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**Russia and Eurasia Programme, Asia Programme, Centre on Global Health Security: Seminar Summary**

# Health and Demography in Russia and China

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This seminar sought to compare and contrast levels of physical wellbeing, health provision and demographic change in two large countries, accounting for one fifth of the world's landmass and 23 per cent of its population. The event also considered the social, economic, and geopolitical implications of current and future health and population trends in Russia and China. Despite past similarities (both are former planned economies which offered national health services), the two countries have developed their health systems in very different ways, and are now displaying very different health outputs. The seminar examined whether Russia and China have entered the current economic crisis with populations in good health and medical systems ready to meet future challenges; how the crisis has affected health in Russia and China; whether the governments have responded effectively to health challenges with appropriate policies and reforms; what lessons can be learned by other countries from reforms in Russia and China; and what are the future implications of health and demographic developments in Russia and China for international cooperation, trade, military reform and economic growth.

## Panel One: The Evolution of Health Systems

### Comparative Analysis of Health and Health Development in Russia and China

### Dr Christopher Davis, University of Oxford

The speaker began by defining key concepts for the seminar. Health production is the interrelationship of institutions (medical systems, educational systems etc) and processes (such as demographics, the environment, levels and types of consumption) and the effect this has on the way households behave and promote (or undermine) health. This interaction generates an illness pattern; some of these illness patterns, but not all, are presented to the medical system for treatment. The medical system produces preventative and curative services, and in doing so, provides inputs of labour, capital, pharmaceutical and medical goods, which comes from the relevant pharmaceutical and medical industries. If domestic supply cannot meet demand, foreign trade becomes an important consideration. The final factor is the state, which oversees these processes, exercises priority control over the health production chain, and makes plans for its operation.

Any health system, whether in Russia, China, or the United States, operates within a political and economic system, and is thus affected by economic policies, foreign trade policy, exchange rate policy, and the economic environment. These economic and political influences affect the performance of health institutions.

There is a debate about the impact of medical care on health status. Does it matter whether we have health systems or not? Many demographers are sceptical about the role medical care plays in affecting the health of populations. When demographers look at the transition process and the big fluctuations in mortality, they tend to identify other factors as driving these changes. Conventional estimates are that medical services account for only 10 per cent of the change in mortality or life expectancy. On the other hand, health economists argue medical care plays a bigger role.

According to the official Russian Health Concept to 2020, 'it has been established that there is a direct correlation between the level of socio-economic development and the effectiveness of the health system.' It argues that the relative contribution of the health system to morbidity/life expectancy is 38.5 per cent, with socio-economic potential accounting for 32 per cent, and the demographic structure of the population accounting for 29.5 per cent. According to the Concept, the results of mathematical modelling show that increasing the effectiveness of the health system can ensure a reduction in morbidity and the disability of the population.

We should be aware of the morbidity 'iceberg' when considering health in Russia and China. The morbidity iceberg refers to the fact that not all illness is presented to the health system for treatment. Official Soviet studies found that 60-70 per cent of illnesses were presented for treatment in urban areas, but in rural areas the figure was around 40 per cent. As economic conditions worsen, as transport costs go up, one would expect to find an increase in the submerged (non-presented) component, with adverse consequences for health.

There are substantial health inequalities in both Russia and China relating to health conditions, access to medical care, medical treatment, health spending, health outcomes, socio-economic groups (age, sex, income, occupation, employment status), and geographic location.

During the Soviet era, health promotion was identified as a key task of the state, but in reality health sectors were given a low priority status. The population of the USSR was older and more urbanised than in China. It had gone through the demographic and disease pattern of transition (from

infectious disease patterns to non-communicable diseases), whereas China in the command period had a young, rural population with a high prevalence of infectious diseases. The Soviet National Health Service existed from the late thirties and was similar to the UK's NHS in that it provided universal medical care free of charge and was widely available in urban and rural areas. However, it had a low priority status, functioned in a shortage economy, and had less protection from supply constraints than the defence sector, for example. It was state owned and centrally planned, however management was fragmented between ministries. There was a Ministry of Health medical system and departmental medical systems. Around 20 different departments had their own medical sub-health systems (such as the KGB, the ministry of railways etc). The Ministry of Health ran the party elite medical subsystem, and separately 15 republic ministries of health. Under each of these there were capital city and regional subsystems. The organisational arrangement was thus more complex than one might expect, and much of this has carried over into the transition period.

The Soviet Union believed in quantitative planning. Success indicators for the health system were hospital beds and numbers of doctors. The health system constantly over-fulfilled its plans in these key areas. The USSR had three times as many doctors per thousand population than the UK (4.5 versus 1.5).

Soviet medical care was financed by the state budget. Real health spending increased from a low level; however, the health share of GDP was low by international standards (in 1985 3 per cent USSR, 6 per cent UK, 9 per cent France, 11 per cent USA). Wages of medical staff were low and not linked to incentives. There were considerable fluctuations in mortality from the fifties onwards in the USSR. 1955-65 saw decreasing mortality, rising life expectancy in the post-Stalin period; in 1965-85, as degenerative diseases became a more significant contributor to morbidity, there was increasing mortality and falling life expectancy; 1985-88 under Gorbachev and perestroika witnessed decreasing mortality, rising life expectancy and 1989-91 mortality increased and life expectancy fell. Life expectancy in China, on the other hand, has shown none of the fluctuations we have seen in Russia. Improvement in life expectancy has been steady since the 1960s.

During transformational recession (1992-1996), and the economic crisis of 1998 in Russia, there was rising unemployment and worsening poverty and health conditions. Health reforms were undermined and there was a decrease in real health spending. The overall effectiveness of medical care was reduced and there was a worsening of disability and mortality rates.

As charges for medical care increase, there is a fall in the number of people presenting illness to the medical system. During early transition, most factors leading to non-reporting increased: dissatisfaction with medical treatment (quality deteriorates); absence of good medical facilities in the local area; high time costs due to deterioration in transport infrastructure; high travel costs due to cuts in travel subsidies; official and informal fees for medical treatments; and high cost of drugs and supplies related to treatment. If we accept that medical systems have a significant impact on morbidity, then the increased scale of the morbidity iceberg in transition would have had an effect on mortality rates.

The Russian government introduced a new system of financing medical care in 1993, moving from state budget financing to compulsory medical insurance with no direct contributions from the population. All contributions come from employers, or from the state to cover the unemployed, elderly and students etc.

From 1990-1999 there was a drop of almost a third in real health spending. There was a big gap at the end of the 1990s between actual state spending and what was needed to provide the minimum state services guaranteed to the population.

Under Putin, there was more emphasis on health education and prevention. There were intensified reforms related to management and incentives in the medical system. Various flaws in the compulsory medical insurance (CMI) system which had been identified were rectified. Federal Goal Programmes in health for 2002-2006 were adopted to supplement normal activities. This was then followed by a Priority National Project in health for 2006-2010. In December 2008, the new Health Concept for the Russian Federation to 2020 was adopted. With the recovery of the economy under Putin, there has been a substantial increase in real health spending. It has increased from 68 per cent of the level before the transition period (in 1999) to 50 per cent above the 1991 level.

The 2002-2006 Project identified a number of diseases (including diabetes, tuberculosis and HIV/AIDS) which needed attention. The funds going through this Project for these diseases were in addition to those from the state budget.

In 2005, the Priority National Project (PNP) in health was launched, and then Deputy Prime Minister Medvedev was put in charge. The goals were to improve the health of the population through improved prevention, raised efficiency and effectiveness of curative medicine. 79 billion roubles ($2.2billion) were allocated to the PNP in 2006 from the federal budget. They

were scheduled to spend 346 billion ($9.6 billion) roubles over the next three years (2007-2009). On 24 September 2008 the government announced that the PHP will become a more established State Programme from 2009. This means even more funds will be devoted to it.

The goals of the State Health Programme to 2020 include: increasing the population of the Russian Federation to 145 million; increasing the life expectancy at birth of the population to 75 years; decreasing infant mortality to 7.5 deaths per 1,000 live births (by 20 per cent from 2007); decreasing maternal mortality to 18.6 deaths per 100,000 live births (by 15.7 per cent from 2007); formation of a healthy lifestyle of the population, including reductions in the consumption of tobacco and alcohol; increasing the quality and availability of guaranteed medical assistance; reducing the mortality rate to 10 people per 1,000, which would be a historic low for the country.

Although health spending in Russia is increasing, there has been a rise in health inequalities in the transition period. The elite groups are served in the private sector; departmental and industrial medical care has been maintained for key state employees. The employed population obtains preferential treatment because of CMI funding. The poor obtain residual care, need to queue, and spend a high share of the family budget on medicines. Urban-rural inequality remains substantial. Infant mortality varies greatly across the country.

What is the impact of the economic crisis? The current global crisis, unlike the crisis which hit Russia in 1997-98, started in the heart of the capitalist system and spread outward. Russia is in a much stronger position than it was in 1997 because of the reforms of its institutions over the last ten years, and the creation of the stabilization fund. However, the crisis has caused large drops in earnings from exports of energy and investments. GDP growth has decelerated to -4.5 per cent in 2009. This has lead to rising unemployment and poverty. Nevertheless, the government has committed itself to maintaining a social safety net and is proceeding with health reforms. The Minister of Health and Social Development has made it clear that there are going to be no cuts in spending on social programmes in the next couple of years. It is unlikely that Russia is going to experience a surge in mortality as it did after the 1998 crisis.

## Health and Health Reforms in China

### Gerald Bloom, Institute of Development Studies, University of Sussex

In China, as in Russia, in order to understand what is happening in the health sector, one has to understand how rapidly the country is changing. China is undergoing very rapid urbanization, industrialization and modernisation. There has been extremely fast economic growth. The demography is changing; there is an ageing population, and with it the associated patterns of disease. Over the past ten to fifteen years there has been major government investment in roads. Places that only a few years ago were hours away from a capital are now half an hour away. Almost every family has electricity. There have been massive population flows. It is now very rare to find areas which are isolated from the rest of the country. There has also been increased integration into the global economy.

