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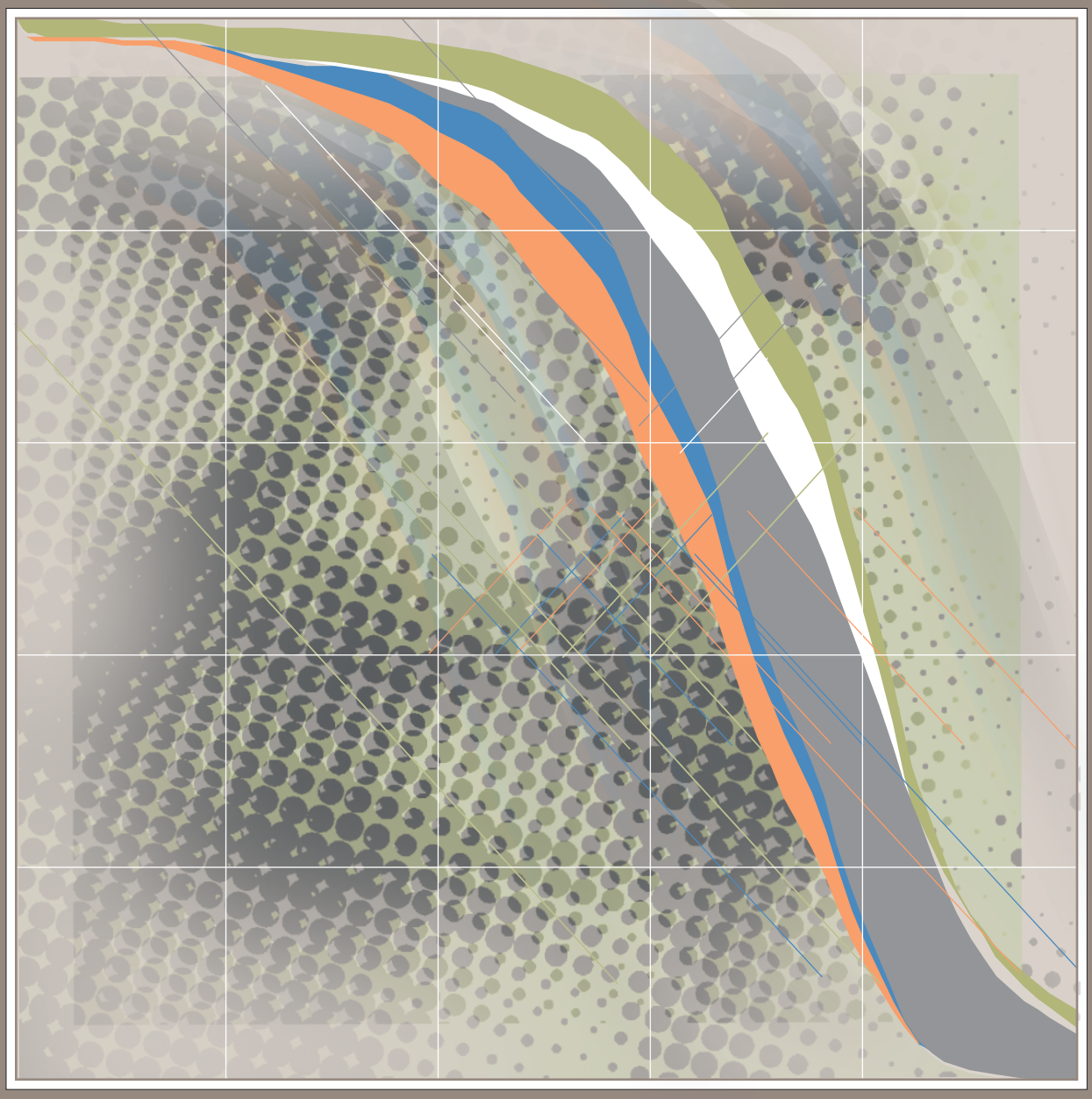
Edited by
Landis MacKellar, Elena Andriouchina, and David Horlacher



IIASA

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Contents

Abstract

"Policy Pathways to Health in the Russian Federation" was the name given to a project implemented in 2002-04 by IIASA in collaboration with the Institute for Socio-economic Studies of Population of the Russian Academy of Sciences. The core activity of the project was organizing a workshop, held at IIASA in September 2003, at which international and national researchers and policy makers shared information and insights. Through workshop papers and discussions, sources of the poor health situation in Russia ranging from bad health behaviors to inadequate health care financing were discussed and analyzed. The focus throughout was on possible policy responses.

This IIASA Interim Report presents the Proceedings of the Workshop, followed by the workshop program and list of participants given as Annexes 1 and 2. The presentations published here are condensed versions of project papers available at the workshop web site http://www.iiasa.ac.at/Research/RMS/TACIS03/?sb=19.

Acknowledgments

The workshop whose proceedings form the core of this IIASA Interim Report was organized by the International Institute for Applied Systems Analysis and the Institute for Socio-economic Studies of Population of the Russian Academy of Sciences with the support of the European Commission (TACIS Seminars and Conferences, through EuropeAid/114135/C/G/TAC), the Austrian Federal Ministry for Education, Science and Culture, and the Russian Committee for Systems Analysis. The organizers are especially grateful to Dr. Judith Shapiro of the New Economic School, Moscow and Dr. Serguei Sourkov of the Independent Institute of Social Policy, Moscow, for helping to arrange background interviews.

About the Authors

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1. Introduction

The goal of the IIASA-Russian Academy of Sciences project "Policy Pathways to Health in the Russian Federation" was to improve the long-term health of the Russian population through a better understanding of the causes of current high levels of mortality and morbidity in the Russian Federation and the policies and means to address them.

The central activity of the project was holding an international workshop of the same title at IIASA in Laxenburg, Austria, on 19-21 September, 2003. The immediate goal of this workshop was to present preliminary work on various health issues and to explore a research agenda with the following objectives:

1) Identify adverse health behaviors responsible for excess deaths and morbidity and current policies aimed at controlling them (examples include alcohol abuse, road accidents, high risk sexual behaviors, poor diet, stress and so on).
2) Consider the wider impacts of excess morbidity and mortality on the Russian economy (e.g., lost output, lower productivity) and also the impacts on current health care reforms and financing.
3) Consider how policies to reduce adverse health behaviors can be made to work more effectively by reviewing their impact, scope and consistency, and identifying alternative and complementary policy pathways.
4) Bring together the main stakeholders involved in policy design and delivery, to understand their individual contributions, how they interact and contribute directly or indirectly to the overall policy aim (e.g., a reduction in infectious diseases, road deaths, or homicide).

The workshop was aimed at three main groups: researchers working directly in the area including, but not limited to, economists, sociologists, and medical demographers in the public health community; policy advisors in Ministries; and political decision makers. Target groups were selected based on three criteria: those having (1) a strategic overview of the issues; (2) a research track record in relevant areas of policy; and (3) technical expertise in economics, medical demography and health financing.

This IIASA Interim Report presents the Proceedings of the Workshop, followed by the workshop program and list of participants given as Annexes 1 and 2. The

presentations published here are condensed versions of project papers available at the workshop web site http://www.iiasa.ac.at/Research/RMS/TACIS03/?sb=19. A few presentations, available as PowerPoint presentations but not as papers, are to be found on the web, but not in this Report.

Among the objectives described above, significant progress was made regarding Objectives (1), (3), and (4); less so regarding Objective (2). The reason for this is that it became clear during the round of expert interviews that little work has been done in this area apart from HIV/AIDS. The lack of work in part reflects scarcity of data and disagreements on costing procedures to be applied. Further, the lack of capacity to carry out multi-disciplinary studies, reflected in the low number of economists with some training in health, health care specialists with some training in economics, etc., also plays a role. Under these circumstances, it appeared wiser to concentrate on documenting causes of poor health and policy responses.

The project also pursued a number of subsidiary objectives:

- Raising the awareness in the policy community of the diversity of policy interventions that can affect health, and the need for better co-ordination, measurement and evaluation. Given the researchers and policy practitioners who participated and the range of health problems explored, there is little question that awareness was raised regarding the diversity of policy responses. Discussions ranged from the control of alcohol to epidemiological screening and surveillance; from accident prevention to broad measures to reduce corruption and the feelings of powerlessness that it engenders; from health care finance to measures to promote mother and child health, etc. A theme that emerged repeatedly during the workshop was the lack of agreement on basic data, sometimes revealed in fundamental disagreements between participants. The data theme came through perhaps most clearly in presentations on alcohol (Dr. Aleksander Nemtsov), HIV/AIDS (Dr. Vanessa Fuller), crime (Dr. Yuri Andrienko), suicide (Dr. Ilkka Makinen), and the health of homeless persons (Dr. Svitlana Stephenson). These data discussions were especially useful in light of the participation of a high-level Goskomstat official (PowerPoint presentation by Dr. Serguey Sourinov) as well as the Ministry of Health official responsible for all health statistics (PowerPoint presentations by Dr. Katerina Kakorina). Such dialogue between researchers and high-level officials responsible for data is rare in Russia.
- Obtaining external as well as internal perspectives on the success of similar policies both in Russia and internationally, building where possible on best practice. A number of presentations stressed international best practice and comparative international experiences. An especially salient finding (presentation by Dr. Leslie Mayhew) was that life-style variables, not the public-private split in health care spending, are the most important factors distinguishing good from bad international health performance. This suggests that almost any type of health system can be made to work adequately if it is well administered on the basis of adequate information flows, but it can deliver results no better than life style constraints permit. The presentation on smoking (Dr. David Rotman) presented unique international comparative data from the CIS countries on smoking. It highlighted, among other things, the increase in

smoking among women and the role of aggressive marketing techniques employed by international tobacco companies. Many other presentations contained substantial portions describing best international practice, e.g., harm-reduction programs for HIV/AIDS control.

- Identifying and sharing common techniques and analytical models developed in different disciplines but applying to the same generic set of issues. Through the workshop, participants were exposed to a range of methodological approaches from different disciplines to shared problems, for example, sociological, economic and epidemiological perspectives on suicide, crime and alcohol. The public health orientation of most workshop participants (a number of whom were medical doctors) was balanced by the presence of a number of economists, including a leading expert on the economic aspects of health care financing and provision in Russia (Dr. Sergei Shishkin).

- Contributing to discussions on health reform in the relevant areas of public health and health care delivery including prioritization and financing issues. The reform of health care financing was dealt with extensively through Dr. Shishkin's participation. Broader issues of prioritization were the theme of presentations by Dr Kakorina of the Ministry of Health, who presented Ministry plans and priorities, and Dr. Judith Shapiro, a leading expert on the political economy of health care in Russia. The key point made by Dr. Shapiro is that even cost-effective interventions require up-front investments and may therefore not be undertaken in an atmosphere of economic crisis. Those measures most likely to be implemented successfully under adverse circumstances are ones (like Universal Salt Iodization taken by Dr. Shapiro as an example) where an overwhelming multitude of factors, in addition to cost effectiveness, are positive and no significant interest groups are opposed.

A Russian-language synthesis (approximately 20 journal pages) of the research presented at the workshop is forthcoming in the journal *Narodonaselenie* (Population) published by the *Institute Socio-Economicheskich Problem of Narodonaselenia Rossiiskoy Akademii Nauk* (Institute for Socio-Economic Population Studies of the Russian Academy of Sciences).

Workshop participants, as well as experts in Russia who contributed to workshop preparation but were unable to attend, now comprise a network of researchers and Government officials capable of identifying and pursuing further work. One of the goals of making workshop papers available in shortened and consistent form in this IIASA Interim Report is to give participants and others standardized background material, including the latest references and data, for use when they prepare proposals for further work.

2. Welcoming

Welcoming remarks

Landis MacKellar
IIASA, Laxenburg

"Millions condemned to die as health policies fail," writes Reuters in a news release from yesterday. The news release summarizes a report issued by several blue-blood international NGOs. In case you couldn't guess, the report is timed to precede the annual World Bank / IMF autumn meeting.

Whether you agree with World Bank approach to health or not, the news release reminds us that the stakes in health are significant. While technical progress is creating new means of achieving better health, cost constraints and the bad health behaviors – persisting in the North, emerging in the South -- are limiting progress. Between rich and poor countries and between the rich and the poor within countries (*especially* within poor countries), important gaps in health have appeared.

These health gaps are that rarest of birds: something new under the sun. So far as historical and even paleo-demographers can tell, in the pre-modern era people across the world died at pretty much the same age and of pretty much the same sorts of things. Cromwell, some of you know, succeeded in catching malaria in Ireland, and he died of it. And within countries, before the modern era, rich and poor in New York City, in London, in Tokyo, or in Moscow died at more or less at the same rate from the same things – for example, in turn-of-the-century Philadelphia, the infant mortality rate of physician's children was about the same as that for the population at large, which suggests that money, class, and access to medical care was of limited effect. Another way of convincing yourself of this is to go poke around the Hapsburg burial vault downtown and see how young they died.

Nothing could be further from the situation today. At the global level, we are becoming a two-speed health world and, within individual countries, two-speed health societies. As technology advances – and, as my physician friends tell me, especially as the fruits of the human genome project become available – the divergent tendency will only become stronger.

There is something else that is new under the sun. For the first time ever, people in all but the poorest countries are more or less choosing the time of their death ... or at least pulling it forward or pushing it back greatly. Their choice is made by the decision whether to smoke, how much to drink, what sort of diet to consume, whether to take illicit drugs and whether to limit their sexual activities to the low-risk category. And, not surprisingly, those at the top of the social scale, whose life is altogether pleasant, are choosing a healthier portfolio of habits than those at the bottom. Or, some on the left would say, the poor really don't have that much choice at all.

We can only break off a small piece of the global health puzzle in the next few days, but it is an important one: health deterioration in a major world power whose health system used to work not terribly well, but not abysmally either, and what to do

about it. We are here to trade ideas, to present papers that are in many cases first drafts, and to bounce ideas off each other. Howard Raiffa, the first Director of IIASA, once said that this was the only institute in the world where you could be listened to seriously when you didn't know the first thing about the subject at hand. Let's keep up that tradition of enthusiastic informal dialogue. Great ideas and major activities are sometimes born out of such chaos.

The idea for this workshop was born two years ago over lunch at the Laxenburger Hof at which, among others, Les Mayhew, David Horlacher, and Elena Andriouchina were present. The idea of doing work on Russian health was proposed. This in turn led to a proposal to the European Commission TACIS Seminars and Conferences program, whose representative regrettably cannot be present today and to the Austrian Federal Ministry for Education, Science and Culture. The funding of these agencies, as well as the support of the Russian Committee for Systems Analysis, IIASA's Russian national member organization, has made this workshop possible. Susie Riley and the staff of the IIASA Office of Sponsored Research made a strong contribution to this effort.

In putting the workshop together, we turned to our old IIASA partner the Institute for Socio-economic Studies of Population, represented here today by Academician Rimshevskaya. I would also like to pay special thanks to the Independent Institute for Social Policy in Moscow, which greatly facilitated our work there. Finally, in the acknowledgements department, we do not have favorite participants, but I must say that Judith Shapiro was exceptionally helpful in informing our work.

In closing, I need not advertise Vienna to this group, but I would like to inform participants that Saturday is the famous *lange nacht die museen* during which all of the museums are open all night for the price of entering one. I hope our activities, intellectual and social, will not be so strenuous as to preclude a late night for some of you in the museums and *gasthäuser* of Vienna.

Welcoming remarks

Natalia Rimashevskaya
Institute for Socio-economic Problems of Population, Moscow

The need for a program to improve Russian health

The purpose of the present workshop is to sum up results of the work carried out by most participants in different directions, with the aim of formulating and substantiating a system-wide program for development of policies to improve population health in the Russian Federation.

First, what is health? When defining individual and public health, it would be reasonable to proceed from the formula given by the World Health Organization: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"[1]. Health status reflects the ability of a human individual or a human population (country, region, district) to adapt to changes in living conditions affecting the organism; actually it is an accumulated capacity that can either grow or decrease. The state of health estimated by indicators of mortality, morbidity, and disability, gives but a relative notion of the existing situation (dead versus alive, sick versus well, disabled versus able), characterizing rather the *ill* health of the population. Clearly it is important for us to assess the *health* of the population as well.

There is no doubt about the urgency of implementing a program to improve Russian population health. Despite the large amount of research that has been done -- and I mean not only purely medical or pharmacological studies aimed at investigating disease etiology, also but socio-economic research carried out within the context of public health -- the health of the Russian citizens is deteriorating. It grieves us all. And reform of the health care as a branch of the social sphere is making no headway; it is "one step forward, and two steps back."

My main propositions for a project aiming to draft such a program are based on a series of case studies in the field of health, which we started to carry out as far as in the 70s. and deserve very careful consideration. Among these studies were the following:

- A quasi-longitudinal survey of the individual health potential of population within the frames of the Taganrog studies over the period of 1980-2000, i.e., during the last 20 years of the past century.
- Socio-economic monitoring of children's health from the moment of birth in the regime of real time (Vologda oblast, the cities of Vologda, Cherepovets, Kirilov, Veliky Ustyug, Vozhega), started in 1994 (the first birth cohort).
- A series of studies in the field of reproductive health.

[1] World Health Organization: <www who.int/asout who/cn/definition.hml>

- Various studies concerning the issues of health care system, including the problems of health insurance, maltreatment, etc.

What tasks do these (and other) studies suggest need to be carried out in order to design a health program for Russia?

Task 1: Define and measure health at the population and individual levels.

The first task is to define and measure the state of population health on the scale of a country, separate regions, groups of population. There are official statistics from Goskomstat and the Ministry of Health Care, and there is no reason to distrust them. But we should also take into consideration a number of important aspects. For example, mortality statistics and the life expectancy indicators derived from them seem to be the most reliable health indicators. The fact of death is just that, a fact – it either exists or not. However, and first, there is at least some under-reporting of deaths. Sometimes deaths are not registered, and some persons classified as "missing" are in fact dead. And there is over-reporting of deaths as well, as some actually dead persons are officially documented as living. Second, and more importantly, full understanding requires knowledge not just of the fact of death, but of the *type* of death. It is very important to know, if death resulted from accumulated insults to the body (chronic ill health); or if it resulted from a sudden illness condition affecting a person who was previously healthy; or if it resulted from external causes (trauma, poisoning, homicide, etc.).

Almost the same may be said about the statistics of morbidity and the relationship between illness and health: with one and the same disease (statistically) the health status of the diseased persons may be quite different. Moreover, it is very important to know whether the disease is chronic and has a history, or it is just diagnosed for the first time. A diseased person may suffer from one-two-three diseases. This characterizes various levels of health/ill health.

With the account of such peculiarities of the statistics, it is possible (and necessary) to elaborate an indicator of health / ill health on a population scale, which can be more reliable. But alongside the indicators of health / ill health of a population character, there are indicators of individual health potential relating to the person.

Our institute carried out a series of studies in this field not only in Taganrog, but also in Moscow and St. Petersburg (1997), rural areas of Saratov and Pskov oblasts (1997), Vologda and Tver oblasts and Krasnodar kray (1993-1997). Our researchers carefully elaborated a complex methodological approach with the use of objective and subjective assessments which became foundation of an integrated index (within a five-score scale).

Task 2: investigate health dynamics and separate causes of health from causes of separate diseases

The second task for this project would be two-fold: to define a vector of health indicator dynamics on the macro- and micro-levels and to identify the factors affecting health as distinctive from the factors causing separate diseases.

Our research showed, that over the last decades the individual health of Russians has been constantly declining; this refers to the country as a whole and to separate regions under investigation, as well as to separate groups of population. This also concerns the dynamics of health indicators over individuals' life cycle. Within two decades the average value of individual health declined by 12% (Taganrog); the share of positive health self-assessments halved, and the share of population with low health potential increased by 1.5 times.

Besides, investigations at the micro-level showed that: a) women have a lower individual health potential than men (by about 10%), although their life expectancy is higher; b) every succeeding generation has a lower health potential than the preceding one; c) within the life cycle, decline in the heath status begins just from the moment of birth.

The largest losses in health are registered among children and teenagers. Health problems are shifting from the elderly groups of population to the groups of children and youth. This is virtually against nature and biology, according to which a person should lose health gradually in the course of growing in age. From the point of biological development of an individual, health losses should begin only at the age of 35.

It is worth noting, that the differentiation of individual health potential depending on individuals' economic welfare (between the top and bottom decile groups) is growing. Thus, in 1981 the difference in health index between the top and bottom deciles was 0.7 points, and by 1998 it doubled and made 1.4 points.

