase in government expenditures during the Vietnam War (1964–75). In the city of Milwaukee, Wisconsin for example, the proportion of the budget allocated to public health fell from 5 percent to 3 percent between 1972 and 1974. States, which had benefited enormously from federal matching grants, also felt themselves strapped for cash. Often they economized by eliminating unsubsidized programs. In Wisconsin, for example, the government in 1972 mandated consolidation of ineffective local programs, eliminating 95 percent of them, and forced counties to close many of the hospitals whose building

52 D. M. Fox and Fronstin, 'Public spending for health care approaches 60 percent', *Health Affairs*, March/April (2000), 271–273.

construction the federal government had previously subsidized.[53] The economic downturn following the attacks on New York and Washington in 2001, has put further pressure on states to reduce their health expenditures.

Health care in the United States is in crisis. The richest country on earth spends one-seventh of its wealth on health care and still leaves 15 percent of its population uninsured. The elderly are frequently forced to choose between food and pharmaceuticals. Many have abandoned biomedicine altogether for the Complementary and Alternative Medicine used by so many Americans in the 19th century. One survey shows that in any given month 6.5% of the U.S. population consults a non-biomedical healer.[54]

Not everyone thinks that government intervention will satisfy America's unmet health needs. Some look nostalgically back to fraternal organizations to offer protection now provided by government.[55] Legislation recently enacted by Congress to provide Medicare coverage for preventive procedures and outpatient pharmaceuticals bans the Federal government from negotiating with manufacturers in order to control costs. It also subsidizes private insurers to compete with the Medicare system. This effort to privatize Medicare will most likely raise still further the cost of medical care. It is difficult to see how expensive private services can supplant cheaper public ones.

American health care is a dynamic and complex system. More than that of most other OECD members it embraces both the private and the governmental. At its summit it offers medical procedures unavailable anywhere else in the world. It offers services to the very poor, but often neglects the working poor. Despite its goal of equitable coverage for all, it still fosters substantial differences in health across race and gender. One can only hope that efforts to reform the system eventually result in better coverage for all rather than the attenuation of services.

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53 J. Chapin and B. Fetter, 'Performance-based contracting in Wisconsin public health: Transforming state-local relations', *Milbank Quarterly*, 80,1 (2002), 97–124.

54 L. Green et al., 'The ecology of medical care revisited', *New England Journal of Medicine*, 344,26 (2001), 2021–25.

55 D. Beito et al., *The Voluntary City: Choice, Community, and Civil Society* (Ann Arbor, University of Michigan Press, 2002).

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