The health challenges for China include: an ageing population and increasing burden of chronic disease; a rising financial risk of households when a family member falls ill – migrant and urban workers now bear more of the financial risk themselves. Likewise in rural areas, with the shift from collective agriculture to household production, the financial risk for individual households increases; rural/urban transitional households – this is a remarkable phenomenon where the oldest generation might be engaged in farming, the middle generation are migrants who come home once or twice a year, and all of it is aimed at the third generation getting a good education and a good job in the city. This leads to an accelerated movement of people to urban areas, which leads to changing patterns of inequality and social exclusion. This has been an incredibly efficient process of transformation, but one which has exposed households to risk. There was a policy shift in 2002 from an almost exclusive focus on economic growth and social stability, to an emphasis on building 'the harmonious society', strengthening the social sector, including health, and integrating rural areas into the benefits of development.

The challenges related to economic growth and rapid industrialisation include problems with dangerous foods and ineffective drugs – there have been a series of scandals surrounding medication and food quality, and each time the government responds with improvements to the regulatory environment. The spread of markets in China was much faster than the capacity to build institutions to regulate them; there have also been problems with pollution of air and water; increased wealth has brought massive changes in animal

husbandry, and the emergence of zoonoses such as avian flu and SARS. China has been investing to build capacity in surveillance, monitoring and regulation, and crisis response.

The health sector problems differ substantially from Russia. China did have urban, work-place based health benefits, not too different from the Soviet system. In rural areas, health was essentially the responsibility of collective agriculture. When China moved to a system of household-based production, there was a clear difference in how health was treated in rural and urban areas. In urban areas the issue was largely how to manage a transition to a population-based insurance system. In rural areas, households took on the basic financial responsibility. Since the 1980s, a series of problems have emerged in China's health system, and have become more pressing. These include: a lack of skilled personnel in rural facilities as an increased labour market drew the best health professionals to the cities. The expansion of medical schools lagged behind so it took a long time for this skills gap to be filled. The health system received little government financing; in order to maintain financial stability, the system was funded by the sale of drugs, charges for consultations and the use of equipment. Over time, the cost of drugs and equipment rose steadily. Meanwhile, particularly in rural areas where many doctors had left for the cities, there were issues of quality and safety of services. During the transition to a market economy, salaries in the health sector lagged behind those in the private sector. There is some evidence that health workers shifted their services to areas which brought greater revenue, although there was no decay or collapse in preventative services. The high cost of health services became a big concern amongst the population, often second only to the economy, and there was increasing pressure to tackle the high cost of health care. It has been moving up the political agenda.

During the 80s, these problems slowly moved into the public and political consciousness. The awareness eventually reached the Ministry of Health by the mid-90s, which was very concerned about the financial viability of rural health services. In the past 13 years we have seen a long period of policy development. In China, unlike Russia, a lot of these developments have come about by encouraging regional experimentation with health insurance reform. There has also been a growing reliance on advisory boards, think-tanks and also an increasing role for the media in exposing problems. Health is becoming an increasingly open political issue. The latest health reforms in China have involved a high degree of public consultation.

The initial focus of the reforms was on urban health insurance. In the 1990s, the Government's concern was on state enterprise reform and the need to maintain public support as those reforms occurred, as people had to shift jobs or became unemployed. In 2002, there was a shift in focus towards the rural health service. The SARS crisis in 2003 led to the Deputy Prime Minister becoming Minister of Health, and suddenly an enormous opportunity for health reform opened up. There were high profile political commitments to expansion of access to health services, particularly rural ones. Health has become a key concern of government. In 2009, the most recent announcement has included big commitments to a rapid rise in public finance over the next three years. The rural system is largely funded out of pocket. As government takes more responsibility for financing, the big problems of making the system accountable have come higher up the agenda. China has announced its aim to establish universal access to health services by 2020.

Reforms of urban health services involve a move from employer-based health benefits to basic medical insurance. This is a response to the fact that the number of people engaged in state enterprises has fallen markedly in the past two decades with rapid marketization. The government asked the Ministry of Labour to establish a basic insurance system which is now well spread through the urban population. Most urban workers are now covered by a basic insurance scheme, with a variety of 'top-ups' through private insurance. There is still an issue over migrants who are not necessarily covered, although the government says they will be.

One of the biggest problems for China relates to its ageing population. There is an increasing pressure on health insurance payments for the elderly. The small number of people in their 80s and 90s have, up till now, received care in tertiary hospitals, which is expensive. There is a need to shift to out-patient care. But it is difficult for the elderly to accept community care rather than acute hospital care as the gold standard.

It is amazing that there has not been a break-down in public health as cities have grown exponentially, and there is such pressure on public health. One would expect health problems to emerge amongst the migrant population and the socially excluded. With a huge migrant population, and families split, often by generation, between rural and urban living, central government is not clear what is the responsibility of municipal government and what falls under the purview of regional and rural authorities. With the breakdown of the planning system, hospitals gained a large degree of autonomy in terms of setting care priorities and budgets. Increasingly, government is seeking to reintroduce

some level of central planning to try to rationalise provision of health care, investment and provision of equipment across regions.

When the shift was made from collective agriculture there was little government money available for health care. Typically, 90 per cent of the revenue for rural health centres came from charges to patients as personal incomes for health workers rose faster than government budgets. In the 1990s, then government started its reform of rural health by investing in facilities and human resources. There was major funding for infrastructure and training establishments. In 2002, there was a strengthening of a kind of rural health insurance (100 RMB per capita public finance). Previously there had been an extremely decentralised system. Each county was expected to be fairly autonomous in investing in social services. There may have been some fiscal transfers, but these were modest. In 2002 there was a radical rethink and a recognition of the need for substantial fiscal contributions from the centre. The health insurance system that was introduced was essentially a central government funded measure. The government has now announced it will also provide a basic public health service (15 RMB per capita). For 15 years, selling drugs was key to ensuring stability in the health sector. That link has now been cut. Health centres will now receive budgets based on performance. There is now more emphasis on government oversight and regulation. There are extremely good policy ideas coming from the centre in China; the problem is how to make local governments accountable. There is, thus, a greater emphasis on governance, trust and coordination.

There are a lot of good ideas in the latest reform proposals. The key challenges to the reforms are that if health workers cannot guarantee their income by selling drugs, there has to be another mechanism. Performance indicators and assessments will be required. There are no trade unions or professional groupings. In rural areas, a lot of the funding is still out of pocket; government funding still constitutes a minority of the total income. There is a lot of work that still need to be done on how to balance these two revenue sources, and there is a big regulatory agenda which must accompany an increase in government funding. Effective purchasing and audit is very important, as is ensuring that access to health care is fair. Another problem is to ensuring that government money is used to buy effective and competent services so that there is appropriate sourcing of drugs and services. The government has now announced that this will be one of the big things they will deliver in the coming years. However, its capacity to meet this commitment will depend on the depth of the economic crisis. Whilst the government is committing a lot to health, it is also putting a lot into infrastructure and

construction projects, partly to create employment, so there will be competing claims for funds.

As discussed above, there has been a phenomenon of households enabling a third generation to move to study and get a job in the cities. The economic crisis puts this at risk, it threatens to increase unemployment and poverty. This is a major challenge for the population and government. Households are not going to want to give up on that plan. The Chinese government is committed to what one might call a counter-cyclical investment in health.

China, unlike Russia, is becoming a major player in the pharmaceuticals industry. These companies want to go global, and are producing generic and R & D-based products. International trade negotiations will have a direct impact on these companies.

## Discussion

One participant questioned how effective and well-targeted the increases in funding had been in Russia over the last eight years, It was argued that over this decade, Russia has been trying to correct many of the deficiencies which emerged in the nineties. There was a cut in real health spending by a third between 1991-1999. In 1991 health spending was low by Western standards, so it was cutting from a very low base. There was little investment in infrastructure, because the Ministry of Health had to direct the money it had to paying medical staff, or providing medicines, food and heating, not investing in capital stock. Now, a lot of money is going into specific programmes and addressing health infrastructure issues, the benefits of which may not be manifest immediately but should, over time, affect the population.

One expert argued that in China, over the nineties, there was a gradual increase in regulatory capacity to deal with inadequate drugs, dangerous foods and responding to outbreaks of disease. But to produce the institutions for a good health system is quite complex, and takes time. In the late 1990s, the government committed money to urban health insurance. It has taken years to create competent schemes, and they are still poor at negotiating either quality or appropriate allocations between hospitals and community health. In rural areas, this is much newer. The government has just shifted to making large fiscal transfers. In the previous decade it basically invested in infrastructure; now it is making fiscal transfers for basic services including health. Institutions which can use that money to lever improved quality of service are new. It would be surprising if in five to ten years there aren't effective institutions capable of managing and planning rural health services.

The money is flowing, it is not being diverted out of health, but there are issues about how this gets translated into effective services.

A question was raised about differentials in mortality rates for the educated and non-educated sections of the population in Russia. Studies showing rising mortality in the USSR were available from 1965 onwards. Mortality rates are driven particularly by cardiovascular disease, cancers and alcohol poisoning. There was deterioration in the transition period. Once Russia began to provide uncensored material to international bodies, more demographers got involved. They found that excessive consumption of alcohol by males had a particularly detrimental effect in Russia, Belarus, Ukraine, Poland and in many other former Warsaw Pact and transition countries. That was coordinated with rising psycho-social stress as the economy ran into difficulties, and with rising unemployment and wage arrears. It's clear that with male drinking there is a major difference between working-class drinking patterns and those of the more educated classes. The educated classes became more rational in their drinking habits. Binge drinking is firmly ingrained in working class and military cultures. This is not the case in China. There has been a substantial increase in drinking in China, but it's not a replication of the situation in Russia.

One participant argued that one has to be careful about talking about health and health services. Is the recession bad for health? It's been shown that death rates go down during a recession – we can expect this recession to be good for health, argued one participant, though it may not be so good for financing health systems. The command systems had dramatic successes in reducing mortality. In Russia, between WWII and the 1960s there was a period of spectacular success, followed by a period of spectacular failure as a result of failure to adapt to the changing disease profile. The ability of a country to improve its health service depends on its ability to make good use of what is known. The leading cause of premature death in Russia is cardiovascular disease. The science which has underlain Western success in controlling this has largely been cardiovascular epidemiology. In recent times, the publication rate per million population in Russia of cardiovascular epidemiology practitioners has been about one fiftieth of that in Western Europe. The whole transformation of western medicine in terms of its permeation by quantitative logic which underlies the understanding of chronic disease hardly exists in Russian medicine. Nor is there any sign that the Russian government understands what it needs to invest in in order to produce the scientific basis to improve their health service provision. The participant expressed doubt that Russia will have the success in the field of

health it aspires to unless it starts to understand the sources of success in the West.