As to the factors determining health level, it should be stressed first of all, that according to WHO estimates, health depends one half on the conditions, quality and mode of life; one fifth on environment, one fifth on genetic factors, and only one tenth on health care services. Of course, this is a general outline, and probably the specific figures for Russia will be somewhat different. International experts note that the increased mortality in Russia observed over the last decade is mostly connected with circulatory diseases and "external causes" (accidents, homicides, suicides). Growth in rates of death from these two groups of mortality causes has some common factors. The key factor among those causing exacerbation of cardiovascular diseases and arterial hypertension is acute "psychological stress", which arises in cases, when people have to adapt to unexpected circumstances, being unprepared to them by previous experience. Some studies have found out a direct correlation between stress and cardiovascular diseases. Psychological stress also has a clear relationship to mortality from external causes. Moreover, in order to ease the tension, people subjected to stress can abuse alcohol, take drugs, and even smoke more, raising the risk of death from cardiovascular diseases (all three behaviors) and external causes (the first two behaviors).

What about the half of health that depends on living conditions and quality of life? In our research we tried to decipher this to reveal the main causes of health deterioration, and ranged them by significance. Our research results show that the most significant factor determining individual health is "the character of work, " including the level of hardship, unhealthiness and intensity of work; the rationality of workplace organization, and social climate within the workplace. Also significant was "quality of nutrition"; this dependence shows itself most apparently among children under 14 of

age. Of special significance is alcohol abuse and alcoholism, which facilitate development of somatic and mental diseases.

Task 3: Identify the main problems with health care provision, particularly those connected with marketization of the social sphere.

Is it necessary to marketize the health care branch? How should we do it, if necessary? Over what time frame? Evidently, restructuring of the health care system will take quite a long time; it is impossible to carry out such a transformation from today to tomorrow. Therefore, special "bridge" arrangements should be put in place for the period of transformation; linking initial positions with the desired ones and enabling the most effective, painless transition for the population. The nature of the transition bridge will depend on where we are and where we want to go in terms of health care.

To this end, it is first necessary to break down health care into separate elements, such as prophylaxis, polyclinic (outpatient) and hospital health services, diagnostics, and special services (reproductive, gerontological, child , occupational, etc.). Next, it is necessary to determine the relationship between the main financing channels: free of charge services and state guarantees at the expense of the state budget, insurance as the main form of funding ("basic program'), and paid services on a voluntary basis, relating to diagnostics, planned hospitalization, and "exclusive" health care services. Finally new technologies and new organization approaches to raise the efficiency of medical services are necessary.

Task 4: Determine health care priorities and the efficient volume and structure of funding.

The fourth task of the project is to determine priorities in the development of health care as a branch, as well as the volume and structure of funding best suited to efficiency. Sub-tasks include determining what diseases need priority attention now, what groups of population need attention, and what research institutions and studies are coming to the forefront .

Closing thoughts

In closing, it is necessary to stress two things. First, the four tasks designated for a project to develop a Russian health program should be certainly supplemented by other ones, and all of them would need to be discussed prior to the final formulation of the project. Second, the program requires a *systems* approach; the more so, as the workshop is held at the Institute for Applied Systems Analysis. And the first precondition for a systems approach is to set clear limits to our "interference" into social life.

3. Workshop Proceedings

The following condensed versions of workshop papers were prepared by Landis MacKellar and David Horlacher.

Original papers are posted on line at

http://www.iiasa.ac.at/Research/RMS/TACIS03/?sb=19

List of presentations:

Issues Overview, Landis MacKellar

Russian Mortality Fluctuations since 1980, David A. Leon

Health Care Provision and Financing, Sergey Shishkin

The Public-Private Split in Health Care Systems, Les Mayhew

Alcohol, Alexander Nemtsov

Smoking, David Rotman

Crime and Violence, Yuri Andrienko

Homelessness, Svetlana Stephenson

HIV/AIDS, V.L. Fuller

Reproductive Health, Elena Andriouchina

Suicide, Ilkka Mäkkinen

Health, Hopelessness, and Social Norms, Larry Willmore

Policy Recommendations and Conclusions, David E. Horlacher, Landis MacKellar, and Elena Andriouchina

Issues Overview

Landis MacKellar
IIASA, Laxenburg

Stylized facts about health and long-run development

While this note, and workshop, focus on Russia, it is important to place Russia's current health situation in a long-run perspective. Five important stylized facts emerge from the large econometric literature regarding health and long-run economic development.

1. In international cross-section, there is an inverse correlation between per capita income and major health indicators such as infant mortality, maternal mortality, and life expectancy. In a nutshell, "Wealthier is healthier." To give an example of this, Figure 1 plots the natural log of maternal mortality rate (MMR, per 100,000 live births) against the natural log of gross domestic product (GDP) per capita and draws a trend line.[2] Maternal mortality is a more robust health index than infant mortality and, while it is not so comprehensive as life expectancy at birth, it is arguably more easily interpretable. The estimated elasticity of –0.86 should not be taken too seriously, for there reasons.

- The income figures used are not the so-called "purchasing power parity" (PPP) figures that provide the most accurate picture of comparative international incomes.[3]
- Simple correlations overstate causal links when there is bi-directional causality (i.e., if health makes wealth in addition to wealth making health). In this case, then the trend lines drawn in Figures 1 and 2 will be too steep.
- We make no attempt to control for "third factors," which might cause both higher income and better health, such as literacy. In other words, the inverse relationships in Figures 1 and 2 may be, in part, artifacts of other, unexplored causal relationships.

Studies correcting for these three problems, however, verify that there is a true causal link between higher income and better health (as well as in the opposite direction).

Where does Russia stand in the scheme of things? Russian GDP per capita in the mid-1990s, at about $2,000 (log equal to 7.6) corresponded to a MMR of about 80.

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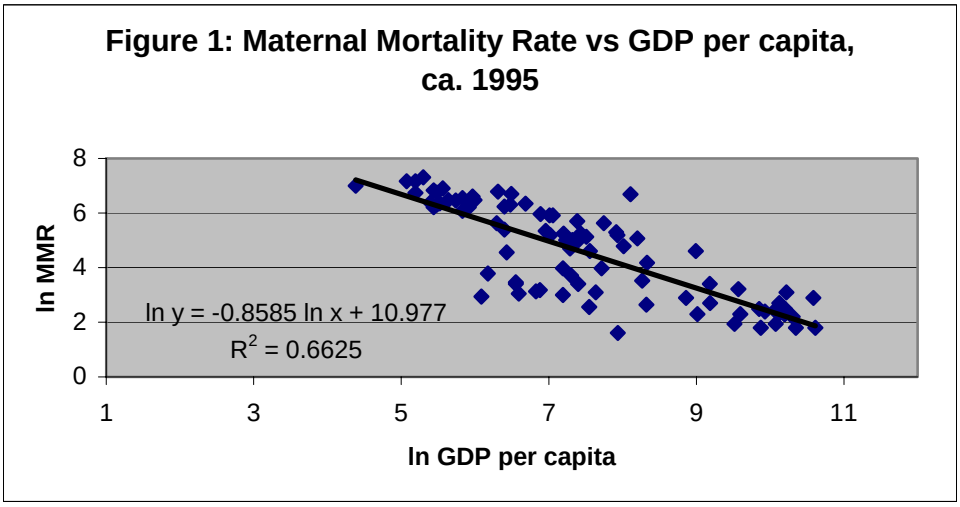
[2] Data used to plot Figures 1–3 are from various issues of the World Bank's *World Development Report* and correspond to the mid-1990s.

[3] When local-currency GDP is translated into U.S. dollars for international comparison purposes, the exchange rates used reflect only the relative prices of traded goods. It is known that in poor countries, nontradable goods such as housing are relatively cheap. Observations at the very left of Figure 1, in other words, would slide to the right if this error were corrected. The reason we use non-PPP data is that for many economies (especially transition countries) PPP GDP estimates are unavailable for the mid-1990s.

Since the actual observed rate was only a little over 50, the Russian health system appears to have performed fairly well on this measure. Note the wide scatter of points for countries in the middle of the diagram: very poor countries all have high rates of maternal mortality and very rich countries low ones, but as far as this specific index of health goes, countries in the middle like Russia, different policy approaches and resource allocations can make a real difference.



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2. The share of health spending in GDP increases with GDP per capita (see Figure 2), i.e. health spending grows faster than income. At the low end of the development scale, health expenditure shares of 3 percent are common, as opposed to 7 percent or more at the high end. Part of this is due to the fact that populations in developed countries are older than those in developing ones and per capita medical expenditure is highest for the aged. Even controlling for age composition, however, the share of national income devoted to heath care still increases with national income.

In Russia, total health expenditure averaged between 5% and 6% of GDP during the second half of the 1990s. With GDP per capita of $2,000 the trend line in Figure 2 would predict health spending equal to 5% of GDP, just a bit lower than was observed in Russia.

While the budget share of health may rise with income at the macroeconomic level, the reverse is the case for households. One of the perennial issues in health policy is that the share of income spent on health is high for the poor, and especially high for the elderly poor.

3. The wealthier the country, the higher the share of total health spending represented by the public sector (see Figure 3). In poor countries, almost all health spending is out-of-pocket, which has disturbing consequences. First, poor people may not be able to afford basic health care that would greatly improve their health at low cost. Second, disease episodes can precipitate an irreversible decline from near-poverty to poverty. However, a number of researchers have found that, once GDP per capita is accounted for, there is no strong systematic relationship between public health spending and better health outcomes. This is not surprising given the very wide scatter of points

in Figure 3 – i.e. the wide range of policy choices made by countries at all levels of development – as compared to the tighter scatter of points in Figure 1 (and in Figure 4 below). The growing role of the public sector as countries develop, in other words, is not the force driving improved health outcomes. Some of the failure to find a significant relationship between public health spending and health outcomes may reflect a failure to take distributional details into account. For example, say that public health expenditure benefiting poor people results in sharply improved health for the group concerned, but public health expenditure benefiting the rich does not. Then, if the most observed expenditure is skewed toward the rich, aggregate data will reveal no relationship between total expenditure and average health.

Figure 2: Health Spending Relative to GDP (%) vs GDP per capita, ca. 1995

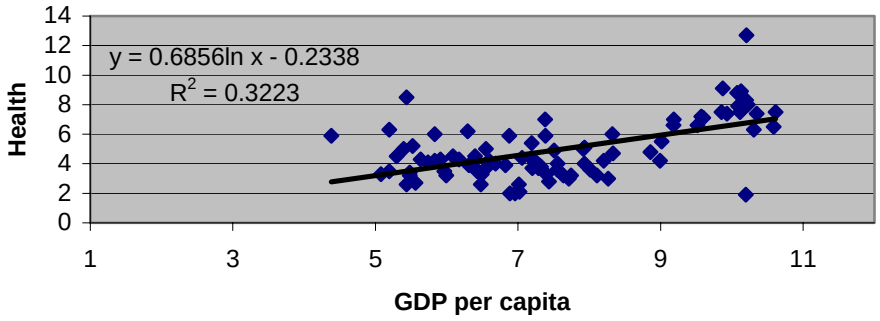
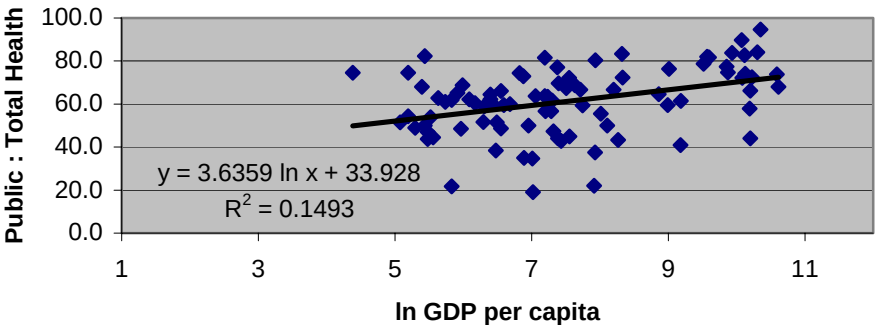


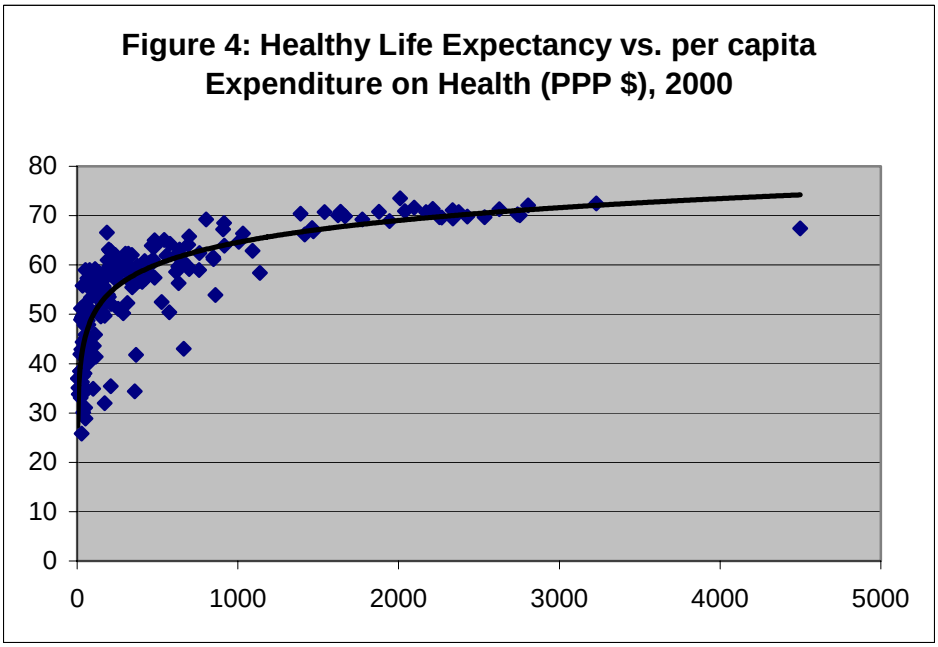
Figure 3: Public relative to Total Health Spending (%) vs GDP per capita, ca. 1995



The trend line in Figure 3 would predict that in Russia of the mid-1990s, the public sector would account for 62% of total health expenditure. In reality, between 1995 and 2000 the public share declined from 81.5% to 72.5%. Even with shrinkage of the public health share, then, Russia remains a country where government is very active in the health field. One way of looking at the current health transition in Russia and other formerly Communist countries is that public sector involvement in health, which was higher than usual given the level of economic development, is coming back into line with economic fundamentals. However, as mentioned above, the wide scatter of

points indicates that countries at the same level of development make different choices about the public-private split.

4. The "fit" between health care expenditure and good health is much closer at the top end of the income scale than at the bottom. The World Health Organzation's "health life expectancy" (HALE) measure, plotted against per capita GDP in Figure 4 (based on data from the 2002 WHO *World Health Report*), is an index of overall health performance. Some of the wide scatter at the lower end of the income scale is due to AIDS (especially due to relatively well-off Southern African countries who spend substantial sums on health but nonetheless have very low life expectancy on account of AIDS). However, but even taking this into account, there is still more variation around the trend line at the left than at the right of the diagram. This suggests that, in many low- and middle-income countries, there is considerable scope for improving health by improving policy, not spending more money. This observation gives grounds for optimism.



Russian per capita health expenditure was PPP$ 405 in 2000. This would correspond to a HALE of about 58. In fact, it was 56.6, not far below what one would expect. In summary, Russia has about the healthy life expectancy that would be expected in a country at its income level, total health expenditure roughly where one would expect it, but a public sector share much higher than other countries of comparable income levels (although there is considerable variation).

5. Inequality, as well as absolute income, affects health. The U.S., at the far right of Figure 4, is a perennial outlier in health outcomes. How can a country spend so much and yet enjoy a level of health apparently no better than some countries spending half as much? There is evidence from U.S. and European studies that *distribution* of income has a health impact independent of *level* of income. Four hypotheses have been

advanced to explain the strong correlation within countries between socio-economic status and health:

- The *absolute income hypothesis*, holds that persons with higher incomes enjoy better health as a result.
- The *third-factor hypothesis*: People who have high discount rates will invest neither in good health nor in economic projects with a long time horizon (going to university, for example). Hence the correlation between income and health is reflecting a third factor, time preference, which is causing both.
- The *pure income inequality* hypothesis, posits that stresses associated with greater inequality cause bad health for both rich and poor. Consider a 2-person society in which one person has an income of $50,000 and the second an income of $20,000. If the less well-off individual's salary were reduced to $19,000, according to the pure income inequality model, the health of both the better off and worse off individuals would be impaired because of greater inequality (and, assuming that the absolute income hypothesis is also valid, the poorer person would also suffer due to income decline).
- The *relative deprivation hypothesis*, holds that the health of poor persons is adversely affected by their low standing relative to the wealthy. So, in the example above, a third effect would operate, as well. The health of the less fortunate member of society would deteriorate for three reasons: (i) he suffers an absolute income decline, (ii) there is more inequality in the community, and hence more stress and worse health for both rich and poor and (iii) he is worse off relative to his peer, leading to resentment, a loss of self-esteem, and worse health as a result. While the inequality effect would reduce the health of both rich and poor, the relative deprivation effect would reduce the health of the poor person alone. The important aspect of the relative deprivation hypothesis is that, even if most members of society have long since passed the level of income at which the absolute income effect is a strong factor, income and health can still be strongly linked.

There is very strong evidence of relative deprivation effects in U.S. data. In a finding important for Russia, much of the link appears to be is mediated through risk behaviors: relative deprivation is strongly correlated with smoking, obesity, and failure to use seatbelts, i.e. that persons who feel deprived are more likely to adopt risky behaviors. It is possible that a significant amount of the health deterioration that took place during transition, especially the early phases, was the result of stress associated with rising inequality.

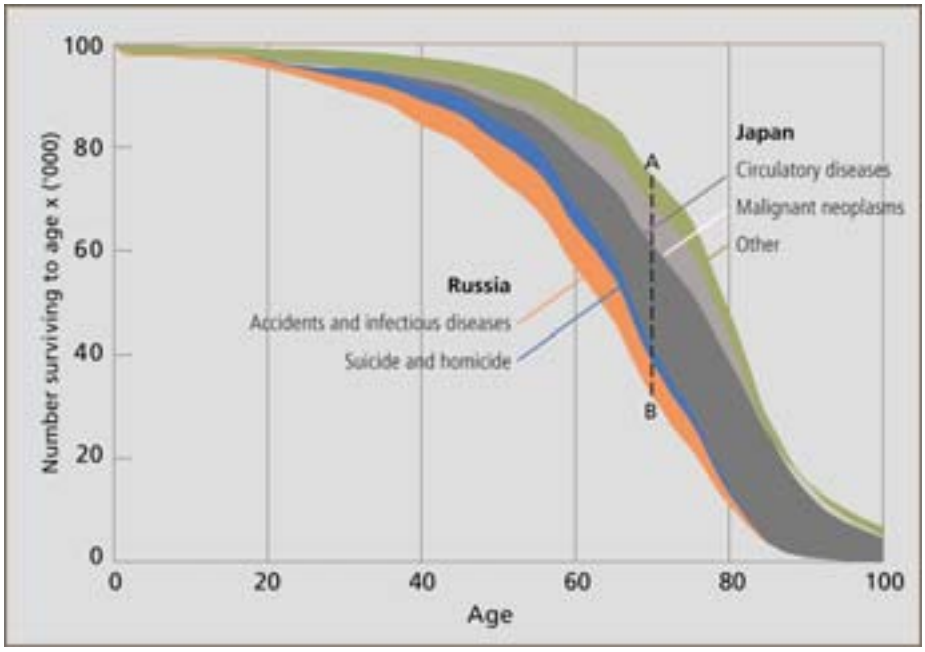


Figure 5: Male population survival curves for Russia and Japan based on WHO life tables and mortality data. The diagram shows which causes of death account for the better survival rates of Japanese men. At younger ages, the main causes of excess mortality are accidents, infectious diseases, and homicide and suicide; at older ages, circulatory diseases make up most of the difference.

Decomposing international differences in mortality: Russia vs. Japan

In order to understand better the nature of elevated mortality in Russia, Les Mayhew of IIASA and the Department of Actuarial Science at City University, London, used WHO life tables and mortality data to illustrate how male mortality by cause would need to decline at different ages if Russian males were to achieve the same probability of survival as Japanese males. Figure 5 tracks the survival of two hypothetical cohorts of 100,000 males, one Russian, one Japanese. Consider the section AB for persons aged 70. In Japan, about 75,000 out of the starting population of 100,000 would have survived to this age (Point A). In Russia, the equivalent number would be only a little more than 30,000. The difference is due to the cumulative mortality of the causes of death shown. At age 70, circulatory diseases account for most of the difference. At age 50, by contrast, it is accidents, homicide, suicide and infectious diseases that are mostly responsible for the lower survival chances of Russian males.