One questioner asked about human resources in China – do they have the medical staff and human capital to provide the desired improvements in health care? The speaker replied that in the nineties, there was a big investment in training institutions. In 2000, rural health authorities were struggling to recruit. This problem has receded. In a few years the challenge may be that China has too many health professionals.

Discussion moved to the effect of smoking in China. It was pointed out that a lot of the rural counties are reliant on tobacco farming. China has one of the largest cigarette companies in the world. It is noticeable that rural government is now committing money to something it's calling public health. China, in a legacy from the command system, organizes its preventative health services along vertical lines. And they stem from a time when infectious diseases were the key problems so they have very well organized vertical programmes for this. There is a challenge for those vertical agencies to grapple with chronic diseases. The money is now committed, but they have to consider how to reorganize, retrain, and combat these issues.

Discussing the SARS outbreak in China, it was pointed out there is now a surveillance system which is one of the best in the world. The penalties for a local politician for having an outbreak of a disease in his or her constituency which is not caught by the surveillance system would be severe. So, there will be outbreaks which are no one's responsibility. There is pressure for surveillance and reporting. When government at the highest level came to conclusion that there were problems with the health sector, it criticized health professionals for incompetence and veniality. Now the health system is politicized, and it is acceptable for the media to draw attention to problems. Increasingly, the issue will be how to manage this to avoid panic.

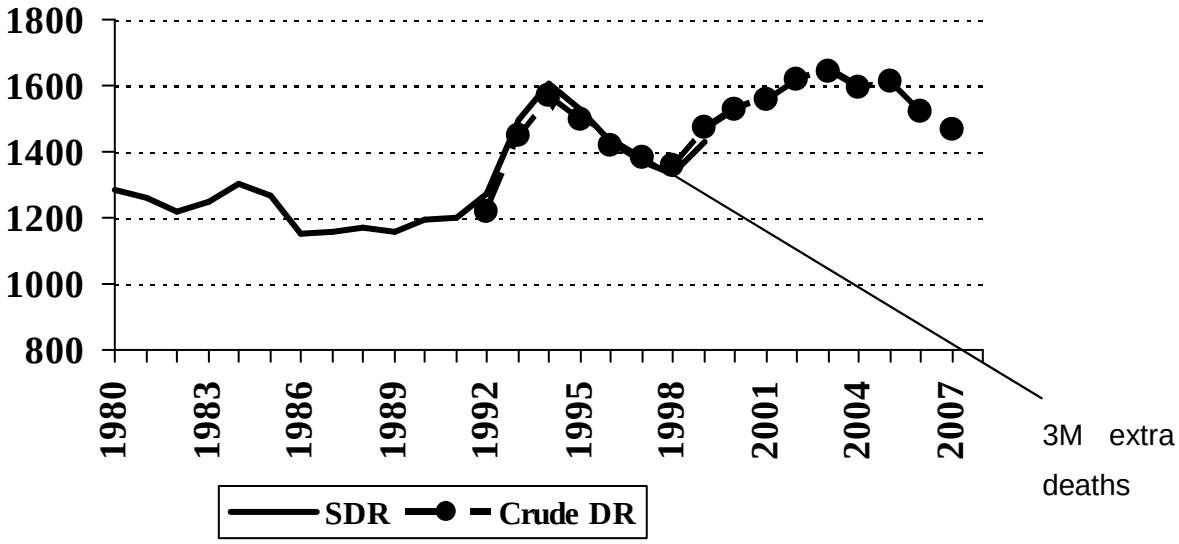
## Panel Two: Current Health Challenges

### Trends in Health Patterns in Russia during Societal Transition

### Professor Mark Bobak, University College London

Death rates in Russia in the last twenty years mirror political developments. A small improvement when Gorbachev was elected, a terrible disaster when the Soviet Union was dissolved, the rouble crisis in 1998, another rise in mortality to the levels seen in the early 1990s, and then a slow improvement until 2007.

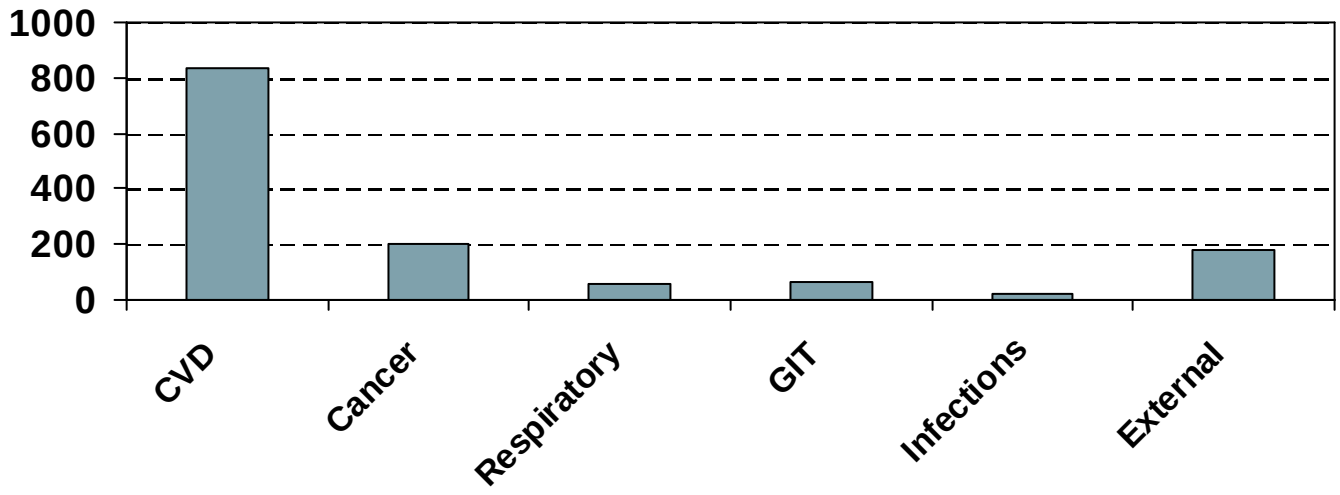
This increase in mortality in the mid-1990s was the equivalent of three million extra deaths. We don't have figures for 2008, we can be reasonably confident the decline will continue. What will happen next is unknown. Vladimir Popov from the New Economic School predicts another upward trend, but this is speculation.




*Death rates in Russia 1980-2007, both genders, per 100,000*

The former Soviet Union, including Russia, has performed much worse than the West during its transition, and much worse than Central and Eastern Europe. The scale of the increase in mortality in Russia during transition is almost unprecedented. There are different estimates, but the rise in mortality in the mid-1990s was the equivalent to around three million extra deaths above the 'normal' death rate, which was high already.

If one looks at the structure of mortality in Russia, the total crude death rates are around 1,450 per 100,000. 60 per cent of this is caused by cardiovascular disease. About one sixth is cancer. If anything, cancer death rates in Russia are lower than in most Western countries despite the high rate of smoking by men.




*Deaths rates by groups of causes of death, both genders, per 100,000, Russia 2007*

The steepest rise in mortality in the early 1990s was in the working age group (20-55). Infant mortality was not impacted greatly, and mortality amongst old age groups did not rise as sharply. In this period, the number of deaths due to infectious diseases increased substantially. Cancers remained unchanged. Cardiovascular disease increased by 50 per cent in men, 45 per cent in women. External causes increased, and alcohol poisoning increased about twofold.

The health challenges facing Russia in terms of diagnostic groups include chronic disease (mainly cardiovascular diseases – the others are not very high), injuries, substance abuse and infections (TB, HIV/AIDS).

Coronary Heart Disease accounts for about 60 per cent of deaths (all ages). It is not entirely clear why these rates are so high. Rates of high cholesterol and hypertension are high, but they are not drastically higher than in Western Europe. There are very high rates of smoking in men. Somewhere between 50 and 70 per cent of men smoke. Rapid increases in smoking in young women have been observed too. There is a high prevalence of obesity in Russian women. Their mean body mass index is over 30 in the ages between 45 and 70. Interestingly, Russian men are not obese. The mean body mass index of Russian men is 27, which is respectable.

The issue is not so much the prevalence of high cholesterol and hypertension, but the level of awareness of the risks, and how many people are treated or controlled. Only 11 per cent of Russians receive treatment to

control cholesterol and hypertension, compared to a typical level of around 30 per cent in the West.

Injuries account for 13 per cent of deaths at all ages, compared to 6 per cent in the 'old' EU. For ages between 15 and 50, the level of deaths in Russia due to injuries is about four times higher than in the EU. If you walk on a street in Russia you are about 30 times more likely to be murdered than on the streets of London. Injuries are a hidden burden in Russia which rarely receive much attention in the medical literature. It is a societal phenomenon which is very difficult to control through traditional health care systems.

Substance abuse is similarly difficult to control through most health care systems. It is well recognised that the tobacco industry is re-writing legislation in Russia. If the government adopts legislation, it is reversed or revised. Around one third of Russian men are typically classified as binge drinkers or problem drinkers. The traditional pattern of drinking high doses of alcohol at one time is deeply ingrained. There is also an issue of surrogate alcohol – non-licensed drinks not intended for consumption. It's not simply an issue of eau de cologne and anti-freeze. There is a huge industry producing technical alcohol which is then distributed through informal outlets. The quality is often dubious. This is a marker of deprived social conditions. The WHO has produced a classification of countries based along patterns of drinking. Many post-Soviet countries are at the bottom of the scale.

Intravenous drug abuse is an enormous problem. The official government estimate is that there are 1.8 million intravenous drug users in the 15-64 age group. This is 1.8 per cent of the population in that age group. Non-government research might well show that these figures are an underestimate.

About 40 per cent of these drug users are HIV positive. Officially there are 400,000 registered cases of HIV/AIDS. However, official estimates talk about one million people who are HIV positive. The UN estimates the prevalence in the 15-49 year old age group is 1.2 per cent. The incidence of HIV/AIDS is about five times higher than in 'old' EU countries.

There is a high incidence of TB. The increase in the prison population has made a big contribution to this.

In the early nineties there was a breakdown in immunisation programmes in the former Soviet Union. The programmes are back on track and working reasonably effectively. This shows how a centralised system can deal well with some challenges, but not with others.

Social inequalities are a big factor in Russia. After the collapse of the Soviet Union, Russia had a relatively low GDP, but in contrast to Latin America, it had relatively low social inequality. In the event, Russia's GDP did not increase through the nineties, but social inequality increased markedly. This has had an impact on health. There was an enormous increase in educational differentials vis-a-vis mortality in Russia.

The transition in Russia in the early years was not managed well. Privatisation was quick and aggressive. Services and safety nets were undermined. The centralised planning routes did not help either. The government has focused on raising the birth rate, rather than lowering mortality. The alcohol problem was addressed late. The alcohol industry is strong and it is difficult to address these issues.

Russia's healthcare plans focus on high-tech development and infrastructure. There is little emphasis on prevention, or tackling the societal problems which underpin much early mortality. No clear targets have been set for reducing alcohol or tobacco consumption. The government is ignoring the 'causes of the causes' and failing to develop an inter-sectoral approach.

## China: Change and Health

### Dr Therese Hesketh, Centre for International Health & Development, University College London

In 1973, 20 per cent of deaths in China were due to communicable or peri-natal diseases. In 2003, this was down to 5 per cent. Deaths by non-communicable disease have almost doubled over the same period from 42 per cent to 74 per cent. There have been massive changes in patterns of mortality over this period.

Strokes are a big problem in China. It is a bigger killer than CVD. Injuries and communicable diseases are still significant in urban areas.

Cultural influences are important. Increased intakes of salt, fat, red meat all have had an impact. It is extremely hard to find data on the impact of alcohol consumption in China. Chinese use both table salt and monosodium glutamate (MSG). The average male in China has double the recommended dose of sodium a day. 18 per cent of all adults in China are estimated to have hypertension, about 170 million people. 30 per cent of them probably know about this, and 6 per cent are effectively managed (half the Russian figure).

There are around 800,000 fatal strokes a year. When one considers the non-fatal ones, and the incapacity these can cause, it is clearly a huge problem.

There have been changes from pre-transition cereal-based diets to those higher in processed foods. The latest figures suggest 23 per cent of Chinese adults are overweight, and 7 per cent are clinically obese. These figures are rising fast. The number of people who are overweight has gone up by 39 per cent and those who are obese by 97 per cent between 1992 and 2002. 30 per cent of children are overweight and 8 per cent are clinically obese. Research suggests the recent increase in BMI is not related to an increase in calorific intake, but an increasingly sedentary lifestyle. Only 15 per cent of urban Chinese adults exercised regularly in 2002. The hot climate makes exercise difficult.

In 2006, 57 per cent of Chinese men but less than 5 per cent of women over the age of 25 smoked. Generally, smoking amongst women is considered culturally unacceptable. The average number of cigarettes smoked is also high. Fifteen a day is the average, compared to 8-10 in the UK. There has, however, been some reduction in smoking over the last decade. 66 per cent of males smoked in 1996. The culture around smoking is changing. People are much less likely to smoke indoors than in the past.

When Deng Xiaoping came to power in 1978, the health system was allowed to become a market place. Central funding was reduced and local health authorities and regional governments had to find their own funding, largely by charging users in urban areas with various forms of insurance. Hospitals became financially independent and had to make profits. 75 per cent of hospitals in China are government run, but they still have to make a profit too. There is little difference in how public and private hospitals are financed, although public hospitals can get some funding from government for capital costs.

Most of the attention in the health sector in China is now going into the health reform programme. There is massive inequity in the current system, in terms of access to care and level of insurance. Most people who have insurance do not have full protection. Typically, perhaps 40 per cent of costs are covered. One never gets full reimbursement except government workers or former party officials. The current system is also incredibly inefficient. Because basic consultation costs are low, they make their money selling drugs. So there is an incentive to over-prescribe. There is also unnecessary use of diagnostic equipment. Research has shown that in one province, the government put a

cap on the cost of a CT scan (for diagnostics), reducing it by a third. As a result, the total number of CT scans has gone up in order to make profit.

There are too many health providers in the system currently. In a county of 100,000 people, a baby can be delivered in perhaps 20 different places, all performing a handful of deliveries. Pooling resources and expertise would increase efficiency markedly.

The poor quality of care at lower levels (such as village doctors) means people will go to high level care for minor ailments. There is little gate-keeping to manage patients and resources effectively.

China is facing an ageing population, but has not yet reached the stage of transition where degenerative diseases are a significant cost for the health service. China is good at some forms of prevention, but not delivering on the prevention of chronic disease. Smoking is a particular problem because 15 million people in China are dependent on the tobacco industry for employment. In Hunan province in southern China, one of the poorest provinces in the country, most of the peasants grow tobacco. It would be very difficult to undercut this industry.

China is trying to resolve the problems with its current health system, but is not devoting enough attention to the inefficiencies in the system. Evidence-based medicine is starting to be recognized. The problem is that if doctors move to evidence-based medicine they are going to lose money because they will be prescribing less. Provincial government must subsidise doctors whilst a transfer to evidence-based medicine is carried out.

China is certainly capable of addressing these issues. If it can introduce a one-child policy, it can do anything. SARS is also a good example. When it was acknowledged, life in China changed overnight. They quarantined huge numbers of people, introduced wide-scale travel restrictions and health workers were mobilized rapidly. The capacity to mobilize and respond with drastic and unpopular measures is a great asset which Western countries do not necessarily possess. The world is fortunate that SARS was concentrated in China, because the government is much more likely to be able to take the steps necessary to control its spread.

The health system is still unfair and inefficient, although the government is addressing this. Some measures have been taken to address problems of chronic disease, but they are half-hearted in a country which is famous for sweeping and transformative health policy improvements.

## The Implications of Demographic and Health Changes in China

### Professor Guang Shi, Director, Department of Health Policy Research, Ministry of Health, PRC

Life expectancy in China has increased greatly. Since the introduction of family policy planning, the fertility rate has decreased significantly, and is now similar to that of the developed world. There are several scenarios about the future population growth of China. It is projected that there will be 1.4 billion people in 2025, with 200 million people aged over 65, 14 per cent of the population. By 2050, there will be 380 million old people, accounting for 24 per cent of the population. This is a big challenge for China.

China is geographically the third largest country in the world, with foreign reserves of $1.9 trillion. The annual growth rate is 10 per cent. GDP per capita has increased from less than $300 in 1950 to $3,000 in 2008. China is benefiting currently from the large number of young, healthy, educated workers.

There is a deficiency in the social security system and pension coverage of employees in the formal sector. It is only 75 per cent. Only 10 per cent of rural residents have a social security system. Medical insurance was also very low before 2008. However, saving rates are high to cover education and medical costs.

China has learnt that an export-orientated economic development paradigm is unsustainable due to the ageing of the population. A levelling-off of labour income and lack of social security leads to 'unsustainable' development. China must build a people-centred development paradigm, with a balance of economic growth and social sector development.

China has the second highest number of TB cases in the world (1.5 million). 7 per cent of Chinese have Hepatitis B+, accounting for one-third of all infected people in the world. HIV/AIDS cases are estimated to be at approximately 650,000.

Non-chronic diseases are also a serious factor. 60 per cent of men smoke. 5 million people a year worldwide die from smoking-related illnesses. Of those, 1.2 million are in China. 350 million people in China smoke, accounting for a third of the smoking population in the world.

The rate of increase in diabetes in China is the highest in the world. In 2002, diabetes affected 6.1 per cent, 3.7 per cent and 1.8 per cent of Chinese in big

cities, medium-sized cities, and rural areas respectively. An increase of 40 per cent compared with 1996.

The high cost of healthcare in China presents a threat to social stability. The results of a recent survey in China put health reform as the top of the list of popular concerns, above education, social security and corruption. The goal of the most recent health plan is to provide basic, universal and free healthcare across the country by 2020.

## Discussion

There was debate on the advantages and disadvantages of authoritarian systems in providing advanced healthcare systems. China and Singapore both dealt well with SARS. However, the situation is very different with sexually transmitted disease – the Chinese government closed the brothels in the 1950s and ostracized those with venereal disease. At the same time, however, teaching of the dangers of sexually transmitted disease was removed from the school curriculum. When HIV appeared, they started to find cases in single women. By legislating against brothels but not removing the demand, it was simply driven underground. As a result, China appealed to the WHO for help because sexually transmitted disease was much more common than had been thought.

There was a discussion of the epidemiological heterogeneity within China, which does not exist to the same degree in Russia. In China, there are major differences between regions. Salt intake, for example, is much higher in the North. The stroke problem is also much more pronounced in the north and in inland provinces. There are marked urban-rural differences: Life-expectancy in Shanghai is close to 80, but much lower outside the cities.

Asked if epidemiological differences in Russia compared to Western Europe were attributable to genetic differences, it was pointed out that Russian scientists have so far studied 40 different polymorphisms (variations in genes) and they haven't found any differences from Western or Southern European populations, relating to cardiovascular diseases or chronic diseases.

In the West the whole concept of evidence based medicine is a mantra for health professionals. In Russia, it is very different. The system is based on authority. Lots of the measures which we take for granted are not applied.

In Eastern Europe and Russia before 1990 mental health was not something people talked about. After 1990, there was a big change. It is less stigmatised than it used to be, but still worse than Western countries. Research suggests

that mental health levels have remained relatively stable over the last 15 years. Depression rates are high. 45 per cent of women and 35 per cent of men report distress, which many in Europe would classify as depressive symptoms. But what it means in terms of morbidity is unclear.