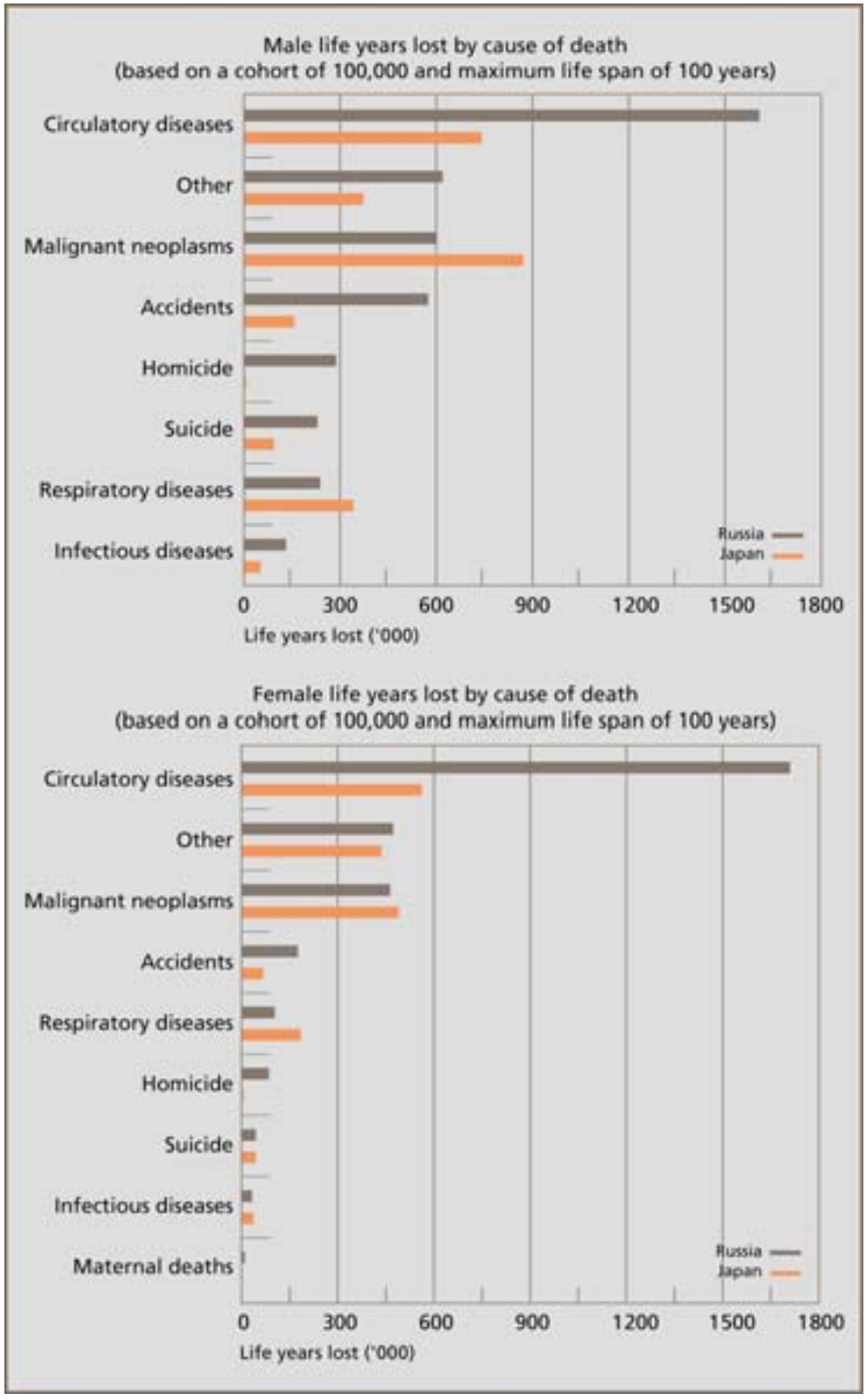


Figure 6: Comparison of years of potential life lost (YPLL) from major causes of death for Japanese and Russian males and females (constructed from WHO data sources).

Another approach is to compare actual mortality experience with a hypothetical situation in which everyone survives to some reference age, say 100 years. A cohort of 100,000 every member of which lived to 100 would experience 10 million person years of life. In Figure 6a (males) and 6b (females) we illustrate how different causes of death reduce these years of potential life in Russia and Japan. The longer a bar, the greater the impact of the cause of death. For example, Russian males, circulatory diseases reduce this potential maximum by about 16 percent, as opposed to only 8 percent in Japan. Accidents, homicide and suicide combined are second only to circulatory diseases as a decrement. For every cause of death except malignant neoplasms and respiratory diseases, Russian males lose more years of potential life than their Japanese counterparts. The reason is that these causes of death (particularly the second) are characteristic of the elderly, and many Russian males have died before they enter the risk bracket. For females, the chart shows that almost all of the greater loss of potential life years in Russia as compared to Japan is due to circulatory diseases.

Deteriorating health indicators

Social indicators in Russia have improved since the low-points of the mid-1990s. However, health indicators have not responded as favorably as hoped for. Between 1992 and 2000, life expectancy for Russian males dropped from 62 to 59 years, female from 73.75 to 72.2. The differential -- a 3-year decline for males versus a 1.5-year decline for females indicates -- that, as widely known, health consequences of transition have been more serious for males than females. The crude death rate of the working age population (16-60 for males, 16-55 for females) rose from 488 per 100,000 in 1990 to 611 per 100,000 in 1998. A quarter of all deaths occur during working age, underscoring the huge loss of potential economic output due to low levels of health.

Micro-level data clearly indicate the deterioration in Russian health is a long-term, structural trend. Dr. I.V. Korchova of the Institute for Socio-economic Studies of Population of the Russian Academy of Sciences has been studying households in Taganrog over nearly twenty years. Over the period 1981-1998, the prevalence of chronic disease practically doubled from 35 to 60% and the proportion of persons reporting themselves to be in excellent health fell by 50%. Similar studies in Moscow present similar results; village-level studies in various regions are also available. Research by Dr. Olga Kislitcina of the same institute has shown how, in Taganrog, social deprivation, poverty, unemployment, and similar pathologies are associated with poor health.

The deterioration has been especially pronounced in the “external causes,” i.e. accidents, suicide (Figure 7), and homicide (Figure 8). All presumably reflect a complex set of phenomena: greater social disorganization, decline in social capital, unemployment, increased alcohol consumption, stress, etc. Note that the increase in homicide affected women as well as men, suggesting that the increase is not entirely due to the increase in criminal activity (or the growing violence of established criminal enterprises). The increase in suicide rates, by contrast, affected only men, suggesting that women were more resistant to the problems cited above.

Figure 7: Suicide mortality, Russia 1980 and 1995, selected countries 1995 (per 100,000)

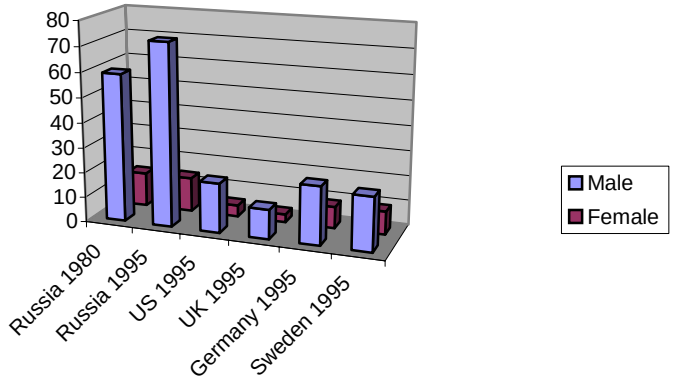
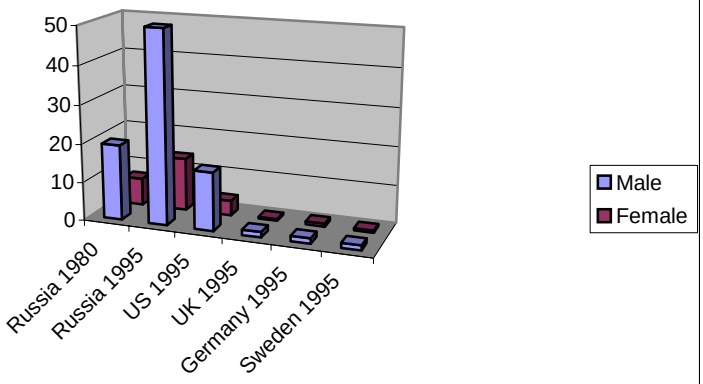
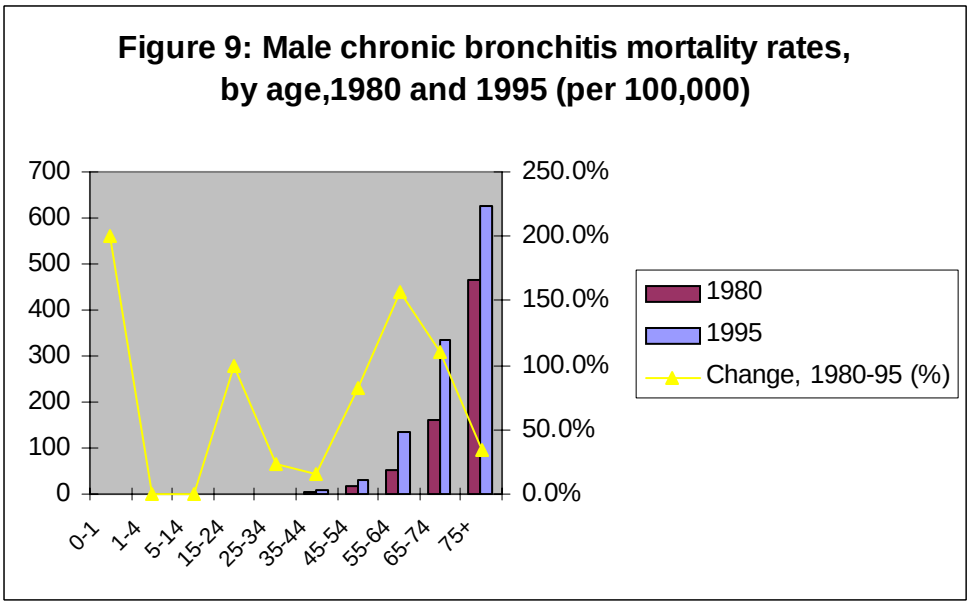
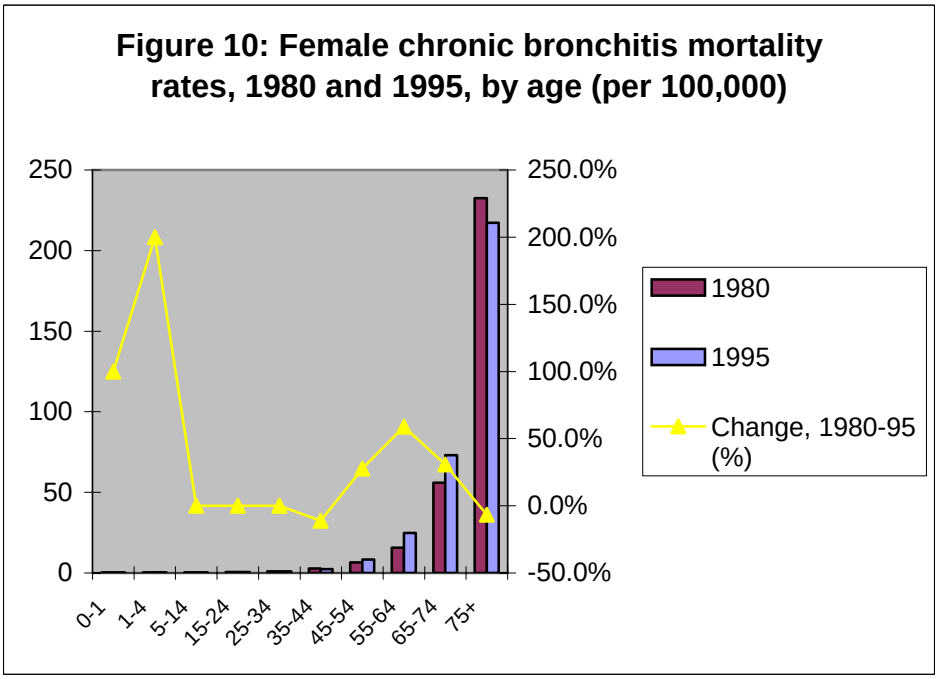


Figure 8: Homicide mortality, Russia 1980 and 1995, selected countries 1995 (per 100,000)



Deterioration has also been noted for common causes of death which would appear to be less closely linked to factors such as those listed above. An example is chronic bronchitis, a typical cause of death at advanced ages (Figures 9 and 10). Between 1980 and 1995, males experienced significant increases in bronchitis mortality at every age over 35. For males aged 55-64, the increase was two and one-half times, an enormous jump. Women experienced increases in the 45-54, 55-64, and 65-74 age groups (albeit less than half the increases experienced by males), but actually experienced an improvement at age 75 and above. What do these changes reflect: worse living conditions, weakened immune systems, less effective treatment? Why do these affect men more than women?





Why the poor health performance? I: problems in health care delivery and finance

The pre-transition Soviet health system in the region was far from ideal. Problems included the following:

- A monolithic organization headed by Ministry of Health, state ownership of health facilities, and universal access to care, free at the point of delivery, but

with poor management and only a limited understanding of efficiency (for example, unnecessary patient hospital admissions and excessive lengths of stay).

- Central planning leading to an emphasis on outputs (days of hospital care delivered, number of procedures implemented, etc.) regardless of their medical cost effectiveness. Accordingly, patient throughput was, and remains, low compared with western countries, with no apparent extra health benefit.
- Excessive number of medical personnel, several times higher than those in OECD countries on a per capita basis.

In short, the Russian Federation inherited a Soviet health system that was characterized by too many specialists and not enough family practitioners, too many hospital beds and not enough outpatient facilities, both of which led to major inefficiencies in care. Screening and prophylactic health care was strong, but health promotion was almost non-existent. Preventive health care in Soviet system was based on the concept of *control*, a legacy that has not entirely been discarded.

Despite the poor quality of health institutions, in rural areas access was good. Perhaps most importantly, from the standpoint of understanding current problems, the fundamental promise of the socialist state—that any patient would receive treatment for any malady free of charge—was met. The post-transition reality is that elites who can pay still obtain good care; however, the average citizen still has little choice, faces long waiting times and out-of-pocket payments.

The main source of difficulty for the health sector is that GDP fell precipitously during the 1990s, severely eroding the available financial base. As opposed to the OECD average of about three-quarters, in 1990 virtually all health spending was financed by the public sector. Despite the fact that, as a "non-productive" sector, health was well back in the budget queue, basic commitments were made. With the collapse in government revenue, the health sector experienced sharp reductions in available budgetary resources, thus leaving policymakers trying to support abundant physical infrastructures, in terms of hospitals, and clinics, with insufficient resources. With public resources dwindling, private health care spending grew, between 1995 and 2000, from 18.5% to 27.5% of total health care spending (see Table 1).

Table 1: Total, private, and out-of-pocket health expenditure, 1995 and 2000

	1995				**2000**			
	Total (% of GDP)	Pvt (% of GDP)	Pvt (% of total)	Out-of-pocket (% of total)	Total (% of GDP)	Pvt (% of GDP)	Pvt (% of total)	Out-of-pocket (% of total)
RU	5.5	1	18.5	15.2	5.3	1.5	27.5	23.4
US	13.3	7.3	54.7	15.1	13	7.2	55.7	15.3
UK	7	1.1	20.1	10.9	7.3	1.4	21.4	10.6
GE	10.6	2.5	23.3	10.0	10.6	1.6	24.9	10.6
SW	8.1	1.2	14.8	14.8	8.4	1.9	22.7	22.2

Source: WHO, World Health Report 2002

Policy responses: what can be done?

General. Policy dialogue in health is often marked by a search for the "best" health care system. There is, in objective terms, no such thing. *Any* approach to health can be made to deliver a reasonable standard of care work given good administration and management and adequate funds. The problem is that both are typically in insufficient supply.

Health care policy is beset by problems of moral hazard, on the one hand, and adverse selection, on the other. The latter, which is especially characteristic of "privatized" health systems, is easily explained: insurance companies do not wish to insure the very people who apply for insurance, namely those who know that their state of health is poor. Unless insurers are forced to accept all comers (and they are remarkably facile at coming up with ways to avoid such dictates), some persons will be left with no coverage. The typical response to adverse selection in social insurance is to mandate coverage, often to the extent of imposing a mandatory public program. To give a concrete example, in the U.S., private long-term care insurance contracts are increasingly popular. Since insurance companies know that those who apply will be those who have reasons to believe that they will live a long time, premium rates are extremely high. In effect, these are insurance schemes for the prosperous. In Germany, by contrast, a public mandatory long-term care insurance scheme has been instituted.

Moral hazard -- changes in behavior cause by the existence of a contract -- is a richer theme, because examples of it are in every corner of the health policy debate. Approaches which guarantee free treatment on demand (the Soviet approach) do nothing to encourage patients to produce health themselves, whether by better behaviors or by taking an aspirin and going to bed for a day or two before consulting a physician. Fee-for-service approaches encourage doctors to over-treat because a third party (whether a private insurer or the government) will pick up the bill. When treatment costs are tightly controlled but drugs are purchased privately, physicians over-prescribe and set up an apothecary in their clinic. HIV testing can increase the spread of AIDS in two ways because those who test negative will find it easier to convince partners (who may be HIV-positive) to have unprotected sex and those who test HIV-positive and are non-altruistic will have no further motive to take precautions.

Roughly speaking, "private" health systems suffer from adverse selection, leading to inequities, while "public" health systems suffer from moral hazard, leading to cost-inefficiency. Many have used the analogy of steering a course through the Scylla and Charybdis of these two problems. But the situation is even more complicated because there are strong and ideologically loaded cross-currents. There is the problem of *need* – "Impossible to define but impossible to do without," Brian Abel-Smith called it. Where does "need" for health service end and normal consumption begin? Are access and equity problems health system problems or poverty problems? Using the health system approaches to address poverty problems is likely to prove costly and ineffective.

Russia. Health reform in Russia is proceeding along two fronts simultaneously:

- Mobilize additional revenues to finance the existing health system. The gap between targets and available resources remains unresolved. The Ministry of Health Care develops programmes and targets, but the Ministry of Economic Development, the Ministry of Science and Technology, and the Ministry of

Finance typically reduce the resources available. Insufficient financing too often translates into poor program results. A good example is the network of Ministry of Health Care centers for health promotion and prevention, which are meant to diminish the incidence of non-communicable diseases but suffer from inadequate funding.

- Undertake structural reforms to convert the current health system into a sustainable one. Current reforms aim to substitute primary health care and general practitioner consultations for inpatient care, but the pace of change is slow. Rationalizing the health care supply side means shedding personnel, re-training those who remain, shutting down redundant facilities, etc. It is institutionally and socially difficult. Ministry of Health Care coordination at the local level is also often lacking.

Reform of health care financing has not proceeded smoothly. In the early 1990s, the effort to mobilize resources took the form of switching from unreliable general budget financing to earmarked compulsory health insurance. The main aims were to bring more money into health care as well as devolve responsibility for setting of budgets. Insurance reforms have, however, failed to address deep-seated problems:

- There is excessive complexity with up to five different ways of paying for services. In consequence, administration is overburdened and financial control poor.
- Salaries for medical personnel and salaries are too low, which perpetuates illegal practices and payments.
- Enterprises operating close to bankruptcy refuse to pay their share of health payroll taxes. Local governments, perceiving that the health sector is now funded from other sources, have in some cases suspended their own budgetary support for health.
- The "federalism" of the system is largely illusory because local governments continue to rely on the center for medical supplies and salaries.
- Policymakers have been unable to extricate themselves from the unrealistic promise of Soviet medicine: on-demand treatment for any medical problem with no out-of-pocket payment.

The failure to put effective health insurance in place has translated into a rising role of out-of-pocket (i.e., uninsured) expenditure (see Table 1 above). This, combined with declines in household income, has given rise to growing inequities in access to health care. Persons lacking financial means fail to obtain needed treatment, sometimes with the result that when they do enter the health system, they are very sick indeed. The Ministry of Economic Development is now leading discussions about modernization of the insurance system, however, for the foreseeable future, out-of-pocket payments will remain a central means of financing health care.