## Panel Three: Demographics

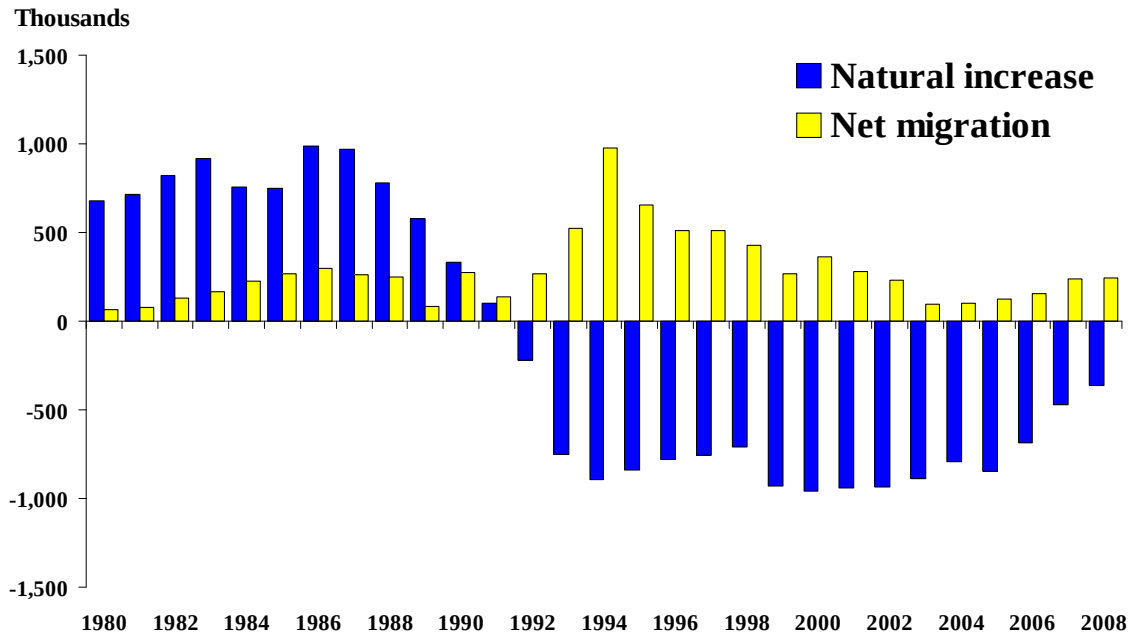
## Demographic Change in Russia

### Tim Heleniak, University of Maryland

2008 was the 'year of the family' in Russia. There has been a large amount of social marketing recently promoting family and family values. There is a great deal of anecdotal material about the so-called demographic crisis. Two things this material has in common is that it is quite negative, and it is often written in emotive language, both by Russians and westerners.

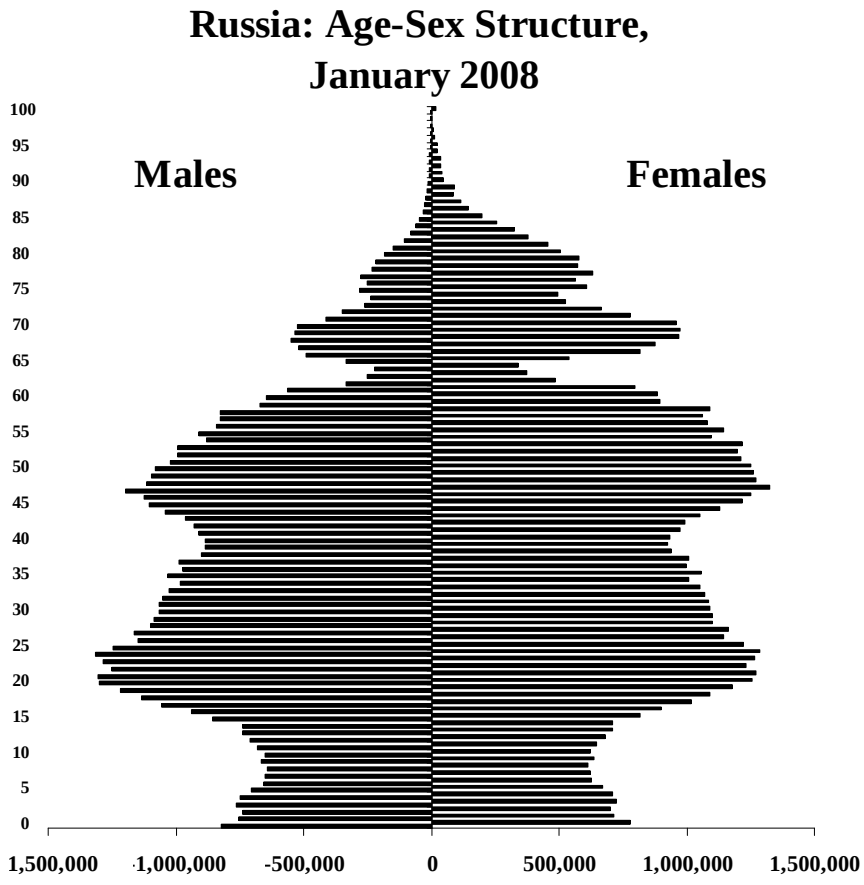
The chart below shows what has happened to population change over the last thirty years in Russia.

**Russia: Net Migration and Natural Increase, 1980 to 2008**



Throughout the 1980s the Russian population was growing, as a result of both net migration and positive natural increase. Starting in 1991/1992 deaths started to exceed births. There was some increase in in-migration at that time due to the break-up of the Soviet Union. By around 2000, deaths were exceeding births by around 900,000 a year. This is when a lot of the pessimistic population forecasts appeared. Recently, population decline is slowing and population size seems to be stabilizing due to more births, fewer deaths, more immigration and less emigration. Last year saw the smallest population decline in Russia in the post-Soviet period.

If we look at the age-sex structure of Russia in January 2008 (graph below), we can see a bulge centred around ages 20-25. This was the result of birth-encouraging measures in the late Soviet period. A variation of this eight years ago showed each successive cohort getting smaller, to the point where it looked as though Russians would stop having babies entirely. However, from these figures we can see an increase in births in the bottom age bracket.



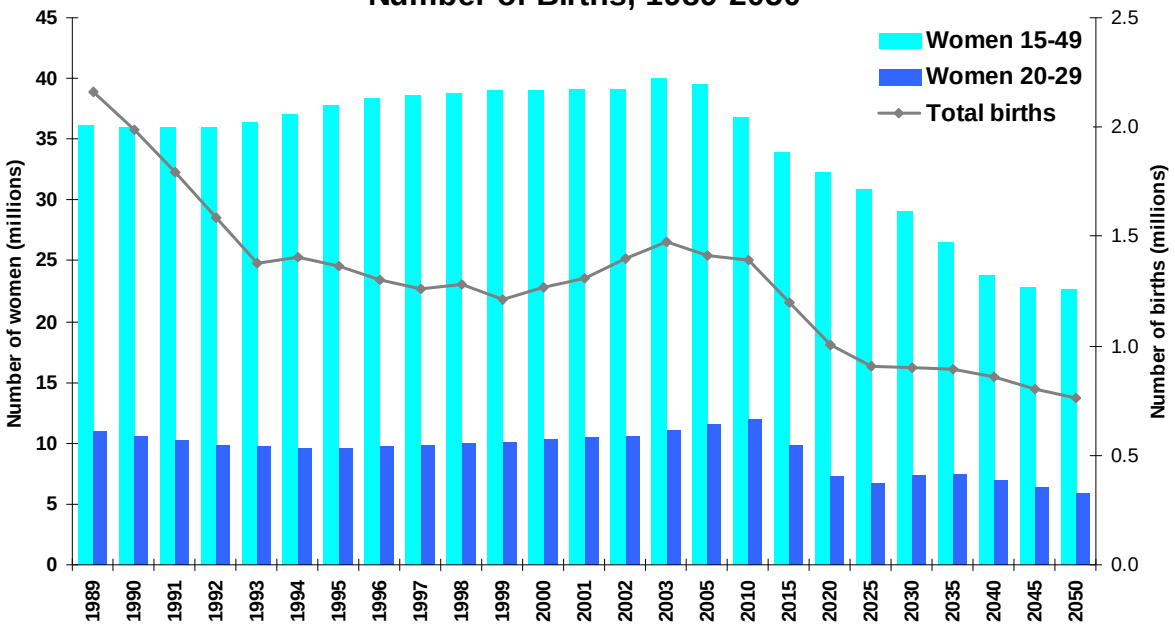

By the 1960s, Russian women had essentially completed the fertility transition and settled into the pattern of having two children per family. They married

early, had their children early, and then used abortion predominantly as fertility regulation afterwards. In the late 1980s there was a rise in fertility. Most demographers argue that the level of completed fertility remained about the same, but in response to these measures women had their children earlier, and this partially contributed to the decline in the 1990s.

There is some evidence that women are shifting from a two child to a one child family. 2008 was the largest birth cohort in the post-Soviet period. This is not really attributable to birth-encouraging measures but more to do with economic growth. Fertility is still only at 1.4 children per couple, which is someway off the 2.1 replacement level, so the population is still declining. Russian women are moving towards a 'western' pattern of later marriage and childbearing and increased use of modern contraceptives. In the Soviet period, health care was a low priority and contraception was hard to get. An abortion culture was prevalent across the Soviet Union. There is some inertia in the former-Soviet Union in terms of the high level of abortions. Levels of abortion are still amongst the highest in the world.

In the next couple of years, the number of women of reproductive age in Russia is going to decline considerably, especially women in their 20s. This will result in a decline in the number of births. Even if fertility were to rise and Russian women were inclined to start having more children, the number of total births is likely to decline.

**Figure 12: Russia, Women of Reproductive Age and Number of Births, 1989-2050**




**Sources and notes: Data on the number of women and births by for 1989-2003 are from UNICEF, TransMONEE Database and Goskomstat Rossii, Demogaficheskiy yezhegodnik (various years). Data on the number of women for 2005-2050 are from UN Population Division, World Population Prospects: 2004 Revision. Data on the number of births are estimated by applying the 2001 age-specific fertilty rates to the number of women in each age group. The TFR in 2001 was 1.25.**

Turning to mortality, there were improvements in life expectancy during the Soviet period until the mid 1960s. Until this point, life expectancy was about equal to the US and most of Europe. It effectively stagnated after that. The Soviet Union took care of infectious diseases but could not cope with the change in disease patterns that resulted from this.