Health policymaking leaves much to be desired. Russia has a Ministry of Health *Care*, not a Ministry of *Health*, and ipso facto a health *care* policy, not a *health* policy. Health too often gets lost in gaps between the ministries; to take one example, alcohol is considered an economic problem (under the purview of the Ministry of Economic Development and the Ministry of Finance) but its health consequences are nowhere

consistently taken into account. This results in anomalies such as the curious fact that in the Russian Federation beer is considered a non-alcoholic beverage. Absent inter-sectoral collaboration, the effectiveness of programs such as those mentioned above is typically low. Because they are non-transparent, expenses and results cannot be easily compared. There are problems of cooperation, not just horizontally (between Ministries, for example), but vertically, as well, as the Ministry of Health Care does not have complete control over lower levels. The organization of social services is still new in Russia, and targeting issues abound. There has been a focus on street children, for example, with an explosion in the availability of services; however, street children are an easy target population compared to children in families under stress.

Why the poor health performance? II: lifestyle issues

The ramshackle nature of much of health care system and poor access must also be viewed alongside exceptionally unfavorable lifestyle habits: excessive drinking, smoking, rapid increase in the number of injecting drug users (IDUs), prevalence of unsafe sex leading to STI- and HIV transmission, failure to use safety belts, etc. One of the motivating themes for this workshop is that, while health care delivery and finance are important, the best performing health care delivery system in the world, abundantly financed, would fail to deliver first-class health outcomes in Russia if lifestyles do not improve.

Alcohol[4]. The toll of alcohol abuse in Russia has long been appreciated, thanks in no small part due to the research of Dr. Alexander Nemtsov, whose work is presented elsewhere in this report. At the beginning of the 1990s there was a dramatic increase in the quantity of alcohol consumed by the adult male population, while alcohol consumed by the female population and teenagers increased little. The Russia Longitudinal Monitoring Survey 1999 showed clearly that compared to 1992, alcohol consumption in August 1993 among adult males was 60% higher, at about 18 litres per year. Alcohol consumption in December 1994 among females and teenagers was 20% higher than in 1992. Alcohol consumption has declined significantly since the mid-1990s for all groups of the population. However, adult male drinkers consumed more, at the end of the 1990s, than they did in 1992 (37.2 grams per day in 1998 as opposed to 28.6 grams per day in 1992. Between 1990 and 1998 there was an increase in the incidence of alcoholic psychosis from 17.5 to 52.9 cases per 100,000 population.

Alcohol consumption is highly skewed. In a typical population, some 10% of the adult population accounts for 50% of alcohol consumption, and the situation in Russia may be yet more pronounced. The relationship between alcohol intake and health is a U: moderate drinkers have slightly lower mortality than abstainers, but heavy drinkers have much higher mortality than moderate drinkers. Heavy drinkers have mortality rates two to six times that of the general population, with lifespan 6 to 18 years shorter; however, some of this is due to smoking, poor nutrition, external causes, etc. The benefits of moderate alcohol consumption include lower rates of (approximately 20% lower at approximately 30 grams per day) cardiovascular morbidity. The relationship between alcohol and wages is the opposite: moderate

[4] Figures cited in this section are taken from material presented by Dr. Nemtsov at the Workshop.

drinkers have higher wages than either abstainers or heavy drinkers. The negative impact on wages appears to be largely long-term in nature; that is, it takes many years of heavy drinking before it reveals itself.

In the U.S., the National Institute of Criminal Justice Statistics estimates that in 1995, 40% of all violent crime victimization and 67% of all domestic violence were alcohol-related; 40% of all violent offenders arrested report having used alcohol just before the offence. Alcohol might lead to criminal behavior in several ways: it might lead the drinker to commit crime in order to obtain alcohol, it might reduce inhibition and cloud judgment, or the act of drinking take place in environments where crime is common for reasons independent of alcohol.

Smoking[5]. Smoking is highly prevalent in Russia, with approximately 60 % of the adult males, 11% of the adult females and 15.2% of the teenagers smoking. The percentage of teenagers smoking increased from 16.8% in September 1992 to a peak of 20.1% in December 1994 and has then been decreasing. The number of cigarettes smoked per day by teenage smokers has steadily declined from a peak average of 8.9 in August 1993 to a low current level of 6.7 in November 1998. Between 1987 and 1999 the proportion of male smokers in the age group of 30-39 increased from 51 percent to 71 percent.

The evidence for a causal link between tobacco use and disease and death is irrefutable. Smokers' risk of lung cancer is 20-25 times greater than that of non-smokers and about a 3-fold risk of having a heart attack than lifelong non-smokers. Because of the time lags, increases or decreases in the prevalence of smoking take many years to translate into changes in mortality and morbidity. The prevalence of smokers among adult males peaked in the early 1960s in developed countries (for example, at 42% in the U.S.) and has steadily declined since (to 25% at present in the U.S.). However, smoking has risen among women and is still growing in the developing world.

Policy responses: What can be done?

There are at least three problems in dealing with "sin" behaviors such as smoking and drinking. One is that, since a basic goal of economic policy making is to bring private and social costs into balance, these costs have to be estimated. Issues include

- Whether to include costs borne by the user or cover only "external" costs (i.e., should a cirrhosis patient's own-medical expenditure be counted or not?). Cost-of-illness studies tend to include both, but conventional welfare economics is based on the premise that government policy should focus only on the second.
- Achieving comprehensiveness without double-counting costs (eg, lost wages *plus* lost economic output).
- Monetizing non-monetary costs
- Attribution problems (e.g., how *much* crime should be attributed to alcohol, etc.)

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[5] Figures cited in this section are taken from work presented by Dr. David Rotman at the Workshop.

- Choice of benchmark (world of zero tobacco use?)
- In the case of alcohol, non-abusive behavior generates no external costs at all, yet policy instruments typically affect abusive and non-abusive users equally.
- In the case of tobacco, how to deal with environmental tobacco smoke.
- In both cases, but especially in the case of tobacco, the issue of how to deal with savings in the pension and health systems when users die young, and relatively cheaply.

The latter two effects, in particular, can be huge. Estimates of the efficient tax (i.e., the one that brings total public costs of smoking to bear on the purchaser of a pack of cigarettes) range widely, for example, in the U.S. from $0.15 to $5.00. In Canada, it was estimated that direct health-related costs of smoking in the mid-1980s were C$ 669 million, but avoided future health care costs were C$ 462 million. When taxes paid by smokers (who finance government health programs whose benefits accrue disproportionately to long-lived non-smokers) were added in, as well as savings to the pension system when smokers die young, smokers were estimated, on balance, to slightly subsidize non-smokers. Yet, public health advocates protested, in no other area of policy is a death treated as a benefit!

The second problem, especially acute in the area of alcohol (and illicit drugs) is how to bring policy measure to bear on those responsible for most of the costs. Take the case of raising alcohol prices as a means of reducing drunk driving. Taxing alcohol taxes drinkers who do not drink to excess as well as those who do; moreover, it sends no signal to those who do drive after drinking to drive more safely. A more effective instrument is stricter enforcement of drunk-driving laws, with penalties steeply escalating for repeat offenders. In the more general case of using alcohol taxes to promote general health, most of the costs are caused by very heavy drinkers (moderate drinking has a significant health benefit) – yet all evidence shows that the heaviest drinkers are the least responsive to price increases.

Yet some robust results have been found. Experience in countries such as Canada demonstrate that, even with the resulting development of a black market, large increases in cigarette taxes generate both significant declines in smoking and significant increases in total revenue. While the evidence on tobacco advertising restrictions is inconclusive, econometric studies have concluded that mass media campaigns educating smokers of the health consequences of their habit have significantly reduced smoking. Regulations limiting smoking in the workplace and public places have also significantly reduced cigarette consumption. U.S. studies have estimated that workplace bans reduced overall smoking prevalence by 5 percentage points and average daily consumption among smokers by 10 percent. Some evidence indicates that bans on smoking in public places have been more effective than bans on smoking in private workplaces.

The third general problem is that traditional policies regarding tobacco and excessive alcohol use (as well as use of illicit drugs) are mostly posited, one way or another, on the assumption that substance use and addiction are rational decisions. Raising prices, imposing nuisance costs, informing teenagers of the dangers of smoking and drinking, putting drug users in jail, etc. all have their roots in traditional microeconomic modeling of consumption decisions. These models, in turn, are based

on assumptions such as "normal" discounting, foresight, etc. But much evidence from psychology suggests that individuals do not always discount "normally"; that in fact, they discount near-term choices heavily but choices which will be made in the future hardly at all. The "hyperbolic discounter," asked if he will drink heavily next Friday, says he will not because he is thinking of the hangover that will follow on Saturday. But *this* Friday, i.e. today, he *will* drink heavily, because he has discounted tomorrow's hangover. And he knows that when next Friday rolls around, the good intentions he expresses now will be forgotten, so what's the good of trying to quit? This is not too far removed from Thomas Schelling's schizophrenic model of smoking in which a long-term self and a short-term self are in perpetual conflict, with the short-term self usually winning.

If there is merit in these psychologically-grounded models of addiction (indeed, of a range of risk choices), then the required policy instruments may not be the traditional taxes and penalties. Commitment devices – contracts and practices which bind the addict to a decision to quit – and support networks would be the required tools.

Conclusion

This broad overview points to three main conclusions:

- Russia is entering into health care system reform at a stage of development where policy choices can make a real difference.
- There is no "one size fits all" approach to health systems design, and Russian policy makers should be wary of off-the-shelf approaches.
- Poor health behaviours such as alcohol abuse and smoking major problems in Russia. While there is some understanding of robust policy responses, there are also problems: how to estimate costs, how to bring these to bear on those responsible, and what sort of model of bad behaviour to use when designing policy responses.

Russian Mortality Fluctuations since 1980

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Introduction

In March 2001 my colleagues and I published a paper in the Lancet (Shkolnikov et al. 2001) summarizing the fluctuations in mortality that had occurred in Russia between 1991 and 1998. Our main interest was in looking at whether the causes of death that had increased so rapidly in the period 1991-94 were also the ones that declined in the subsequent period up to 1998, when life expectancy at birth showed a steady improvement. In general they were. While we were aware that the 1999 data showed increases in mortality from a broad range of causes, none of us anticipated that mortality would continue to increase up until the present time. However, this is what has happened. As can be seen in Figure 1 life expectancy at birth in males and females has fallen each year from 1998 to 2002. In 2002 for males it was 58.5 years and for females 72.0 (Evgueny Andreev, personal communication). Provisional estimates based on mortality in the first part of 2003 suggest that life expectancy has fallen further (Evgueny Andreev, personal communication).

The increase in mortality rates that followed the financial collapse in August 1998 was perhaps to be anticipated. However, it was thought that this would be a transient effect, particularly as from 1999 onwards the macro-economic indicators (such as GDP per capita) showed evidence of steady improvement. This was in sharp contrast to the years 1991-94, in which the enormous upheavals and changes brought about by the collapse of the Soviet Union were accompanied by worsening of the macroeconomic situation. The extended decline in life expectancy since 1998 cannot therefore be simply explained by reference to macro-economic indicators.

This paper provides a summary of key aspects of what is currently known about the mortality fluctuations in Russia since the mid-1970s. It then considers some of the issues about the biology of disease processes that may help us understand some features of the complex Russian mortality dynamics, paying particular attention to the proximal role of alcohol. Finally, it suggests that some features of the mortality fluctuations could be best explained by hypothesizing the existence of a sub-group of the Russian population who have a set of social, psychological and biological vulnerabilities that make them particularly sensitive to major shocks and upheavals such as the collapse of communism and the 1998 financial crisis. If this is the case, this has important implications for social policy both in terms of protecting the vulnerable as well as taking steps to ameliorate the social process that appears to be continually generating this vulnerable sub-group.

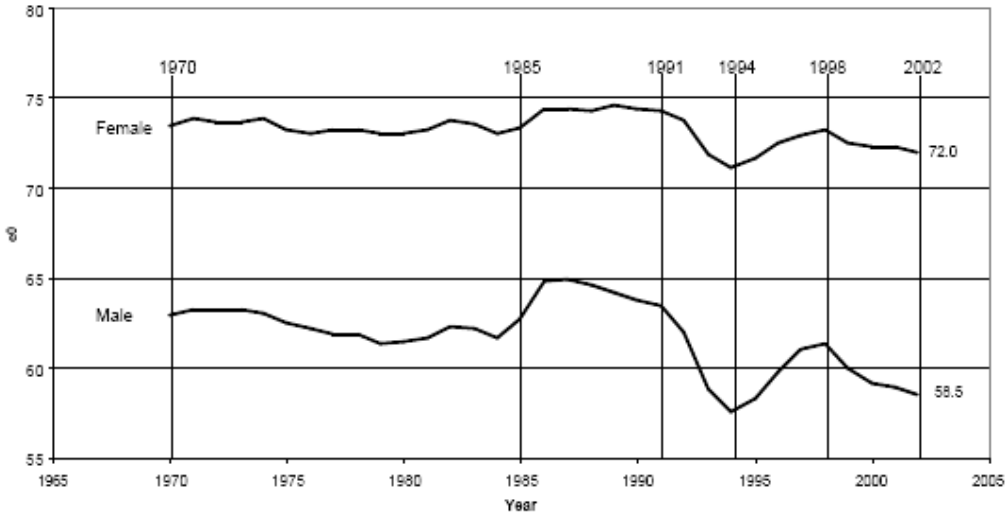

Figure 1. Russian life expectancy at birth 1970-2000. Source: Health for All database and Goskomstat (2001) and Evgueny Andreev (2002).

Life-expectancy at birth since 1970

There are a number of well known but important features of life expectancy in Russia since 1970:

- The level of life expectancy at birth in Russia has been the lowest or among the lowest of any industrialized country since 1970. Moreover, the gap between Russia and Western European countries has generally grown, as these without exception have increased their life-expectancy year–on-year since 1950 (see Figure 2).

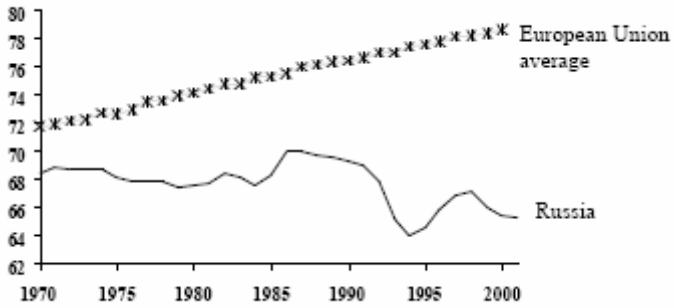

Figure 2. Life expectancy at birth (years) in Russia and the EU, 1970-2001.
Source: WHO HFA.
Note: M+F combined

- Although until the end of the 1990s Russian life-expectancy showed similar fluctuations to many other parts of the former Soviet union (especially the Baltic states; see Figure 3), life expectancy in Russia has been the lowest of the former Eastern block countries. Detailed international comparisons of Russian mortality

with other countries have been reported elsewhere (Meslé and Hertrich 1997, Shkolnikov et al. 1998).

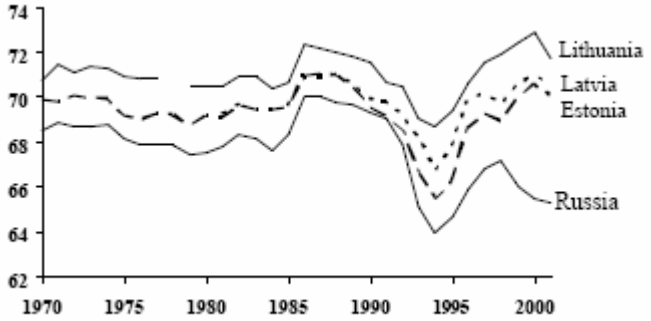

Figure 3. Life expectancy at birth (years) in Russia and the EU, 1970-2001.
Source: WHO HFA.
Note: M+F combined.

- One of the most notable features of Russian life expectancy in the past 3 decades has been the very substantial difference between males and females (Figure 4). In most Western countries the difference has been around 6 years and has shown a tendency to decline. In Russia since 1970 it has generally been 10 years or more, reaching over 13 years in the years 1994 and 1995 and again in 2000 and 2001. This is very strong evidence that there are crucial aspects of the excess male mortality in Russia that cannot be attributable to general environmental factors – which would be expected to equally influence both sexes.

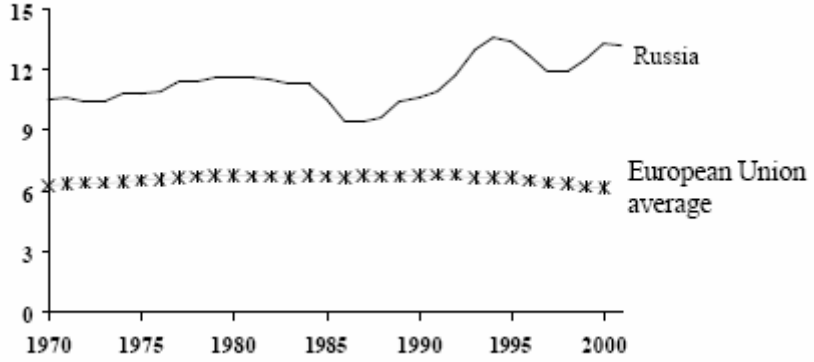

Figure 4. Sex differences (*F minus M*) in life expectancy at birth (years), 1970-2001. Source WHO HFA.

Despite the fact that there are large differences in life expectancy at birth between males, in terms of mortality rates, the proportional changes over time have been very similar in men and women (Leon et al. 1997).

Extensive analyses have been conducted that have identified which age-groups have contributed most to the fluctuations in Russian life expectancy described above

(Shkolnikov et al. 1998). These have shown that it is rises and falls of mortality among men and women of working age that are central to this phenomenon. Contrary to what is often assumed, it is not the classically "vulnerable" groups of people at the extremes of the age distribution (the young and the old) who have contributed to these fluctuations in life-expectancy (see Figure 5). In fact, as illustrated in Figure 5, mortality rates at age 0-14 have generally been declining since 1980, with the exception of a small increase in the early 1990s. In old age rates have tended to stagnate, although again there was a suggestion of a small scale increase in the early 1990s.

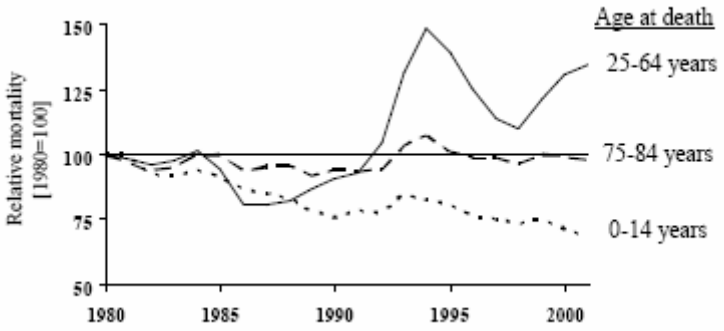

Figure 5. Mortality at working ages in Russia drives fluctuations in life-expectancy.
Source: WHO HFA.
Note: M+F combined.

Influential events

The fluctuations in mortality at working ages seen in men and women have been repeatedly linked to a number of key events. The Brezhnev Soviet-era was characterized by stagnation in female life expectancy and small-scale declines and recoveries in male life expectancy at birth. The first large-scale fluctuation coincided with the introduction in 1985 of the anti-alcohol campaign. The effects of this campaign on the supply and consumption of alcohol have been analyzed and discussed in depth elsewhere (Nemtsov 2000 and 2002). Among researchers there seems to be a consensus that there is a real causal link between declining mortality and the direct effects of the anti-alcohol campaign (Nemtsov 2002, Shkolnikov and Nemtsov 1997). Following the abrupt decline in mortality in 1985-86, the subsequent reversal and slow increase in mortality from 1988 onwards has been attributed to alcohol becoming an increasingly irrelevant issue for the Soviet state and with an increase in home production.

The catastrophic increase in mortality of the early 1990s started in 1991/92 and coincided with the collapse of the Soviet Union. There is less consensus, however, among researchers about the causal factors underlying this unprecedented decline in life expectancy in the early 1990s. Between 1991 and 1994 there was a 6 year decline among males. Andreev (2002) has reviewed and discussed the different views on what underlay this decline. One view is that the increase in mortality in the early 1990s was an inevitable adjustment following the "artificial" suppression of mortality that occurred due to the anti-alcohol campaign. Another view is that it represents a return to the longer term trends evident since the mid-1960s. Both of these perspectives conceive of the 1990s decline in life expectancy as involving an almost homeostatic demographic

mechanism. The third class of explanation for the sharp decline in life expectancy in 1991-94 is that it is a direct consequence of social and economic "stress" that arose as a consequence of the transition. This explanation has found particular favor among those in medicine and public health.

The most recent mortality reversal, occurring in 1998-99, coincided as already discussed with the collapse of the Russian financial system in August 1998. There are only a few papers that have considered the causal mechanisms involved. Little work has been done to see how far the decline in 1998-2002 has parallels with and can be explained in the same terms as the 1991-94 decline in life expectancy.