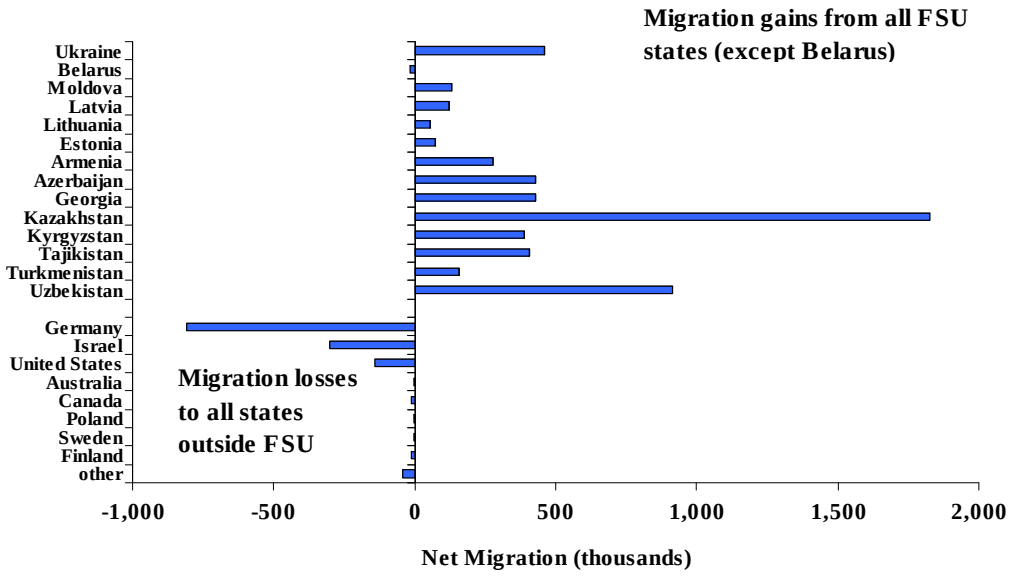
Russia currently has the largest male-female mortality gap in the world. Women on average die thirteen and a half years later than men. Russia ranks 27$^{th}$ in the world by rate of women smokers, but has the highest male smoking rate in the world. Russians have the fifth highest level of alcohol consumption in the world (both sexes combined). It also has among the lowest male-female sex ratios in the world. Ukraine is about the same. This is not a new phenomenon. As far back as 1927, Russia had a low male-female sex ratio, with around 90 males for every 100 females. This has no effect on the marriage market as the sex ratio tends to be about even at this point, but Russian women live for a long time as widows.

There is a large and increasing burden of mortality caused by diseases related to the heart and circulatory systems. As pointed out earlier, cancer does not account for as many deaths as in the West. Essentially, people die of other things before cancer tends to develop. Many Russians don't live long enough to get certain types of cancers.

Russia has the second highest HIV incidence rate in the world (to Ukraine). Estimates put the true number at 1 to 1.5 million HIV-positive. A set of projections by the US Census Bureau show that by 2020 there could be between 5 and 15 million people infected, with 250,000 to 650,000 annual deaths. In the first half of this century, according to these projections, HIV/AIDS will account for 8.3 per cent of deaths. These levels are not low, but nor are they comparable to East Africa.

The break-up of the Soviet Union added some 28 million to the world migrant stock. This was 9.8 per cent of the Soviet population. Russia has the second largest number of migrants in the world after the United States. About five million of the current 14 million migrants are 'new' migrants – they came to Russia in the post-Soviet period. The rest migrated to the Russia during the Soviet period. Russia has become the migration magnet within the region.

**Russia: Net Migration by Country, 1989 to 2007**




**Source: (Goskomstat Rossii 1995, 1999, 2003b, 2005a, 2007b).**

Actual figures for migration may be higher, as there is undocumented, illegal or temporary migration. Russia has gained people from most of the former Soviet states. There has also been a lot of talk about a brain-drain from Russia to the West. But overall, Russia is gaining a lot of well-educated migrants from the other Former Soviet states. In particular, migrants have come to Russia from Kazakhstan, Uzbekistan and Ukraine, Azerbaijan, Tajikistan, Georgia, Armenia and Kyrgyzstan. The main migration losses from Russia have been to Germany, Israel and the United States, in descending order of magnitude.

In terms of migration policy, in the early post-Soviet period Russia gave assistance to 'forced migrants', Russians who were 'stranded' in the 'near

abroad'. A Federal Migration Service was created in June 1992. During the 1990s, movement was relatively free within the former Soviet Union. The 1992 Bishkek Agreement established visa-free travel among CIS states. In 1993, the *propiska* system was abolished. Laws on refugees, involuntary migrants and foreign labour were introduced. From 2000, not coincidentally when Putin came to power, more control and regulation of migration was introduced. Russia opted out of the Bishkek agreement in favour of bilateral labour migration agreements for greater control. More recently, from 2007, there has been discussion of the need for 'replacement migration' –to compensate for population decline.

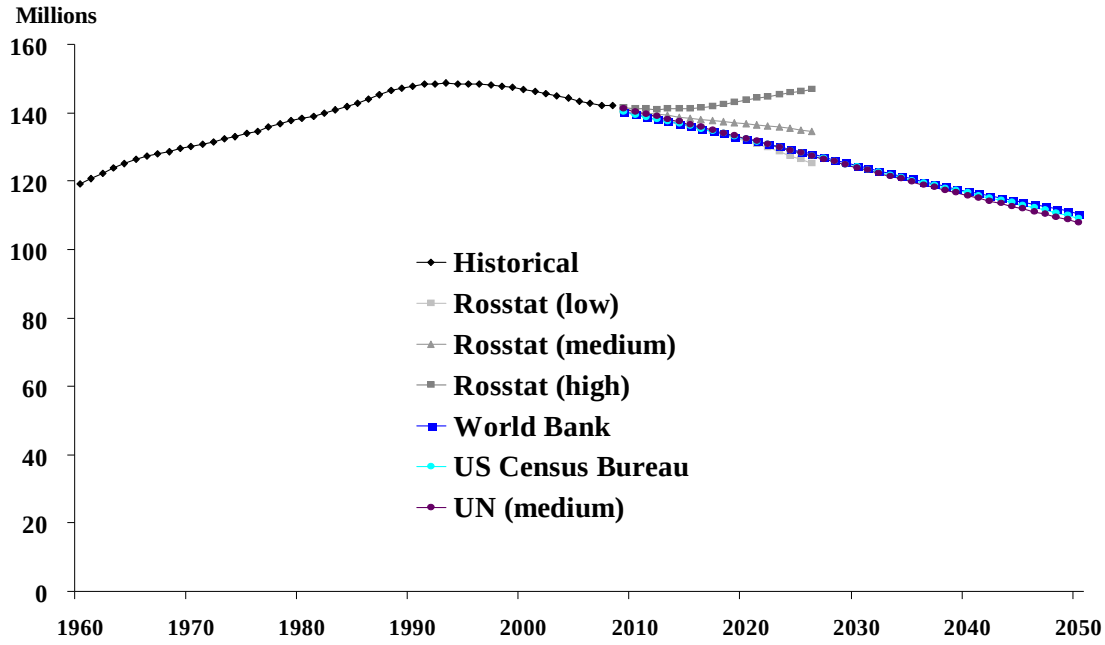
In the future, demographics will be a major determinant of migration across the region. The population of the southern former Soviet Union, which provides most of the migrants to Russia, is converging with that of Russia (the former is rising, Russia's is falling).

In terms of the spatial distribution of the population, within Russia there has been substantial migration out of the Russian North, out of Siberia. There is evidence of movement up the urban hierarchy, to big cities like Moscow, St Petersburg and Novosibirsk. The 2002 census indicated there were 13,000 'ghost towns', which had been virtually abandoned.

In the Russian Far East the demographic destinies of Russia and China also meet. The number of Chinese in the Russian Far East is greatly exaggerated in the Russian media. Fears of a Chinese take-over even more so. One hears ridiculous claims that there are 2 million, or even 5 million Chinese in the Russian Far East.

According to the projections of the UN, Rosstat, the US Census and the World Bank, the fertility rate is going to rise. However, under any scenario, it will not reach the replacement level. The implicit assumption in most projections is that life-expectancy will rise asymptotically to some pre-determined level. At the time of the break-up of the Soviet Union, Russia was the sixth largest country in terms of population. It is now ninth. The graph below shows projected population size. By 2050, Russia will be the 19$^{th}$ largest country by population size. This has implications for the military. The number of draft-aged men has peaked and is expected to be cut roughly in half by 2017.

**Russia: Historical and Projected Population, 1960 to 2050**




Sources and notes: Historical data are actual through 2008 and projections after that. See text for sources.

Vladimir Putin raised the issue of population decline in his first state of the nation address, warning that Russia could become a 'senile nation' and that the population could shrink by another 22 million in the next 15 years. Fear of population decline is not new. A French demographer in the mid-1970s said that with the aging of French society France will be comprised of 'old people, living in old houses, ruminating about old ideas'. In 2006, Russia introduced a Concept on Demographic Policy to 2025 to be implemented 2008-2010. Medvedev is likely to continue the demographic policy agenda laid out by Putin. In his first state-of-the-nation address in November 2008, he reemphasized the importance of raising educational levels, healthy lifestyles, ethnic tolerance, increased internal mobility, and regulation of immigration, including recruitment of highly-skilled workers.

The major demographic challenges are a decline in the quality of health and education, the large burden cardiovascular diseases and external causes, as well as the spectre of TB and AIDS; the migration of non-Russians from the near and far abroad. Russia will face significant challenges integrating a large number of migrants into society. There are increasing disparities in terms of health and education. The economic crisis has led to shortfalls in funding for some. The next census is scheduled for October 2010. Population decline seems inevitable.

## China's Uncertain Demographic Present and Future

### Professor Wolfgang Lutz, World Health Programme, Institute of Applied Systems Alliance

To put the Chinese and Russian experiences into context, while the 20th century was the century of population growth (with the world population increasing from 1.6 to 6.1 billion), the 21st century will be that of population ageing (with the proportion above age 60 increasing from 0.10 currently to 0.25-0.45 by 2100). The world as a whole is likely to see the end of population growth this century. But we will see a demographically divided world with further rapid population growth in Africa and Western Asia while Europe and East Asia will be concerned with rapid ageing. Eastern Europe is the first region of the world to experience real population decline.

To forecast population we require data on the current levels by age and sex for each region. We need to make assumptions on the three components of change: fertility, mortality and migration. The paths of all three factors are uncertain.

The graph (below) shows the projected population in billions for the Asian region encompassing China, Hong Kong, Cambodia, Laos, Mongolia, North Korea, Taiwan and Vietnam.

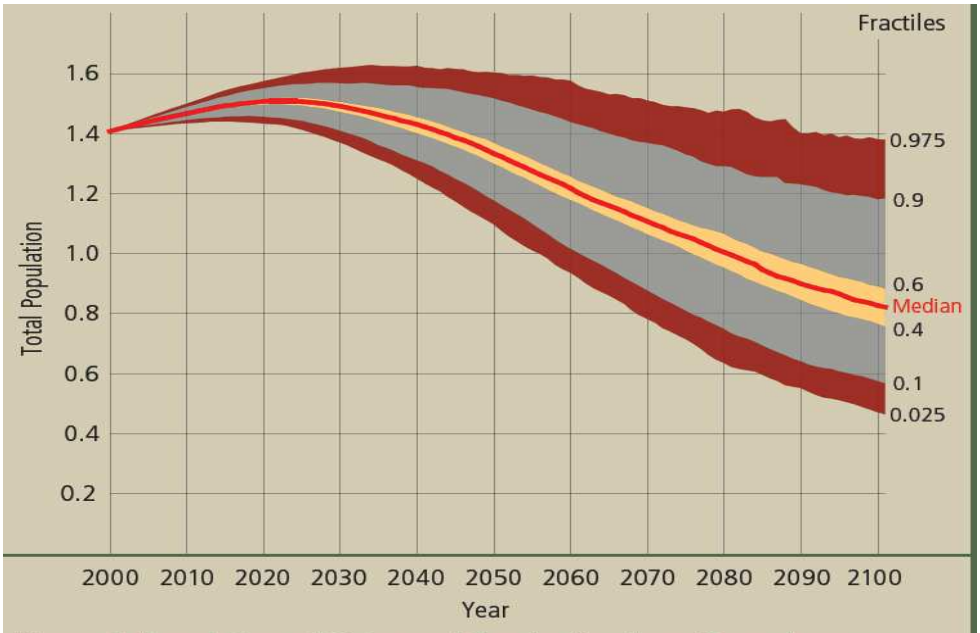
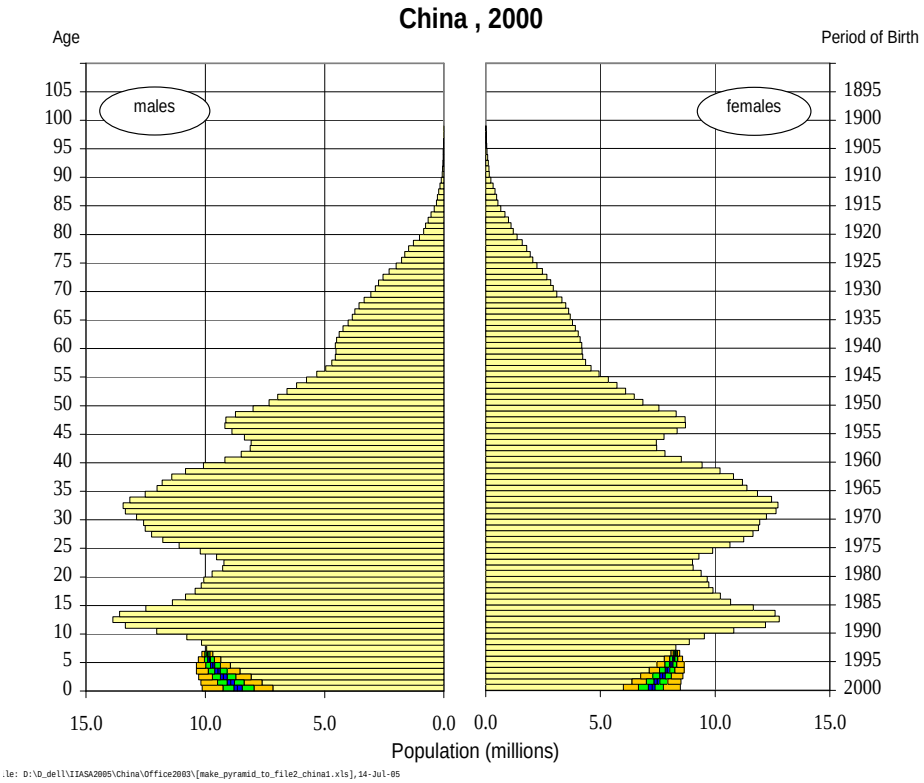



Figure 4. Population of China and Cambodia, Hong Kong, Laos, Mongolia, North Korea, Taiwan, Vietnam, in billions.

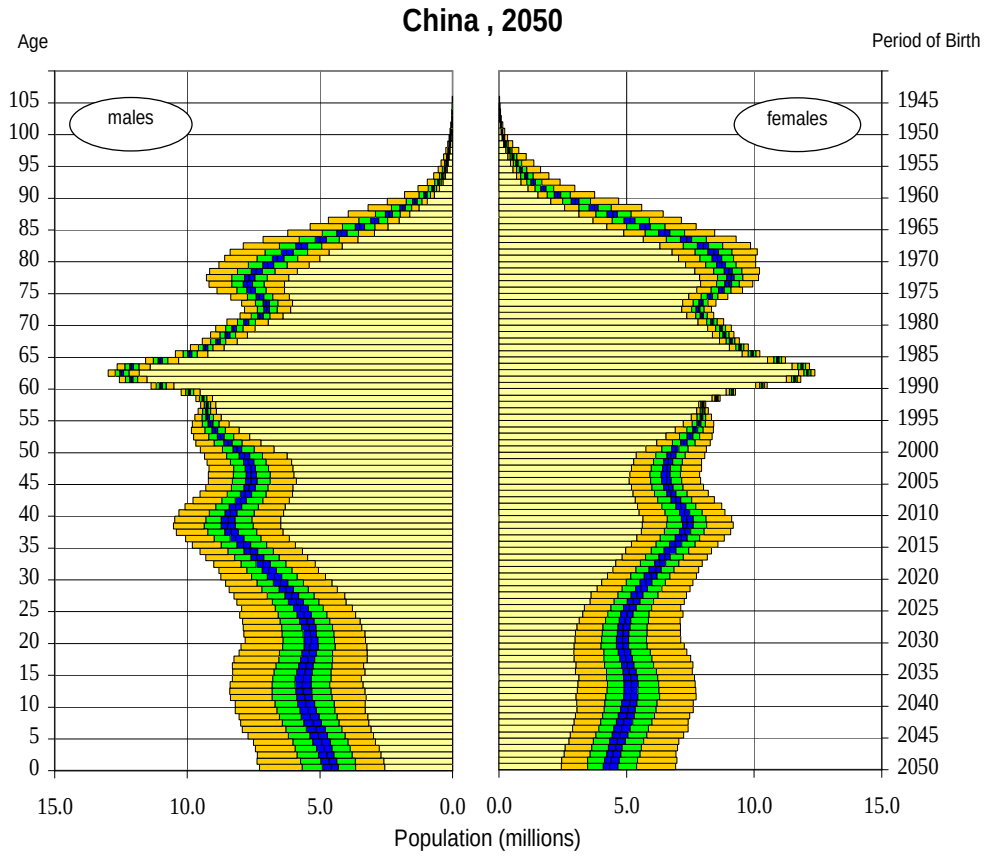
There is a high probability that the population will continue to grow over the next twenty years. This reflects the young age structure of the population – ie. More potential mothers of child-bearing age. After this, there is a very high probability that the population of China will shrink.

The key questions when projecting China's population are: what is the current level of fertility in China? It is not clear what the current fertility rate is in China. The official estimate in 2000 was 1.22. More credible research suggests the fertility rate is somewhere in the region of 1.5. How low will fertility fall in the future? What is the current sex ratio at birth and how will it change in the future? Everyone agrees the ratio is higher than usual because of positive selection, but the exact scale is disputed.

Below is the age pyramid of China in 2000.



Compare this with the projected age pyramid in 2050:



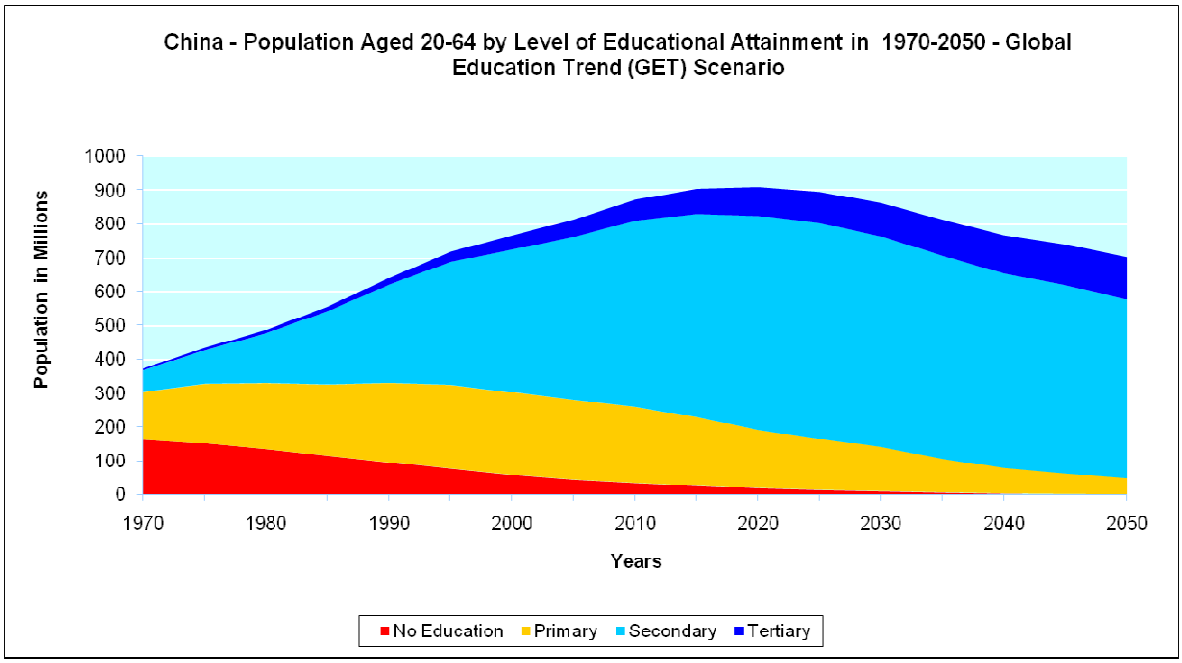

We see a very strong dominance of those born between 1985-1990. There is very little uncertainty about the size of the population in this bracket. For older generational groups, the uncertainty reflects different scenarios for future mortality levels. There is a big controversy over whether we are going to see a continuing increase in life-expectancy or some levelling off. There is also uncertainty over future fertility.

In all likelihood, there will be a rapid decline in the population of China under 15 years, from almost 25 per cent to around 12 per cent of the population. The proportion of the population over 65 is likely to increase substantially. At the moment, 8 per cent of the population is over 65, which is low compared to European countries, but this will increase by a factor of three or four. If life expectancy continues to increase, it will be towards the upper end of this distribution. If one looks at the proportion of people over 80, there is a similar picture, but the increase will come later, and there is greater uncertainty about the projections. Depending on mortality, the proportion of 80+ year olds will be between 10 per cent (still five times higher than today) and 30 per cent. From today's perspective, such a high proportion of elderly people seems impossible, but of course

this will only happen if the mortality rates continue to decline as they have.