The recent paper by (2002) includes a very important set of figures that show the numbers of deaths by month over the period 1983-2001. This is reproduced on the following page as Figure 6.[6] What is evident is that there was a sustained fall in the number of deaths among men after May 1985, the month in which the anti-alcohol campaign was introduced. Among males this was sufficient to remove any indication of an excess in the winter of 1985/86 and to blunt the corresponding excess for females. Thus there is a close temporal linkage between the onset of the anti-alcohol campaign and reduced mortality. Formally the Soviet Union was abolished at midnight on 31 December 1991. Again there is a striking and consistent increasing trend in the number of male deaths from February 1992 to a peak in May 1994. There is also an increase in female deaths over this period compared to the equivalent months in the preceding years. There thus appears to be a close and clear temporal link between the increase in the number of deaths with the formal end of the USSR, at least for males. Finally, there is the event of the financial collapse in August 1998. There is a suggestion of an increasing number of male deaths from this point, although the picture for females is less clear. The temporal evidence here is consistent with an almost immediate effect on the number of deaths following the August 1998 crisis, although it is weaker than for the other two periods considered.

Overall Figure 6 does support (for males in particular) the notion that changes in mortality are linked to specific events. For the anti-alcohol campaign – this was an actual reduction in availability and consumption of alcohol.[7] For the 1991-94 and 1998-2001 upturns in mortality these appear to have started within a month or so of dramatic societal-level events. What mechanisms could explain this ? In order to try and answer this question we need to look at how different mortality rates from causes of death have fluctuated.

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[6] In interpreting Figure 6 it should be remembered that this is total deaths at all ages. This may account for the greater apparent seasonality of female deaths, which on average are going to be comprised of deaths occurring at an older age where winter excesses of influenza and other viral infections may be particularly important. Comparing the absolute numbers of deaths in each sex can also give no indication of differences in mortality rates because of substantial differences in the size and age composition of the underlying population at risk.

[7] Further analyses of these monthly mortality data that removed underlying patterns of seasonality from the data would be very valuable.

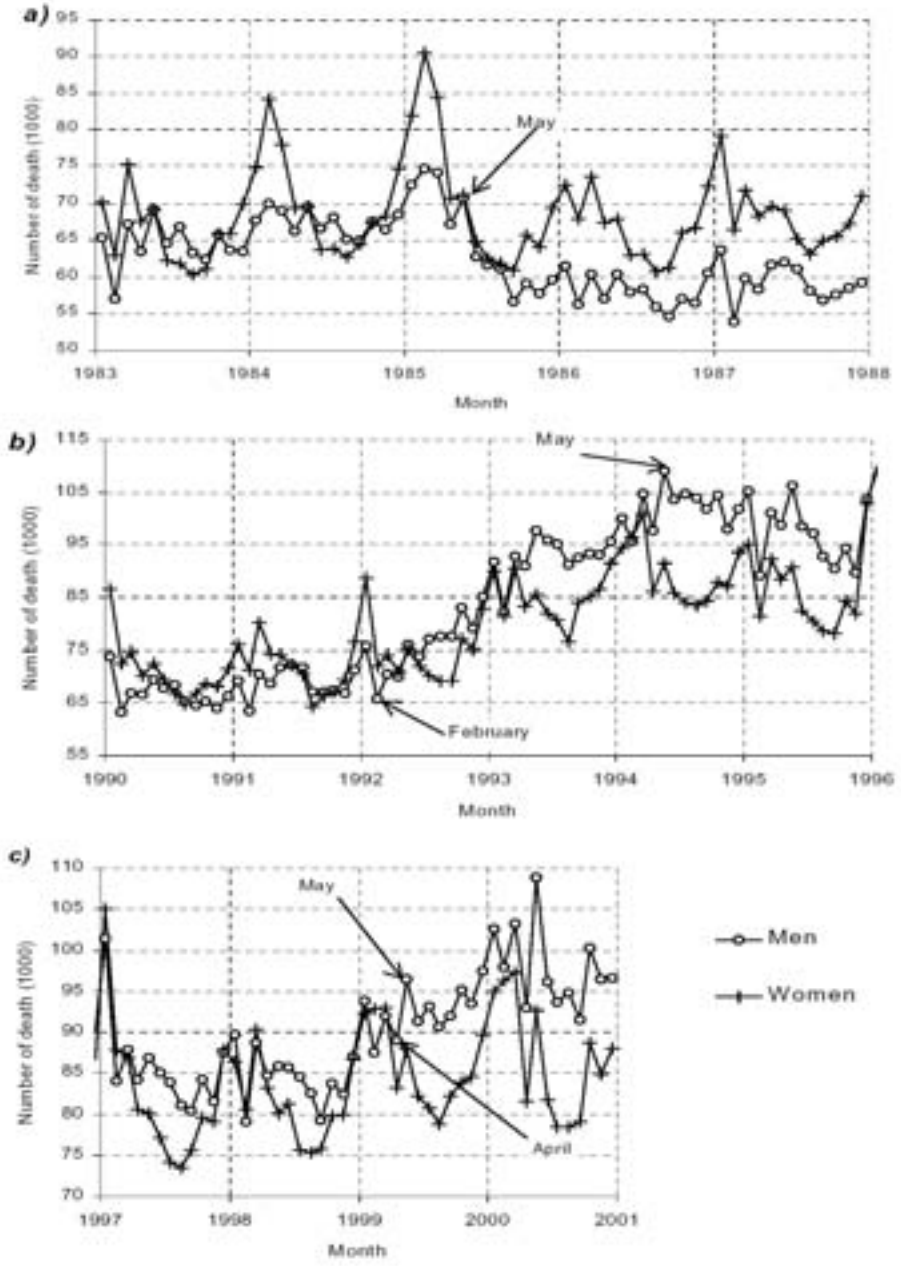

Figure 6: Number of deaths by calendar month in Russia 1983-2001. Source : EM Andreev, Did the economic crisis cause the mortality fluctuations in Russia in the 1990s? Figure 3. IUSSP XXIV General Population Conference, 2002. Reproduced with the author's permission.

Mortality fluctuations differ by cause of death

A large number of analyses of mortality trends by cause of death[8] in Russia have been published in the literature (Leon et al. 1997, Meslé et al. 1992, Meslé and Shkolnikov 1995, Shkolnikov et al. 1995, Shkolnikov et al. 2001). A very important and highly informative observation is that total mortality from cancer, although an important contributor to overall death rates and life expectancy, has shown almost none of the sharp and acute changes that have characterized most other causes of death since the mid-1980s (Figure 7). The fact that cancer does not show any real fluctuations over the entire period provides very strong evidence that the variations seen for other causes and life expectancy as a whole are unlikely to be due to bias in the estimation of the population at risk (Leon et al. 1997). The insensitivity of cancer mortality to the large-scale changes in many aspects of life over the past 25 years in Russia is consistent with our current understanding of the biology of cancer and the "latent periods" that exist between exposure to a carcinogen and the diagnosis of a malignancy.

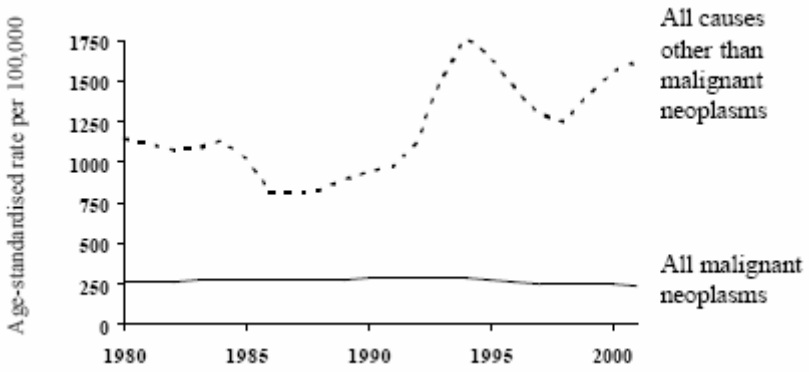

Figure 7. Mortality from cancer in Russia is insensitive to changes 1980-2001 (men aged 25-64 years). Source: WHO HFA

Overall Figure 6 does support (for males in particular) the notion that changes in mortality are linked to specific events. For the anti-alcohol campaign – this was an actual reduction in availability and consumption of alcohol.[9] For the 1991-94 and 1998-2001 upturns in mortality these appear to have started within a month or so of dramatic societal-level events. What mechanisms could explain this ? In order to try and answer this question we need to look at how different mortality rates from causes of death have fluctuated.

As can be seen from Figure 8 all of the major categories of cause of death (other than cancer) do show broadly parallel fluctuations in rates in the period 1980-2001 in

[8] A considerable amount of work has been done by the team of Mesle, Shkolnikov, Vallin and others on the validity of cause-specific mortality rates for the period up to the end of the 1990s in Russia. However, the adoption of ICD-10 in Russia in 1999 appears to have generated some problems in comparability that have yet to be fully resolved.

[9] Further analyses of these monthly mortality data that removed underlying patterns of seasonality from the data would be very valuable.

men and women. As these figures have rates plotted on a log scale, one can directly the proportional changes in mortality for each cause group can be easily compared. The largest fluctuations are shown for external causes (injuries, poisonings and violence). When analyzed in more detail, particularly large fluctuations are seen for acute alcohol poisoning.

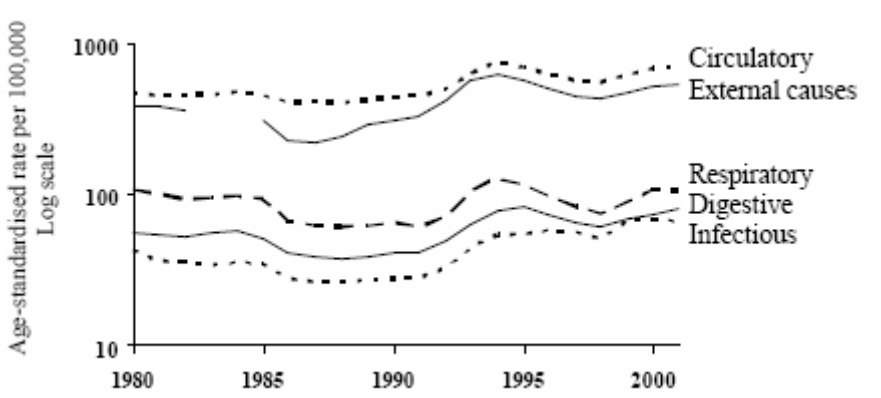

Figure 8A. Mortality by cause in Russian men aged 25-64, 1980-2001. Source: WHO HFA.

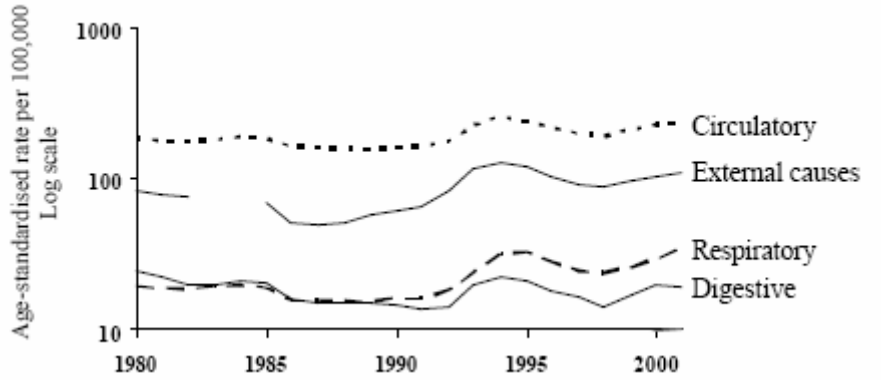

Figure 8B. Mortality by cause in Russian women aged 25-64, 1980-2001. Source WHO HFA.
Note: Rates for infectious diseases not shown as these are <10/100,000.

A summary of the extent of fluctuations in some of some key specific causes during the 1990s is provided in Table 1 for men and women aged 15-74 years. Although the absolute mortality rates for the causes shown are much larger for men than women, the two sexes show similar proportional changes as judged by the mortality rate ratios. Mortality rates for acute alcohol poisoning showed the largest proportional increases for men and women in both the period 1998 to 2001 and 1991 to 1994. Cirrhosis of the liver also showed substantial increases in both these periods, although they were appreciably larger in 1991 to 1994. Although smaller in relative terms, both periods also saw increases in mortality from ischaemic heart disease.

Table 1 – Age-standardized mortality rates per 100,000 and mortality rate ratios for selected causes and years 1991-2001 by sex, Russia, ages 15-74. Source : Vladimir Shkolnikov (personal communication)

Cause of death	Men								Women							
	Age-standardized Mortality rates per 100,000				Mortality rate ratios				Age-standardized Mortality rates per 100,000				Mortality rate ratios			
	1991	1994	1998	2001	2001/ 1998	1994/ 1991	2001/ 1991	2001/ 1994	1991	1994	1998	2001	2001/ 1998	1994/ 1991	2001/ 1991	2001/ 1994
Tuberculosis	*21.0*	*37.0*	*37.2*	*46.9*	1.26	1.76	2.24	1.27	*2.2*	*3.5*	*4.1*	*5.8*	1.40	1.63	2.69	1.65
Ischaemic heart disease	*339.9*	*513.0*	*393.8*	*474.4*	1.20	1.51	1.40	0.92	*121.7*	*173.6*	*136.8*	*157.0*	1.15	1.43	1.29	0.90
Cerebrovascular disease	*177.8*	*250.1*	*221.5*	*258.5*	1.17	1.41	1.45	1.03	*115.0*	*149.4*	*136.1*	*148.1*	1.09	1.30	1.29	0.99
Cirrhosis of liver	*16.4*	*32.3*	*24.1*	*34.5*	1.43	1.97	2.11	1.07	*7.3*	*15.1*	*11.2*	*17.6*	1.57	2.09	2.43	1.16
Motor vehicle accidents	*50.4*	*44.7*	*36.1*	*50.6*	1.40	0.89	1.00	1.13	*11.5*	*11.2*	*10.7*	*14.3*	1.33	0.97	1.24	1.28
Acute alcohol poisoning	*26.0*	*81.1*	*38.3*	*59.4*	1.55	3.11	2.28	0.73	*5.7*	*21.3*	*9.6*	*15.6*	1.63	3.73	2.74	0.73
Suicide	*56.9*	*94.1*	*76.7*	*86.0*	1.12	1.65	1.51	0.91	*11.5*	*14.6*	*11.9*	*12.1*	1.02	1.27	1.05	0.83
Homicide	*30.6*	*64.3*	*43.9*	*56.5*	1.29	2.10	1.85	0.88	*8.0*	*16.9*	*12.1*	*15.4*	1.27	2.13	1.93	0.91
Undetermined violent death	*27.6*	*73.0*	*57.3*	*60.5*	1.06	2.65	2.19	0.83	*5.9*	*15.9*	*12.5*	*12.4*	0.99	2.71	2.11	0.78
All causes	*1424.6*	*2123.7*	*1671.5*	*1991.6*	1.19	1.49	1.40	0.94	*571.6*	*770.9*	*638.8*	*720.3*	1.13	1.35	1.26	0.93

Overall in fact, there is a similarity in the cause-specific pattern of increases seen in the two periods of increasing overall mortality. The exception to this in Table 1 is mortality from motor vehicle accidents. In the earlier period (1991-94) there was a decline, probably driven by a reduction in traffic volume. However, in the later period (1998-2001) there was an increase, probably driven by an increase in traffic volume.

For all causes shown in Table 1 rates are higher in 2001 than they were in 1991. This is particularly marked for acute alcohol poisoning, cirrhosis of the liver and tuberculosis. Tuberculosis mortality in fact showed a strong trend of increase throughout the period from 1991, while most other causes showed marked declines in the period 1994-98. This reflects particular features of a resurgent problem of tuberculosis linked to a complex set of factors discussed elsewhere (Shilova 2001).

Table 1 also shows a comparison of rates in 2001 and 1994. Most causes of death shown have lower rates in 2001. The exceptions are tuberculosis, motor vehicle accidents and to a smaller degree cirrhosis of the liver.

In summary, previous work has shown strong similarities between the causes that declined as a result of the anti-alcohol campaign in the mid-1980s and those that increased and declined again in the period up until 1998. The above analysis suggests that the cause-specific pattern of increase in the period 1998-2001 is the same as previously observed. There are two exceptions to this: tuberculosis and motor vehicle accident deaths – which are explicable in terms of new epidemiological features that emerged in the 1990s.

Alcohol, time lags and biology

As already discussed above, the changes in mortality rates in Russia since the mid-1980s have been very abrupt and appear to have occurred within a very short period of what are believed to be the precipitating events (i.e. the start of the anti-alcohol campaign, the end of the USSR and the financial collapse of August 1998). For some causes of death this very short time lag is readily understandable in biological terms, as in the case of acute alcohol poisoning. Individuals who drink too much alcohol in one session can die of fatal levels of blood ethanol even if they have not had a previous history of alcohol abuse.

This is illustrated in Figure 9 where there is a close linkage between alcohol consumption and acute alcohol poisoning mortality rates. As has already been noted, cirrhosis of the liver has shown very marked fluctuations in mortality since the mid-1980s. In Figure 10 it is evident, however, that the fluctuations in mortality from this cause follow 1-year behind those for acute alcohol poisoning.

If we consider mortality rates from acute alcohol poisoning as a proxy for population alcohol consumption, how can we explain these sharp fluctuations occurring so rapidly? Death from cirrhosis of the liver generally occurs only among people who have drunk heavily over a period of 10 or even 20 years. In this sense it is a disease with a long latent period. The answer is straightforward. Abrupt cessation of alcohol consumption in an individual with a very damaged liver can halt any further acute deterioration – and thus avoid death. However, if this person resumes drinking heavily again in the future the damage to their liver will resume, and for some this will only

have to be relatively minor for them to become critically ill and die. This "conveyor-belt" effect has been discussed by others (Norrstron and Skog 2001).

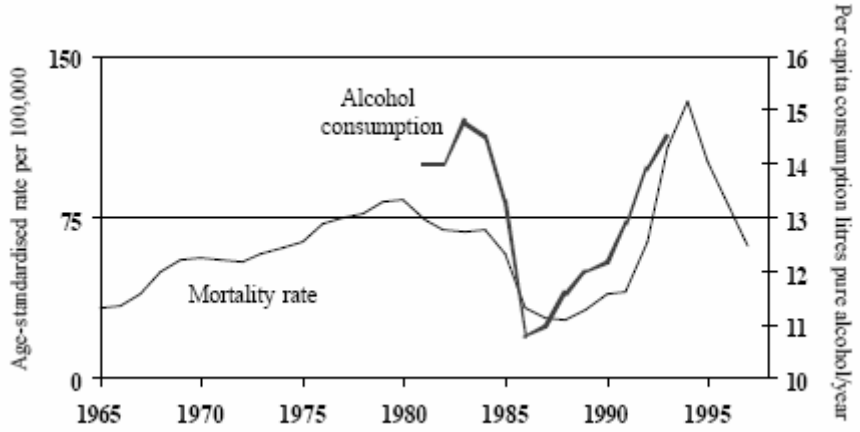

Figure 9. Acute alcohol poisoning mortality, men aged 30-59.

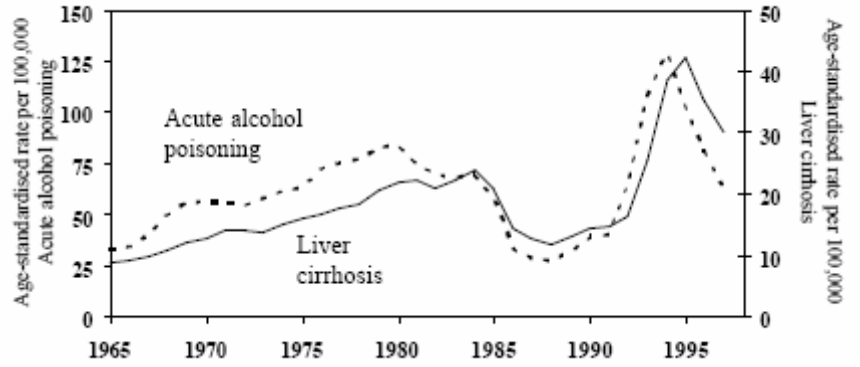

Figure 10. One-year lag in liver cirrhosis mortality, men aged 30-59.

The role of alcohol consumption as a driver of mortality fluctuations in the major single cause of death in Russia – ischaemic heart disease – has been very contentious (Bobak and Marmot 1999, McKee et al. 2001). This is in part because the evidence from epidemiological studies in the West suggests that ischaemic heart disease risk declines as alcohol consumption rises. However, as reviewed previously (McKee and Britton 1998), there are a number of mechanisms that could link binge or heavy, episodic drinking to death from "ischaemic heart disease". These include the precipitation of cardiac arrythmias linked to damage to the heart muscle, which may mean that some of the deaths under this category in Russia have a different underlying pathology to what is commonly seen in the West. .Moreover, recent evidence from epidemiological studies in Finland (Kauhanan et al. 1997), Novosibirsk (Malyutina et al. 2002) and Udmurtia (Shkolnikov et al. 2001) suggests that mortality from "ischameic heart disease" is raised in binge drinkers.

Perhaps the most persuasive indirect evidence for an acute link between alcohol consumption and mortality from "ischaemic heart disease" is presented in Figure 11.

This shows that there is an almost identical temporal pattern in fluctuations in mortality from IHD as seen for acute alcohol poisoning, in contrast to liver cirrhosis which shows a one-year lag (Figure 10). It is a major research priority to further our understanding of what may explain this, including the possibility that some of the sudden "IHD" deaths may in fact be due to acute alcohol poisoning.

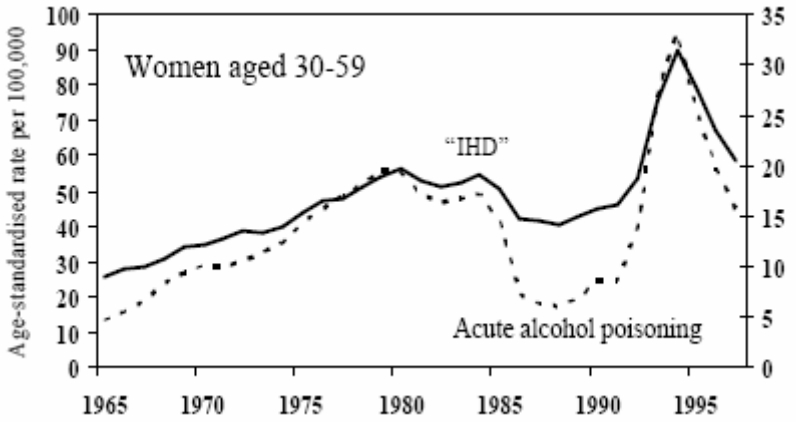

Figure 11. "Ischaemic heart disease" and acute alcohol poisoning mortality in Russia.

Vulnerabilities and vulnerable groups

Socio-economic differences in mortality, measured by education in particular, have been shown to exist in Russia (Shkolnikov et al. 2001, Shkolnikov et al. 1998). A recent analysis of two cohorts from St Petersburg suggests that increased mortality that occurred in the early 1990s was concentrated among people with lower educational levels (Plovinski et al. 2003). Analyses of geographical variation have suggested that the biggest declines in life expectancy in the early 1990s occurred in large metropolitan centers such as Moscow and St Petersburg, perhaps due to the greater pace of social and economic change in such places Walberg et al. 1998).

These findings indicate that the impact of the changes in Russian society since the mid-1980s have not affected all people equally. While this has been assumed to be the case by many people working in this research area, there have been no successful attempts to define what characterizes those individuals whose health status has been particularly sensitive to the social and economic disruptions in the past 20 years.

Within the economic literature some progress has been made on a related issue. A recent paper has looked at vulnerability to economic loss (reduction in consumption) of households around the time of the 1998 financial collapse (Gerry and Li. 2002). Using data from the Russian Longitudinal Monitoring Study (RLMS), Gerry and Li found that "those most vulnerable during the crisis were less educated individuals living in urban areas, in households containing greater numbers of pensioners." These findings parallel what has already been noted in the epidemiological literature about increases in mortality in the 1990s being particularly large among those with less education and those living in the large metropolitan centers. In addition, they found that "increases in home production and help from relatives acted to decrease vulnerability." The paper goes on to suggest that people and households also varied according to their capacities to recover from the crisis : "Following the crisis, amongst the least vulnerable were,

better educated individuals, resident in urban areas, able to increase home production, and in receipt of improved pensions."

The importance of this paper is that it lays out a systematic framework for considering individual and household vulnerabilities to various shocks and crises. There is the initial risk or insult, the capacities of the individual or household to mobilize available resources (even if these are very limited – poverty is not the same as vulnerability) and then the outcome which in economic terms in the paper were changes in consumption, but in health terms would be changes in health status and death.

Extending these ideas further into the health arena, it is obvious that the nature of individual vulnerability to declines in health or death shares many of the distal components studied by Gerry and Li. However, in addition there are psychological and biological components that need to be considered. It would seem plausible, for example, that the economic vulnerability and resilience described by them would inform and be influenced by psychological vulnerability – which is indeed implicit in the notion that people vary in their capacities to mobilize what resources they do have or could call on (for example in the form of pensions or state benefits).

In terms of the ultimate outcome of interest here (death) people will vary according to their cumulative health status at the point the crisis impacts. Thus in the case of someone whose liver has been damaged by a long history heavy drinking, they are going to be more vulnerable to death from liver cirrhosis by small increases in alcohol consumption in response to the crisis than someone who does not have this background.

Alcohol abuse fits in very well to a model of vulnerability. Heavy drinking itself has adverse consequences on some factors that may confer resilience: friendship and family relations can be damaged, people may have problems holding down a job, capacities will be reduced to do things such as cultivate an allotment for growing your own food and psychological robustness in other respects will be damaged. This creates the well-known downward spiral of life circumstances. Alcohol, therefore, not only can be the ultimate (proximate) cause of death but prior to this can result in behavioral change that reduces resilience and makes an individual more vulnerable to adverse effects of economic and social shocks.

The social and economic "shocks" of 1991 and 1998 can therefore be hypothesized as having fatal effects on people who were already very vulnerable for a host of related reasons, economic, social, psychological and biological many of which will be interrelated. This emphasis on a vulnerable sub-group of the Russian population is in contrast to explanations that implicitly at least assume uniform effects. While there is no doubt that the effects of the shocks will have been noted by most people, their capacities to deal with their effects is what has varied.

There are several other issues that need mentioning. Firstly, the strength of the "shock" experienced by people will however vary, particularly by geography, with the populations of the metropolitan centers experiencing the largest and most acute effects. There is then the key issue of what is the nature of the recovery from shock. There is often reference to adaptation to the new circumstances as characterizing the mid-1990s, when people had come to terms with their new circumstances. What would this mean, however, for the vulnerable sub-group ? It could be that men, for example, whose drinking increased markedly had somehow managed to remain within a family that

provided a framework for them slowly rehabilitating themselves. This process would clearly take time. Finally, there is the important question of the mechanisms that result in people moving into this vulnerable sub-group. In particular, how are younger adults recruited ? All of these issues require further thought and study.

Research priorities

Individual-level epidemiological evidence on the exact role of alcohol as a proximal, ultimate cause of death (regardless of medically certified cause) is an important priority, particularly the problem of "ischaemic heart disease". Further work, bringing together epidemiologists, economists and sociologists to explore the ideas of vulnerability out lined above is also a priority.

Policy implications

It is clear that even greater efforts need to be made to develop policies aimed at reducing alcohol abuse in Russia. Evidence from other countries, in particular Finland and Sweden, suggests that this will require an integrated package of policy interventions, including taxation of alcohol sales, restricting opportunities to purchase alcohol, both in terms of numbers of outlets and their opening times, increasing awareness among the public, health professionals and the hospitality and retail sectors of the harm caused by excessive alcohol consumption, strengthening prevention and treatment services building on the network of general practitioners and specialized clinics, and support for non-governmental organizations concerned with the harmful consequences of alcohol. At the same time, it is essential to understand that alcohol is deeply embedded in the Russian society and its abuse is fuelled by a complex of socio-psychological and socio-cultural factors that reflect both the totalitarian past and contemporary socio-economic challenges.

The idea that the mortality fluctuations are mainly the result of problems in a vulnerable sub-section of the Russian population, if correct, highlights the need to develop social policies that seek to provide increased support to vulnerable individuals and families. Clearly improvements in the state of the economy at large is a prerequisite for this although on its own it will not be sufficient. Particular attention should be given to identifying interventions that reduce recruitment to this vulnerable group, particularly among young people.

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Health Care Provision and Financing

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Health care organization

Russia is abundantly endowed with health infrastructure (see Table 1). In 2001, there were 10,600 hospital settings with a total of 1,653,000 beds and 21,300 outpatient facilities capable of serving 3,548,000 outpatients per shift. Russia's health care system employed over 3,5 million individuals, including 678,000 physicians and 1,544,000 mid-level health professionals. Outpatient care in Russia is predominantly provided at *polyclinics* that encompass physicians of various specialties. Transition to general physician (GP) practices has been declared as a policy priority task. GPs will be expected to replace traditional community polyclinic-based internists. However, not much progress has been achieved so far. According to the country's Ministry of Health (MoH), only 5,300 GPs have been trained, and less than half of them (2,300) actually practice as such.

Organizational/administrative and economic aspects

Russia's health care sector has public (state-owned) and private health care systems. The former is subdivided into federal, regional and municipal levels. The Federal level encompasses health institutions subordinated to Russia's MoH or other federal ministries and agencies. In 2000, the country had 3,556 such facilities not counting those owned by military and law-enforcement agencies. The federal heath care system also includes State Sanitary-Epidemiological Surveillance institutions (2,296 in 2000). Federal institutions account for 15 and 6 percent of all Russia's inpatient and outpatient facilities, respectively, and employ 10 percent of all of the nation's health professionals. Most MoH institutions provide tertiary health services to the general population. Health care institutions subordinated to other federal agencies provide serve specified population categories, i.e. such agencies' employees and their family members. However, federal agency-controlled facilities have started to provide health care to any resident, irrespective of his/her occupation or place of residence, on a fee-for-service basis.

Most non-federal health care facilities belong to Russia's regions or municipalities. Private health care was launched in the 1990s through creation of new non-governmental institutions, but private hospitals and outpatient facilities account for only 0.8 and 8 percent of the total number of respective institutions in 2000. Privatization of state-owned federal, regional and municipal health care facilities is prohibited by law.

Table 1. Main Health and Health Care Indicators in Russia

	1985	1990	1995	2000	2001
Number of hospitals (000)	12,5	12,8	12,1	10,7	10,6
Hospital beds per 1,000 residents	13,5	13,8	12,6	11,6	11,5
Number of outpatient facilities (000)	19,4	21,5	21,1	21,3	21,3
Number of physicians of all specialties, total	620,7	667,3	653,7	680,2	677,8
Number of physicians of all specialties per 10,000 residents	43,2	45,0	44,5	47,2	47,3
Number of mid-level medical professionals, total	1756,7	1844,0	1628,4	1563,6	1544,4
Number of mid-level medical professionals, per 10,000 residents	122,4	124,5	110,0	108,4	107,8
Visits to physicians/doctors per resident per year	11,1	9,5	9,1	9,5	9,5
Number of hospital admissions per 100,000 residents per year	24,4	22,8	21,2	22,0	22,4

Source: Health Care in the Russian Federation; Statistical magazine. Moscow: Goskomstat/Russia, 1995; Russian Statistical Annual. Statistical compilation; Moscow: Goskomstat/Russia, 1999, pp. 213, 216;: Health Care in the Russian Federation; Statistical magazine. Moscow: Goskomstat/Russia, 2001, pp. 202, 207, 234, 284, 290, 292.

Government guarantees regarding accessibility of health care

The Russian Constitution establishes each citizen's right to obtain free-of-charge health services at public health care facilities. Since 1998, a Program of Government Guarantees Regarding Provision of Health Care Services to the Population of the Russian Federation is adopted annually by Government. The program guarantees provision of the Soviet-era package of services. The program provides for reduction of cost-ineffective hospital beds and necessitates transition of a certain portion of inpatient cases to outpatient settings (e.g. to day hospitals at traditional hospitals and polyclinics).

Health care financing

Russia has a mixed general tax revenue / health insurance – based health care financing system. Public health care funding comes from the federal, regional and municipal budgets, as well as from payments for mandatory health insurance (MHI) coverage of employed citizens made by corporations and self-employed citizens in accordance with relevant Russian tax legislation.

The distribution of public health care expenditure by financing source in 2002 is shown in Figure 1. Most public health care finance comes from regional and municipal/local tax revenue budgets. In 2002, they accounted for 67 percent of the overall public health expenditure. The share of the federal budget and employers' mandatory health insurance payments for working residents was 10 and 23 percent of the overall public health expenditure, respectively.

The share of public health care expenditure in GDP has fluctuated significantly over the last few years (see Table 2), but this reflects the effects of inflation. Public health expenditure in real terms – calculated using GDP deflators - is more informative (Figure 2). Real public health spending has grown since 2000, by 17 percent in 2002.

Public health care spending unevenly distributed across Russian regions. While the average per capita health care funding in Russia was 1,464 rubles ($50) per resident per year in 2001, the indicator ranged from 469 rubles ($16) in Republic of Ingushetia to 6,542 rubles ($224) in Hanty-Mancy Autonomous Territory.

Figure 1. Public Health Care Expenditure by source of funding in 2002.

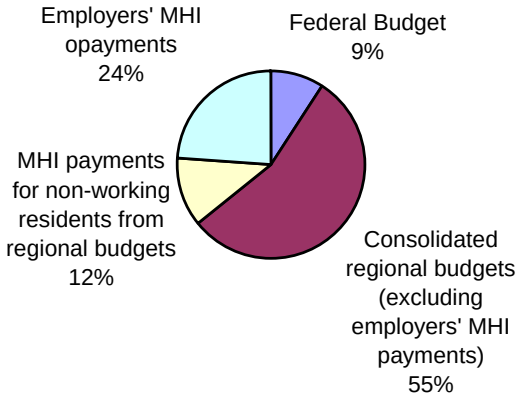


Table 2. Public health care expenditure as a percentage of Russia's GDP

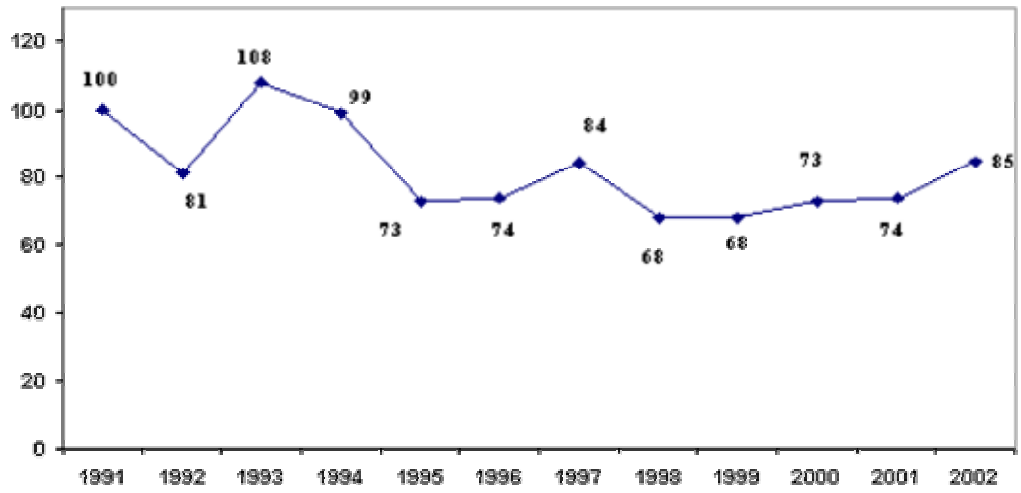
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total	2.4	2.5	3.7	3.9	3.4	3.2	4.1	3.2	2.8	2.8	2.8	3.2
General tax revenue	2.4	2.5	3.1	3.2	2.8	2.6	3.3	2.4	2.1	2.1	2.1	2.4
Corporations' MHI payments for employees	-	-	0.6	0.7	0.6	0.6	0.8	0.8	0.7	0.7	0.7	0.8

Source: Calculations based on data provided by Goskomstat/Russia

The accessibility of free-of-charge government-financed health care decreased dramatically during the 1990s as a result of the general economic crisis. According to optimistic estimates, public health care expenditure (from all public budgets and MHI) has decreased by at least 32 percent in real terms since the early 1990s (see Figure 2). However, government guarantees regarding free health benefit package have never been revised and, as a result, remain valid only on paper. For several years, the share of public health care expenditure in GDP has not exceeded 3.2 percent. Countries with a

comparable level of public health spending guarantee provision of only basic services such as infectious disease control.

Figure 2. Real Public Health Care Expenditure (1991 = 100%)



* Sum total of public tax-based budgets' allocations to HC and physical culture and employers' MHI payments for working residents.

Source: Calculations based on data provided by Goskomstat/Russia with the use of GDP deflators published at the end of respective years (1992 – 17,2; 1993 – 10,2; 1994 – 4,1; 1995 – 2,8; 1996 – 1,4; 1997 - 1,2; 1998 – 1,1; 1999- 1,6; 2000 – 1,4; 2001 – 1,2; 2002 – 1,2).

Such a long-standing mismatch between government commitments and the nation's actual financial capabilities has a negative impact of the health care system as a whole: the scale of disease prevention activities has become insufficient; access to quality health care is low; more and more health services are being provided on a fee-for-service basis, and informal patients' payments for services have become commonplace.

The health care finance statistics given above refer only to spending financed by the public sector and mandatory health insurance. Total health care expenses in Russia also include payments for drugs purchased at retail pharmacies, services provided legally by health care institutions on a fee-for-service basis (so-called "chargeable services"), services financed by voluntary private health insurance, and informal payments to providers for services that are supposed to be provided free of charge. The amount paid by individuals and corporations for voluntary private health insurance, as well as expenditure on chargeable health services, have been growing rapidly (see Table 3). As a result, the public : private health expenditure ratio decreased from 83:17 in 1995 to 60:40 in 2001. The share of chargeable health services in the overall amount grew from 1.7% in 1993 up to 4.8% in 2002. This impressive trend can hardly be explained only by growing demand for health services on the part of high-income population groups; clearly poor households are increasingly paying for medical services out of pocket.

Table 3. Public and private HC expenditure (billion rubles, in 2000 prices)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2001
Public health care expenditure	302.1	277.0	204.5	206.7	235.1	189.1	190.7	203.0	207.3	238.0
Payments for voluntary health insurance	2.1	3.7	4.2	5.6	7.2	6.3	8.8	12.8	19.4	na
Payments for chargeable health services	3.9	5.5	10.2	14.3	19.7	18.9	24.2	27.5	30.9	32.1
Payments for drugs	na	28.4	40.6	45.8	68.2	43.5	60.2	70.1	92.3	na

Source: calculations based on data obtained from: Russian Statistical Annual, 2000; Moscow: Goskomstat/Russia, 2001; Russian Statistical Annual, 2002.; Moscow: Goskomstat/Russia, 2002

Table 4. The share of patients who pay for health care services, according to different surveys, percent

Name of survey or organization	Place and year of survey	Outpatient services	Diagnostic services	Dental care	Inpatient services
Russian Academy of Sciences' Institute of Social and Economic Problems of Populationand Legal Sciences (ISEPP)	Taganrog, 1998	22			60
Kemerovo State University	Kemerovo, 1998	18-38	45	84	51
National Center for Public Opinion Studies (VCIOM)	National sample, 1999	4-20	44	80	34-37
Russian Health Care Foundation	Novgorod region, 2000	24			46
INDEM Foundation	National sample, 1999-2001	34			
Russia Longitudinal Monitoring Survey	National sample, 2001	10	21		15
Independent Institute for Social Policy	2 regions, 2002	30		65	50

Sources: Kulibakin I.B., "Urban health care systems": public survey findings. Kemerovo State University. Sociology Center. Kemerovo, 1998; Morozova Y.A., Ibragimova D., Krasilnikova M., Ovcharova L.: Russian residents' payments for health and educational services. // Public opinion monitoring: economic and social changes, 2000, # 2(46), p. 38; Satarov G.: Diagnosis of the Russian corruption: sociological analysis (Report summary). Moscow, INDEM Foundation, 2002. Sidorina T.Y., Sergeyev N.V.: State social policy and Russians' health. Comments to the household health expenditure survey// "Russian World", #2, 2001; www.cpc.unc.sdu/rlms/.

According to official data on the structure of household spending for final consumption (Goskomstat 200, pp. 34-38), the share of household revenues spent for health care is increasing. In 1994, the share of health services and that of medical devices and personal hygiene items in the overall amount of household expenses was

0.4% and 2.5%, respectively. In 2000, these values increased to 0.9% and 3.5%, respectively. However, there is a substantial difference between households with high and low incomes. Comparison of the two extreme income deciles shows that the poorest households have to spend a larger proportion of their incomes for drugs than the wealthiest families (4.1% vs. 3% in 2000). However, the wealthy spend a much higher share of their income for health services, than the poorest residents (1.8% vs. 0.2%).