If we consider population in relation to education, it is clear that the uneducated in China are now all elderly. There have big increases in secondary education provision. If one projects forward to 2025, the proportion of those who will have received secondary and tertiary education matches closely what we see in Singapore today, a highly developed, highly educated country.

Future elder generations will be better educated. This will have beneficial effects on their health. However, the key question is what age they will retire. We must assume there will be an increase in retirement age. In the graph below, we see the Chinese government has done an excellent job at increasing educational levels, at a time when the overall population of the country was increasing substantially.




We can see that the population of China will peak around 2020/2025, but this future population will be much better educated and therefore more productive. If we compare with the other population billionaire, India, the picture is different. Nearly half of India's population still has no formal education. India will surpass China in terms of population, but will be much further behind in

terms of human capital, and therefore, in terms of economic development. India is investing more in tertiary education. It is also more elitist. By 2015/2020 China will have more people with secondary or tertiary education than the whole of Western and Eastern Europe and North America put together, although the US will still have more people with tertiary education. This will inevitably lead to changes in economic and political balances of power. Russia has a highly educated population, but extrapolating current trends, by 2050, Russia will be dominated by highly educated women aged 60-75. The sex imbalance is extraordinary.

There is an assumption that an ageing population will lead to disability and incapacity. This is not necessarily the case – there are strong educational differentials. If we compare 'activities of daily life' score (a disability score) for East Asia mapped against age and education, it is clear that the level of education has a major impact on disability as people grow old. If we consider that China's population is growing steadily more educated at the same time as the number of old people increases, simulations suggest that there will not be a great increase in overall disability.

Education is the key driver of economic growth, and has a strong impact on health. Education leads to lower child mortality, lower birth-rate and better health. In the medium term it leads to higher economic growth, and in the long run it leads to better health of the elderly.

## Discussion

A question was asked about whether a smaller population and improved education is necessarily better for the environment. The West has a lower fertility rate and better education rates than China or India, but consumption per capita is higher. It was argued in response that one must not only consider the emissions aspect, but also adaptive capacity. A poor, badly educated population is going to be less well equipped to deal with the impact of climate change, for example. Nevertheless as fertility declines, ageing increases, which leads to more emissions because part of the emissions is household-specific. The elderly tend to live alone, which is a less efficient form of living. The picture is very complex. If one factors in education, this leads to a higher economic growth, but we have to make sure that energy efficiency matches this.

Asked about the impact of a loosening of the one-child policy, one analyst argued that it would not necessarily have a big impact. Evidence suggests many Chinese living in urban areas do not want to have more than one child.

There is a socializing effect – those from single-child families often only want small families themselves. This is called the 'low fertility trap hypothesis' – high fertility is no longer associated with success or fulfilment.

What is the correlation between economic circumstances and population size or decline? Russians seem to be particularly susceptible to economic crises – not just the fluctuations in GDP, but also economic restructuring. Decline in the Russian male population appears to mirror economic growth, but it also accompanied a rapid restructuring in society, and men's role within it. It is too early to tell if the current crisis will lead to an increase in mortality. It depends whether the crisis is one of decline or total restructuring. In the US, the Great Depression did not cause a fall in life expectancy. It was not until four or five years afterwards that there was a fall in life expectancy.

The impact of economic growth on mortality and fertility is different. On the mortality side, it is social development rather than economic cycles which are the key. Cuba has higher life expectancy than the United States? With respect to fertility, the situation is even more complex. It is related to the traditional normative system, together with economic opportunities for women. A combination of traditional family norms – where it is unthinkable for a mother to work outside the house and have children at the same time – combined with economic opportunities for women. This means women have a zero-sum choice, either they go out and make a living, but then they don't marry and have children, or they go for the traditional route. This is why in Southern Europe and East Asia, where this combination exists, the birth-rate is low. Whereas in Northern Europe, where social norms are more relaxed, women don't have to make such a stark choice.

## Panel Four: Implications for Foreign Policy and International Cooperation of Health and Demographic Challenges in Russia and China

### Defining Global Health Security

### Dr David Heymann, Head, Centre of Global Health and Security, Chatham House

Dr Heymann began by defining how to best frame health security. There are two issues. The individual level, which includes access to healthcare, vaccines and medicines, and the removal of obstacles to health. There is also collective health security, which is focused on the activities required to

minimize vulnerability to pandemics which endanger the collective health of populations, such as influenza A.

There are many underlying factors which influence both. In terms of the individual framework, important factors include: health infrastructure, health financing, the affordability and quality of medicines, and anti-microbial resistance. On the collective side, there is an economic impact, an international spread, and deliberate abuse.

Underlying factors include demography, climate change, human-animal sector tensions, (for example, when a Ministry of Agriculture doesn't want health concerns to dominate the agenda and threaten agricultural commerce.) Intellectual property and the inequitable distribution of wealth are also both important.

Looking at TB in Eastern Europe, for example, we can see how this affects foreign policy. There has been a marked increase in TB in Eastern Europe in recent years. There are naturally drug-resistant bacteria to TB. These are selected out when improper treatment is given, they become dominant and cause drug-resistant infection. Those who have resistance can pass it to others. Russia has been monitoring TB for many years with support from international groups. Increasingly, there is multiple drug resistance (MDR), especially in Russia. At the same time, new infections with MDR are increasingly important in Eastern Europe and Russia. The underlying cause is limited access to the correct medications in prisoners. The same genetic strains of MDR TB have been found throughout Europe. This is an important issue in global health security. There was a major outbreak of drug-resistant TB in New York, which was genetically related to bacteria from Russia. We can see the individual need to get good treatment because of the resistance, but there is also a global aspect to this.

If we look at SARS, this was an issue in collective as well as individual health security. On 21 February 2003, a doctor who had been treating patients with an unknown repertory disease in Guangdong province went into Hong Kong and stayed one night in a hotel. As a result of that stay, he infected people who went to Canada, Ireland, the US, Singapore, Vietnam, Bangkok, with a new infection which had not yet been identified. We now know that was SARS. We also know that it spread easily with air travel. The WHO made recommendations to limit travel to areas which fitted various criteria for SARS and the outbreak was curtailed. The outbreak was stopped because of international efforts, and also because it never got into countries with weak surveillance systems such as sub-Saharan states. The outbreak also had an

economic impact. The importance of the issue is indicated by the fact that the Chinese deputy prime minister became health minister and visited the WHO on a number of occasions to seek guidance on how China should respond.

Finally, one must also consider the deliberate use of microbial agents to cause harm. In 1979 there was an anthrax outbreak in Sverdlovsk due to a breach in a biological weapons factory. This was the first time the world had proof there was engineering and production of biological weapons. Small pox is also feared for bio-terrorism. Small pox was targeted for eradication in 1967, when over 3 million people were dying of the disease every year. Those who survived were severely disfigured. In 1967, small pox was endemic in 31 countries, mainly in the Southern hemisphere due to inequitable distribution of the vaccine. Vaccines were available in developed countries and it successfully protected the population. The international community succeeded in coming together to vaccinate those at risk and small pox was eradicated in 1980. After eradication, the virus remained. Laboratories which were asked either to destroy the virus or consolidate it in two major laboratories at the Centre for Disease Control in Atlanta or the Koltsovo laboratory in Siberia. However, in early 2000, a Russian scientist testified before US Congress that small pox had been weaponised by the former Soviet Union, and that that virus was not only in these two repositories. This presents a major risk to the world, since people are no longer vaccinated.

We must 'hook' health issues into the foreign policy community, so that it better understands the need to be involved in these issues. There are some issues which the foreign policy community can better deal with than health workers.

## Discussion

One participant raised the issue of how corruption and the inadequacy of domestic institutions impacts on international health cooperation. There is a major UN effort which directs a lot of attention to AIDS, and in one former Soviet country, the specialists were so concerned about the level of corruption, they were questioning how involved they could be.

Another participant underlined the impact of demographic change on national security. Demographic imbalances have been the cause of wars. Unexpected changes in the demographic balance between ethnic groups can have a significant impact on national and international politics.

One of the critical things in developing the concept of global health security is the need for domestic departments and ministries to understand that their own policy has to be formulated in a global context. Recognizing the intersection between a domestic health department and the foreign ministry is not easy. It took the UK ten years to develop and publish a global health policy, which now states that we live in a borderless world, and that it is a moral imperative of the government to protect the health of its people by operating in an international context.

Public health communities need better channels of dialogue with those in the security and foreign policy community. Their languages are different, potentially their values are different, and issues of national self-interest often sit uncomfortably with those who operate in health. So, developing a dialogue is essential. In addition, the international business community needs to be tied in to the discussion. Quite often, they are seen as a separate group with different values. But without a partnership between government, business and health professionals, global health projects will not be effective. For example the WHO Convention on tobacco required the health community to relate to foreign affairs and to trade.

The UK has been one of the most advanced in terms of its thinking on global health security. By contrast, the Bush administration in the US has shunned all multilateral frameworks in favour of bilateral agreements. Bilateralism does not work in the context of a global health agenda. It is dangerous, in fact, as it encourages a false sense of security vis-à-vis global threats.

There are at times cultural differences between a health community which sees health in terms of human security, where health is a universal public good in its own right, and foreign ministries or security sectors which tend to see health in terms of national security, and health promotion abroad in more instrumental terms and a foreign policy tool. Sometimes the two overlap – health promotion in Afghanistan can meet basic human needs and improve the image of occupying western forces. However, these aims need to be very clearly separated.

There are three main major obstacles to international health cooperation. It has been suggested that China is reluctant to take on a leading role in international health cooperation. But in the wake of the financial crisis, there is a growing self-confidence in China. China in the future will not just be a responsible stake-holder, it will be a leading stake-holder. The second obstacle is the issue of opaqueness and transparency. It is difficult for countries to admit they have health problems, that there are massive

shortcomings in their health systems. In the 1990s in Russia, HIV/AIDS was seen as an exclusively western disease polluting Russia. Attitudes have evolved, but it is still a difficult issue. Likewise, it was hard for China to admit problems with SARS, or the HIV scandal in Henan Province. Health policy has to be seen as part of the general socio-economic development of a country. As countries become more transparent, then they will generally be more open to cooperation. Finally, there is a problem of national stereotyping. When there was a leak of benzine in the Songhua river in 2005 which eventually reached Khabarovsk, it confirmed in Russian minds the image of China as a dirty country, which does not carry out fundamental safeguards. It is important to recognize these stereotypes and move beyond them.