Officially reported data does not include informal ('under-the-table') payments made by patients directly to health professionals. However, a range of surveys indicate that out-of-pocket payments for health care, including 'shadow' payments, are widespread (Table 4).

Health care reform

When MHI was introduced in the early 1990s, it was in the context of a health sector reform where insurance was expected to support or replace public health care funding, to enhance the system's financial stability and to provide for a more effective and efficient use of available resources (Chemichovsky et al. 1996). However, the reform has never been accomplished and has lead to ambiguous results (Sheiman 1997, Shishkin 1999).

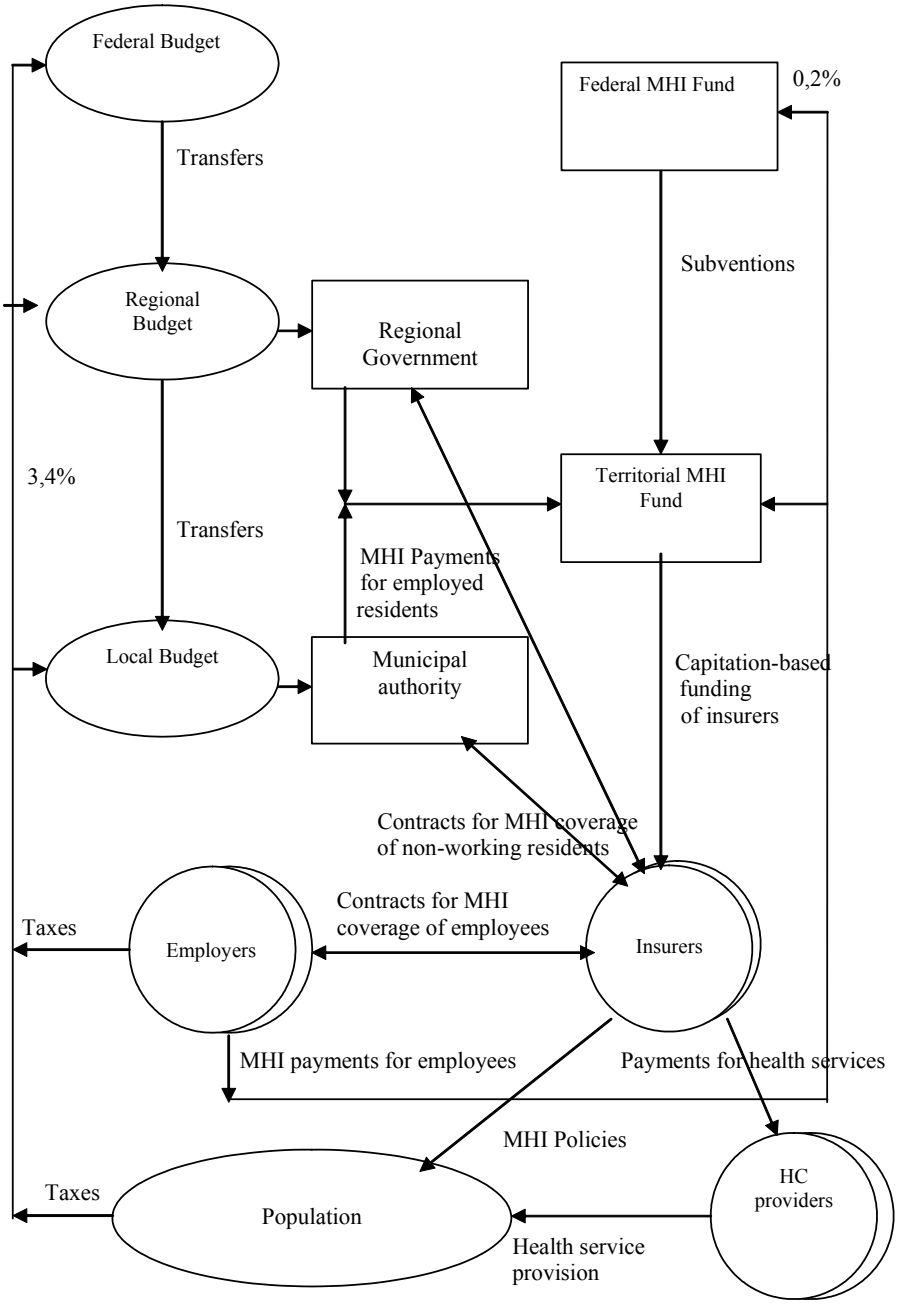
Currently, all Russian citizens have MHI coverage. MHI coverage for working residents is financed by their employers and that for non-working/unemployed individuals by regional and/or local authorities. In 1993, the employers' MHI payment rate was fixed at 3.6% of gross wages. In 2001, MHI premium payments became part of a unified payroll tax. The MHI payment rate for non-working residents is not established by law and is set by regions and municipalities when they develop their annual budgets.

The services covered by MHI are defined by Government in the *Basic MHI Program,* which became part of the *Program of Government Guarantees Regarding Provision of Free-of Charge Health Care Services* in 1998. The basic MHI program is used by Russian regions to develop their Territorial (regional) MHI programs. Funds accumulated within the federal MHI system have been used to finance health care provided under Territorial MHI programs since 1994.

The MHI model established by Russian law is shown schematically in Figure 3. Health insurance is provided by competing firms that enter into contracts with employers (MHI coverage of employees) and authorities (MHI coverage of non-working residents). Health insurance companies select health care institutions to provide services under the MHI program and pay for services provided to MHI policy holders. Territorial MHI Funds, new state institutions, were created in each Russian region to collect MHI payments. The Federal MHI Fund was established with its main task being to level out financial conditions for Territorial MHI funds. Each Territorial MHI Fund provides funds to health insurance companies based on established capitation rates under contracts between health insurers and health care purchasers. When calculating financing rates, each Territorial MHI Fund must take into account age/sex differences of insured populations assigned to various insurance companies. However, local offices of Territorial MHI Funds were allowed to act as also as MHI insurers in 1994. Thus, Russia's MHI system has two types of insurers: health insurance companies and

territorial MHI funds' local offices. As a rule, the former are registered as non-governmental for-profit organizations.

Figure 3. Russia's Mandatory Health Insurance Model



The approach was expected to trigger competition among insurers for MHI purchasers (employers and local authorities), and competition among health care providers for MHI contracts. Competition among private insurers and health care providers was supposed to revitalize the country's health care system and make it use its resources in a more cost-effective manner. However, such expectations turned out to be

based more on theoretical reasoning than a thorough analysis of the situation actually prevailing.

As shown in Table 5 below, the number of MHI insurers grew until 1996, and then started decreasing as a result of both economic factors (small insurance companies could not cover their operating costs with MHI-generated revenues) and administrative decisions (in many Russian regions, health insurance companies have been excluded from the MHI system by regional authorities through prohibitive accreditation procedures). In 2000, 39 Russian regions had health insurance companies only; 29 regions had Territorial MHI Funds and their local affiliates only and; 22 regions had both.

Table 5. Mandatory health insurance actors (end of year)

	1993	1994	1995	1996	1997	1998	1999	2000	2001
Territorial MHI Funds	86	86	88	88	89	90	90	90	91
Territorial MHI Funds' local affiliates, including	1058	1103	1140	1108	1160	1170	1123	1129	982
those acting as health insurers		571	486	423	419	487	500	516	485
health insurance companies	164	439	536	538	461	415	387	362	361

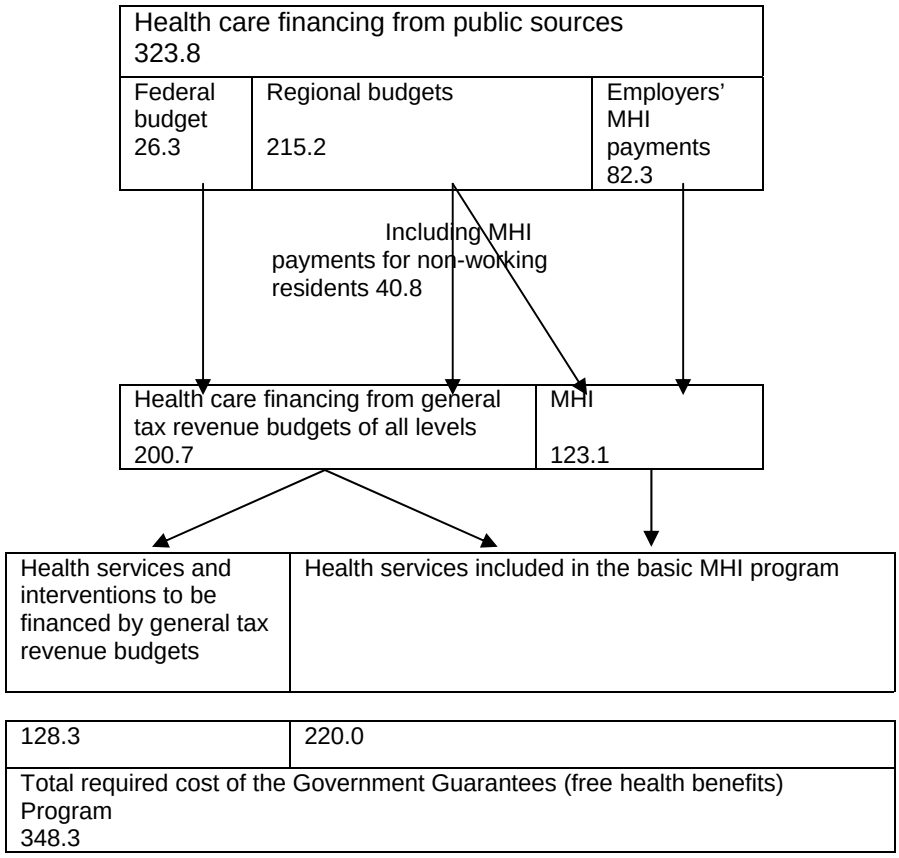
Source: Federal MHI Fund

Implementation of the MHI system began in 1993-1994. However, the sequence or the pace of transition was never established by Russian legislation. Implementation of the MHI system has been poorly controlled by federal authorities and depended solely of regional authorities' attitudes. The system has never been implemented in full. In sum, replacement of the general tax-based health care financing with the MHI has begun, but has never been accomplished. However, introduction of the MHI system, while incomplete, has had a positive stabilizing influence on health care financings.

A major problem is that the amounts transferred by regional and local authorities for MHI coverage of non-working residents are insufficient. The share of MHI in overall public health funding was less than 33 percent prior to 2002 and reached only 44 percent only in 2002 (see Figure 4). This contrasts with the two thirds of health care financing that is supposed to come through MHI. Health authorities and local bodies of power continue to finance both MHI funds and individual health care facilities directly. As a result, Russia has obtained an eclectic health care financing system that combines old-style (tax-based) and new insurance-based financing mechanisms.

Two-channel funding of health care providers and multiple financing schemes used to pay for services provided under the basic MHI program have become a problem. Services provided to MHI policy holders must – in theory – be paid for from MHI funds only, but continue to be financed from MHI funds and through the old source (general tax revenue-based budget). According to federal recommendations, general tax revenues and MHI funds must be used to finance different expense articles (categories). In reality, however, the same health care provider's expense category continue to be financed from both sources.

Figure 4. Health care financing from public sources in 2002 (billion rubles)



Source: Calculations based on data provided by Ministry of Health, Goskomstat/Russia, Federal MHI Fund.

The two different cannels of finance run under two different sets of rules. Under MHI, health care providers get reimbursed for services that they have actually provided to insurers. In contrast, money coming from the general tax revenue-based budgets to finance selected articles of health care providers' recurrent budgets (maintenance costs mainly) do not depend on the actual amount or quality of services provided. This combination of the old (through general tax budgets) and new (via MHI) financing mechanisms impairs the positive effect of the latter and does not encourage health care providers to seek more cost-effective ways to spend incoming funds or to rationally move available funds back and forth between budget lines. General tax-based finance does nothing to encourage health care providers to become more effective/efficient; to the contrary, it encourages old-fashioned loss-based approaches designed to keep money coming in.

Options to reform the existing MHI system are being discussed. The President and Government have clearly expressed their wish to maintain and develop the MHI system.

In August 2002, the Russian Federal Pension Fund came up with an initiative to become an actor in the MHI field. As a result, Government made a decision (March 2003) to allow the Federal Pension Fund to co-finance MHI for non-working residents (pensioners/retired employees) on a pilot basis. The fund was allowed to use 1.5 billion

rubles from its own budget for that purpose. The pilot project has been launched in 15 Russian regions.

Institutional traps

Russia's health care system has a number of flaws which can only be eliminated through reforming the existing health care financing system. These include:

- a long-standing mismatch between Government-guaranteed free-of-charge health benefits and available public financial resources;
- incomplete implementation of the MHI system and an eclectic combination of budget- and MHI-based health care financing approaches;
- insufficient coordination between and among health authorities and HC financiers;
- ineffective/inefficient use of available resources; and
- preservation of the loss-based approaches to health care provider management and operation.

Not much progress has been achieved in resolving these problems. Health care financing reform of the 1990s (introduction of the MHI approach) has created certain institutional traps for the system itself. The *de facto* refusal to reconsider government guarantees with respect to health benefits and to adjust them to the availability of public funds has triggered the proliferation of chargeable services and illegal payments for health care. Meanwhile, neither public nor private funds are spent effectively.

The lack of clear-cut rules governing MHI payments for non-working residents by local and regional budgets has resulted in a imbalance between the basic MHI programs, on the one hand, and the financial resources available to the MHI system, on the other. Currently, there is not enough money to pay for services that MHI policyholders are entitled to. This has resulted in many ineffective and eclectic regional health care financing models. The situation may improve, if the federal budget starts to co-finance MHI for non-working/non-employed residents, or if appropriate political decisions are taken to make the regions provide adequate amounts for that purpose. The former is associated with high economic costs to the federal level, and the latter with high political costs.

The conditions under which insurance companies were allowed to participate in the MHI business present another institutional trap. Existing regulations do not encourage competition among insurers and do not make them look for more effective/efficient ways to use the MHI money and resources available to the health care system. As a result, many insurers have become passive and, thus, unnecessary intermediaries between MHI funds and health care providers. Formal contracting rules applying to health care purchasers, insurers and health care providers are – to a significant extent – combined with informal agreements and arrangements that preclude effective use of available MHI funds. In this situation, the administrative costs associated with developing competition among insurers and turning them into effective participants of the MHI system become too high.

As a result, existing public health care financing system in Russia has found itself in a state of a stable but ineffective institutional equilibrium. All of the agents

capable of organizing concerted actions (health authorities, MHI Funds, health insurers, physicians' / doctors' professional associations) are more interested in preserving the *status quo* than in changing the existing arrangements and institutions. Health care has never been a priority for Russian authorities, and they have never exerted serious pressure on the key interest groups to make them want to change the order of things. This, in the final analysis, is why Russia has failed to make any profound progress in resolving its main health care system problems.

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The Public-Private Split in Health Care Systems

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Introduction

It is arguable how much blame for the catastrophic decline in health in the Russian Federation can be attributed on failures within the health care system, or the failure of the public health community and government to respond adequately. The answer is probably academic in any case, because of the size of the economic shock following the fall of communism, and inherent features in the Russian culture and lifestyles that, left unchecked and unregulated, produce high volumes of chronic lifestyle-related disease and low life expectancy. The problem has got worse simply because, following the transition, the system became overwhelmed, due to simultaneous increases in demand and a collapse in finances, leading to shortages of almost everything (Sheimann, 1991; Adeyi et al, 1997).

Since the fall of communism, Russia has turned away from the centrally planned and operated heath care model and edged its way towards a more market based system based on social insurance principles (Chernichovsky etal, 1996; Barr and Field, 1996). However, inequalities in access to health care continue to be rife at all levels, and in most areas of the country. A frequently remarked deficiency is the lack of clarity about what is meant by 'public health'. Public health plays a fundamental role in terms of promoting health, preventing disease and eradicating inequalities, but also in setting the context in which the health care system is planned and coordinated. As one Russian Ministry official recently said: "Russia has a Ministry of health care, *not* a Ministry of Health."

An effective public health system requires political close co-operation at all levels of government, including cross-ministerial working and co-ordination. Finland, which has certain similarities with Russia, has shown that it is possible to tackle some of these issues given the political will and determination. However, resolution of this question is not the principal subject of this paper, because it is health care and *not* public health that has been the most recent focus of health reforms. This in itself may be regarded as a signal of political priorities.

Turning our attention to health care, it is generally accepted that the primary aim of government is to create the financial and physical capacity to deliver free or affordable health care services, depending on need and other factors. In coming years, Russia will need to restructure and re-invest in its entire health care infrastructure. The problem is how to navigate a pathway from where it is now to where it needs to be in the future, efficiently and effectively. The difficulty is that there is no 'off-the-shelf' model that can be borrowed from outside and simply translated into Russia. Even if there were there would immense difficulties in dismantling the existing system and creating a new one.

This note considers the key lessons from modern health care systems with examples drawn from comparable countries and economies. It draws heavily on research undertaken by IIASA's Social Security Reform (SSR) Project in countries such as the US, China, Japan and the UK – each of which provide distinctive organizational models of health care. It considers the relevance of elements in each system to the Russian case through the incentives that are created, relating to infrastructural questions and administrative processes.

The analysis is partial, concentrating on key features rather than the subtle differences between individual systems, which are many and detailed. In the second part of the paper we provide a brief analysis of the extent to which each type of system provides 'value for money' based on a simple economic model relating financial inputs to health outputs. This in itself is a value-loaded question since it depends on which particular feature of a health care system one wishes to emphasize. Since the key concern of the Russian Federation is the collapse in healthy life expectancy (HLE), it seems natural to use that as our outcome measure.

The paper begins with a simple classification of health care systems in their *pure form,* whilst recognizing that most country systems are hybrids of several types to a greater of lesser degree. It compares how features compare with one another and the logic of why some elements go together, and certain strengths and weaknesses that are mediated through the underlying philosophy of the system in each case. The second part of the paper turns to a comparison of outputs based on the model, in which HLE is compared with the level and composition of health care finance – whether public or private.

Categorizing health care systems

All health systems share certain features. One is that physicians are generally powerful players in influencing and shaping health care services. Another common feature, regardless of system, is the dependence of all health care systems on the global market for pharmaceuticals and much medical equipment. The hugely expensive research commitment and time spans needed to bring new pharmaceutical products to market inevitably mean that the industry is concentrated among a small number of large international corporations. This requires that all health care systems, whether in Russia, the UK or China, require some means of controlling their drug expenditures, and the costs born by the individual and the system.

Another shared feature is that all health care systems increasingly struggle with the issue of looking after the elderly – who are the major consumers of health care today, especially in more developed countries. It is of some interest that nearly all health care systems seem to be drawing back from providing open-ended free personal and nursing care. Rather they are seeking in different ways to strike a balance of responsibilities and, therefore cost, between the individual, and the state.

The solutions range from making individuals entirely responsible for their own long-term care, with support provided only to those with limited resources, to the introduction of another tier of insurance as in Japan and Germany. However, for Russia the long-term care market is self-limiting to a degree because of the much lower life expectancy although it is something that can be expected to develop with time.

Putting these common features to one side, one way to refine this classification of health care systems is on the basis of whether they are publicly or privately financed and publicly or privately operated. The four-way classification that this produces provides a convenient and insightful way of distinguishing between the systems and how they operate. It is also a way to concentrate debates about which type of system is in some sense 'best'.

Within each type there are several key features, which characterise each system. These are based on the levels of market exposure, the strategic management of priorities and level of responsibility ranging from the individual to the state, financial freedoms with regard to investment, and finally the degree of accountability and autonomy (WHO, 2000). These issues run through all the models discussed either explicitly or implicitly.

Table 1 provides a more detailed exemplification of the four-way classification we wish to develop along with the key distinguishing features. The principal sources of finance, either public or private, are shown in the rows of the matrix, and the responsibility for service delivery, either public or private, is shown in the columns. Each variant is now considered in turn starting with the 'public-public' model.

Public-public: An example of this type of system is the classic hierarchical centrally planned tax funded systems that typify former communist countries like Russia, and 'National Health Systems' in countries such as the UK. It its pure form, this model has several well-known strengths but also a number of key weaknesses. The strengths are that access is related to health needs and not on the ability to pay so that inequalities based on age, gender or income are not a material factor in who gets treatment. Such systems have relatively small administrative costs, provide good value up to a point, and can be planned and regulated on rational lines.

The weaknesses of such systems is the implicit rationing, based on waiting lists and queues, and the sometimes poor quality of services because of historically low levels of investment and poor maintenance. Patients may be denied direct access to specialists of their choice, and have to pay privately to circumvent these restrictions. However, there are several variants to this basic model, which are being implemented in countries such as the UK that could give such systems a new lease of life.

Typically such variants are based on the principle of separating service providers from service commissioners (public 'purchasers') in which the commissioners contract with providers to provide services in defined volumes, at agreed levels of quality and service. Services may be restricted to a degree to only those that are approved or where there is a clear justification for their supply – although some would argue that this is an advantage. The commissioners are therefore effectively public agents representing the 'an internal market', in which prices are mutually agreed between commissioner and provider.

A drawback with this approach is that competition between providers is still restricted through lack of patient choice. In the event of a financial crisis the public purse is still liable to take ultimate responsibility so it is a functioning market only up to a point. New variants are now being developed which will give providers more flexibility and local accountability to be allowed to compete on a level playing field with private sector competitors. For Russia, the relinquishing of the wholly centralized system probably precludes a return to a more sophisticated version of the public-public

model, although a return cannot be ruled out if the experiment with the social insurance model fails.

Table 1: Four-way classification of health care systems and typical characteristics

		Service provider	
		Public	*Private*
Financial provision	*public*	Hierarchical organization: - government regulated - financed through tax revenues - bureaucratic hierarchy - assets publicly owned - state employed physicians - free at point of use - subsidized prescription payments - no safety net required	Hybrid public hierarchy / private sector: - government regulated - mandatory employer based social insurance - publicly regulated collection systems - main assets publicly owned - significant private sector - physicians privately employed or independent contractors - co-payments for treatment and medication - mandatory long term care insurance - public safety net
	private	Hierarchical organization: - government regulated - financed through private insurance and fees for service - publicly owned assets - separate payment for medication - optional publicly provided long term care arrangements - public safety net	Privately owned and operated: - government regulated - corporate planning systems - financed through private insurance and fees for service - assets privately owned - physicians privately employed or independent contractors - separate payment for medication - no safety net

Public-private: Typifying this kind of model are the social insurance based systems of Germany, Japan and certain other countries and is a model that Russia is currently implementing. In this example, the health care system is mostly owned and regulated within the public sector, although medical personnel are not necessarily public sector employees and have more freedoms to supplement their income through private practice

than under the previous model. Social insurance is generally mandatory and publicly regulated, although the collection systems can be privately administered through privately owned insurance companies, which offer private insurance 'top-ups'. A feature of this system is the co-payments that are levied on medical interventions and which are billed to the patient.

The strengths of this system are the clearer relationships between provision and cost, so that patients are encouraged to moderate their demands and 'shop around'. A further advantage is that it has the capacity to diversify its sources of funding and therefore income through the provision of private insurance. Patients tend to have more choice in terms of physician and place of treatment, which arguably leads to an internal market of sorts and possibly a diminution of physician and bureaucratic 'power'. Finally the public provider can intervene and plan so retaining a degree of control over future plans and investment.

The main weakness of this model is the restricted coverage of the system. Social insurance is usually levied on employees and their families, which means that special arrangements are needed for people who are outside the system because they are unemployed or otherwise incapacitated. The administrative costs are also higher because collection and accounting systems need to be more sophisticated and responsive.

In 1993, Russia passed the health insurance law, which opened the way for the establishment of an insurance-based health care system to relieve the chronic shortage of funding by injecting new sources of finance. This has proved to be a massive task because of the difficulty of setting up complex and robust administrative systems for financial management and other purposes, often working against entrenched interests (Titchenko, 1995; Twigg, 1999) . The resources available to the system are less than ideal and further reforms will undoubtedly be necessary. It is not possible to pass judgement on Russia's decision to follow this path since it is probable that the alternatives would not have fared any better in the wake of the power struggles and chaos of the early years of post Soviet rule.

Private/private: The most well known exponent of this system is the US. In this system providers can be either in the private or public sector. Medical facilities can be part of a larger corporation or publicly owned by the municipality or a charitable trust. In either case patients must pay for care unless their income drops below a specified level in which case they receive public support. The key difference with the social insurance model is that medical insurance is not a mandatory part of employment, whilst the benefits of medical insurance are more heavily circumscribed in terms of procedures and time-limited in terms of benefits. The US system is certainly expensive, accounting for over twice the proportion of GDP compared with the international average. Paradoxically, it is also the model adopted by developing countries, where public finance is limited and overall funding is well below where it should be (Cichon and Gillion, 1993).

The strengths of the US system are that it generates a lot of resources that can be deployed in medical research which results in the US being pre-eminent in many fields of medical research and the quality of care for those who can afford it can be very high. There are, on the other hand, considerable weaknesses. Because health insurance is not mandatory the system is vulnerable to adverse selection tendencies, which raise the cost

of insurance. There are significant inequalities in coverage between those who receive employer benefits or pay directly and those who can't afford to pay or for whom the insurance has run out. The administrative systems to support private health care are considerable and substantially add to costs, whilst the insurance system encourages patients to over consume and physicians to over-provide.

The US recognizes these problems and has evolved various means of overcoming them without actually dismantling the fundamentally private nature of the system. For low-earners, there is the "Medicaid" system, and for older people there is "Medicare," which provides certain free health care benefits to older people. To keep costs down, the US has also pioneered the concept of Health Maintenance Organisations in which provision and insurance are combined to lesson incentives to over-consume or over-provide. For some years, it has also used a system of standard costs for different interventions to reduce the temptation to charge exorbitant rates for specific interventions.

Private-public This method organization is probably the most unusual of the four types and there are relatively few examples on which to base judgments or compare experiences. The best example is China, which has pursued a development path in which limited private sector reforms have been encouraged within an overall framework of state control. The origins of these reforms lie in the dismantling of the old state enterprises and with them employer-based health care and pension systems. Unlike Russia, the transition in China has been more controlled and thorough, with alternative arrangements being introduced selectively and at a measured pace.

In addition, China persists with the distinction between the rural and urban health systems, which are significantly different. In allowing the rural public health system to disintegrate, the Chinese government has effectively reneged on its commitment to provide state medical care to rural Chinese. In Russia, while there is certainly less than meets the eye to the state guarantee of universal access to free medical care, no such drastic backtracking on policy commitments has taken place.

As far as Chinese urban health care reforms are concerned, the hospitals and assets are still controlled by the state whilst physicians and other medical personnel remain public employees. The patient, by contrast, has essentially two options: enrol in one of public or private health insurance systems that are springing up or pay out of pocket. The collection systems are still relatively crude, with insurance contributions made through personal visits to local offices, whilst public hospitals handle quite substantial amounts of cash that are handed over by the patient after a visit is completed.

These are transitional issues and the main limitation of the current system is that the insurance benefits are capped in any one year, and individuals exceeding their limits must pay the additional costs. Because the urban population is relatively young and healthy, the cash inflows from insurance contributions exceed pay-outs and so the system remains solvent at the moment. This will not always be the case however.

Health care financing and outputs

Modern medical practice is reasonably standardized and one would expect treatments provided publicly or privately to have about the same health impact. The means of finance, however, may be expected to significantly affect what treatments are

provided and who receives them. In this section, we ask whether health outcomes vary systematically, not only with the overall level of funding, but with the public-private mix of health care expenditure.

One way to analyze the performance of different health care systems is to compare the average healthy life expectancy in each country with per capita expenditure. Healthy life expectancy may be defined as the average years of life lived in a healthy state. It is less than average life expectancy at birth, usually by a factor of 9-10 years depending on the country and its level of development (Mayhew, 2003). If we were to plot a graph based on HLE against the per capita level of health expenditure, we would obtain the curve shown in Figure 1, which is based on data published by the World Health Organisation for the year 2000 for 191 countries. It shows that HLE grows rapidly up to income levels of say $1000 per head, after which HLE gains taper off.

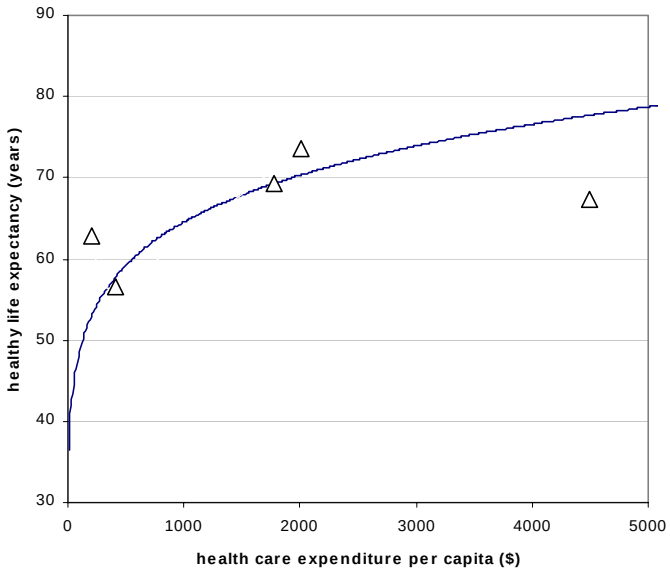

Figure 1: Healthy life expectancy (HLE) as a function of health care spending per capita: fitted curve based 192 countries (log HLE = 3.313+0.124x, where x is spending per capita: R^2 = 0.64). Individual countries highlighted from left to right are China, Russia, UK, Japan and US.

Highlighted in the graph are the actual positions of the five countries, which have been discussed in the previous sections, each which different health care systems. They are, from left to right on the graph, China, Russia, UK, Japan, and US. Countries that are above the line are attaining a higher level of HLE for their relative spending on health care than countries below the line. The differences between the countries are clearly expenditure-related, but are they also related to their methods of financing? If there is a relationship between the public-private mix what can one conclude about the relative merits of one system versus another?

We therefore re-ran the above model separating out public and private spending using a simple production type function in which the independent variables are private and public spending per capita. The equation fitted was

$$\ln(\text{healthy life expectancy}) = \alpha + \beta \ln(\text{public health expenditure per capita}) + \gamma \ln(\text{private health expenditure per capita})$$

This yielded coefficients for public spending of 0.0822 and 0.0376 for private spending ($R^2 = 0.64, \alpha = 3.42$). Thus, as our first inference we note that improvements to HLE from public spending on health care on average occur at over twice the rate compared with private spending.

In Figure 2, we present a way of interpreting residuals, i.e. the errors between expected HLE calculated using the fitted equation and observed HLE. On the horizontal axis is public expenditure and on the vertical axis private expenditure. A family of curves, of which we illustrate three, shows combinations of public and private expenditure, which will result in various levels of HLE. Curves lying to the right and higher above the origin represent higher levels of HLE. Note that these curves may be drawn on the basis of our parameter estimates by varying HLE and calculating the combinations of public and private spending that are consistent with it.

A "budget line" such as PQ represents combinations of public and private spending that sum to the same total, in this case $400. Assuming that there is only $400 to be spent, the highest HLE may be obtained by dividing it between public and private at the point of tangency A, corresponding to $275 in public spending and $125 in private spending (a ratio of 2.2 to 1; all points corresponding to this ratio are illustrated as a ray from the origin). We refer to this split as corresponding to "optimal allocative efficiency" because it results in the highest possible HLE given the overall $400 constraint. In the example given, actual observed HLE is 57.5 years (point C) and, with improved allocation, this could be raised to 58 years (point A). Actual HLE, in this example, is assumed to be 60 years.

It turns out that the gap between expected HLE and actual HLE can be much greater than the gap between expected HLE and allocatively efficient HLE. We describe a country below its expected HLE, given its level of health spending, as having a 'life style or public health deficit'. Countries that fall most frequently in this category are often developing countries especially those afflicted by AIDS, where the existing health care system have proved to be more or less powerless against this epidemic. Actual HLE in our example is well above the expected level. This suggests that this country has attained what might be described as a 'life style or public health dividend' because its HLE is above where it should be based on the average of all countries in the model.

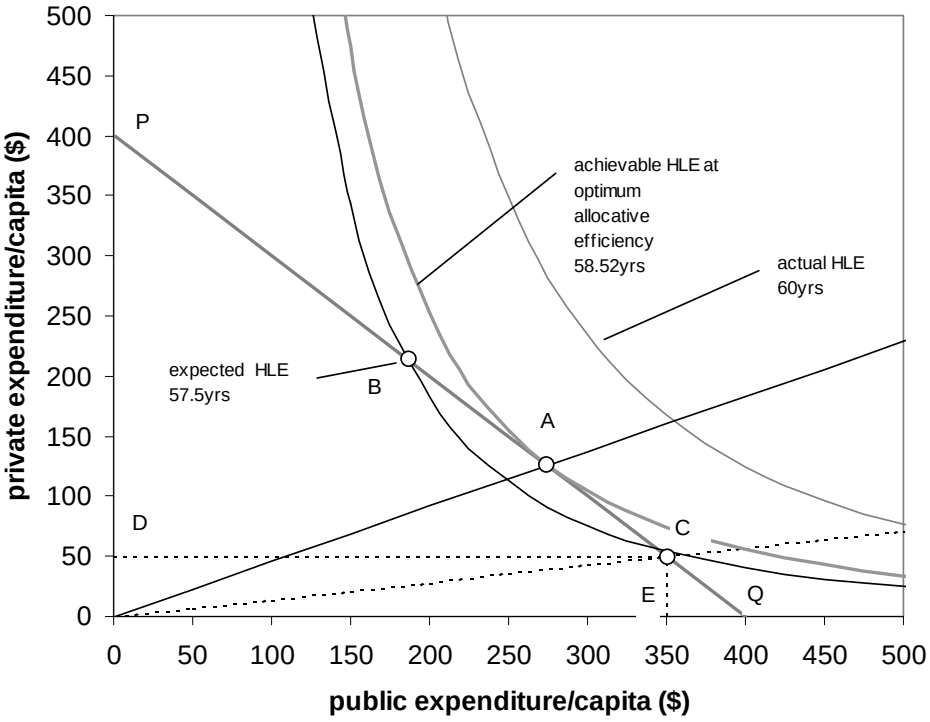

Figure 2: Healthy life expectancy as a function of public and private expenditure for a hypothetical country and its relationship to healthy life expectancy.

Table 2: Comparison of health life expectancy with public and private health care expenditure in countries with differently structures health care systems.

	Actual HLE (years)	*Expected HLE (years)*	*HLE based on optimal allocative efficiency (years)*	*Actual public spend/capita ($)*	*Actual private spend/capita ($)*	*Ratio of public to private spend*
China	62.8	52.37	53.70	75.0	130.0	0.58
Japan	73.5	70.45	70.59	1540.9	468.1	3.29
Russia	56.6	58.24	58.27	293.6	111.4	2.64
UK	69.2	69.18	69.55	1436.9	337.1	4.26
US	67.4	76.64	77.75	1993.1	2505.9	0.80

Table 2 shows results for the countries discussed in previous paragraphs, which were taken to be representative of the health care systems operating different financial arrangements. Expected HLE (Column 2) is as predicted by the equation just given. "HLE based on optimal allocative efficiency" (Column 3) is the highest HLE that could be obtained by re-allocating expenditure between public and private, keeping the total the same and according to the family of curves that we have estimated. The following are some key points arising:

- China spends least on health care based on these data. Actual HLE is 62.8 years compared with 52.37 expected HLE. At 10.43 years China has the largest healthy

life style dividend among this group (although this author has some concerns about the quality of Chinese data). A more allocatively efficient system of financing would only achieve 53.70 years of HLE by comparison.

- Japan is the second biggest spender on health care in this group and has the highest HLE. Actual HLE is 3.05 years higher than expected HLE based on its level of spending, so there is also a positive HLE life style dividend in the Japanese case. A more allocatively efficient spending mix, however, would only add 0.14 years to expected HLE.
- The level of spending in Russia is below all the other countries except China. Actual HLE is the lowest among this whole group of countries, and lower than the expected HLE by a margin of 1.64 years, suggesting a lifestyle deficit using previous terminology. A more allocatively efficient system of financing would only contribute 0.03 years to the expected HLE.
- Actual HLE in the UK is 69.2 years compared with a similar expected value based on international comparisons. Its allocatively efficient level of HLE is 0.37 years above the expected level, so that the UK could perform slightly better with a more privately weighted public-private mix.
- The US spends far more than any other country on health care, but its actual HLE is only 67.4 years compared with an expected HLE of 76.64 years based on its level of expenditure. This represents a lifestyle deficit of 9.24 years. US spending on health care is proportionately more skewed towards private expenditure than the other countries with the exception of China. If the US were allocatively more efficient HLE would rise by 1.11 years.

Conclusion

In this note, we presented a 2x2 matrix scheme for characterizing health care systems by whether provision and financing of health care was public or private. This scheme allowed us to describe approaches to health care in countries as diverse as the US, UK, Japan, China, and Russia.

A great deal of attention has been devoted to finding the optimal public-private mix in health care finance. We found that, after controlling for the level of overall funding, deviations from expected healthy life expectancy were due not to misallocation of spending, but to what we lumped together as "life style and public health" variables. In the Russian context, this suggests that health care reformers, while not ignoring questions of finance (or for that matter, provision) should urgently tackle contextual problems such as unhealthy life style.

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Alcohol

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Recently, it was shown that in the past few decades Russia's alcoholic death toll was 500,000 to 750,000 per annum (Nemtsov 2001). The purpose of the following inquiry is to determine how these losses are spread across the country's territory.

At present (2002), Russia has 89 administrative entities, divided into seven federal *okrugs*. Owing to incomplete data, we were unable to look at how matters stand in three units – the Altai Republic, Ingushetiya, and Chechnya. All autonomous regions were also excluded, being parts of oblasts. Hence, we surveyed 77 regions.

Alcohol mortality was studied region by region from 1990 on, because the State Statistics Committee of the Russian Federation deems it necessary (or possible) to preserve regional mortality data for only the ten years preceding the current decade. As a result, highly important 1980-89 data are unavailable. Average indicators for Russia, however, are available for this decade.

The mortality data, both all-Russia and regional, were obtained from the State Statistics Committee of the Russian Federation, and data on alcohol psychoses incidence from the Narcological Centre of the RF Health Ministry. These data are characterized by a number of weaknesses and gaps.

To begin with, not all types of alcoholic pathology figure in the official causes of death classification. As a result, many types of alcoholic mortality are lost in larger mortality classes and therefore out of reach of analysis.

The second trait of Russian official statistics is that alcoholic mortality is often disguised by non-alcohol related diagnoses. This was re-affirmed at the beginning of the Gorbachev anti-alcohol campaign, when indicators of nearly all types of mortality, including cardiovascular, declined in step with the decline of alcohol consumption (see Figures 1-4)). All of these mortality classes include indirect alcohol-related deaths (alcoholic pathology being an aggravating factor) or direct alcohol-related deaths which have been falsified (e.g., alcohol poisoning).

Regional statistics on deaths from alcohol poisoning, usually employed as the main indicator of the severity of alcohol problems, are especially inaccurate: among alcohol-related mortality this had the greatest variability from region to region (see Figure 5), and the regional indicators were asymmetrically distributed owing to the large number of regions with very low numbers of occurrence.

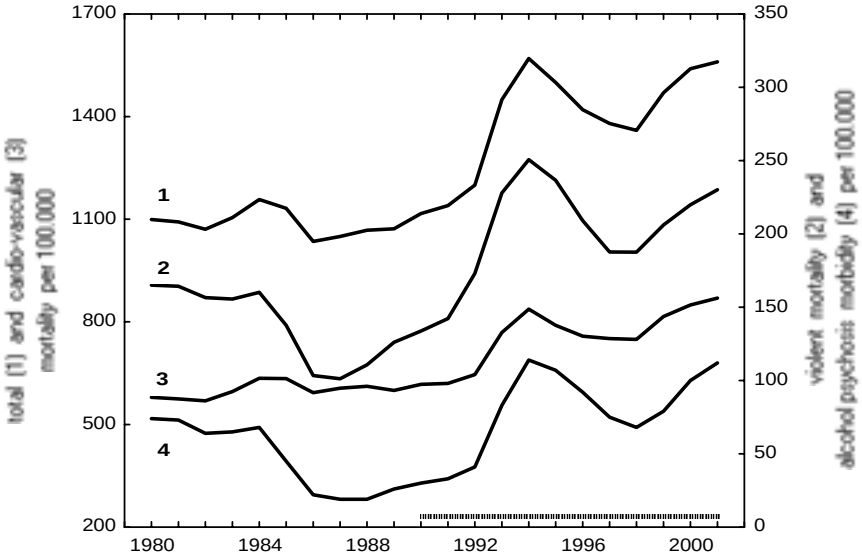

Figure 1. Total (1), violent (2), and cardiovascular (3) mortality and alcohol psychosis morbidity (4) per 100.000 population. The dashed line marks the period for which regional data are available.

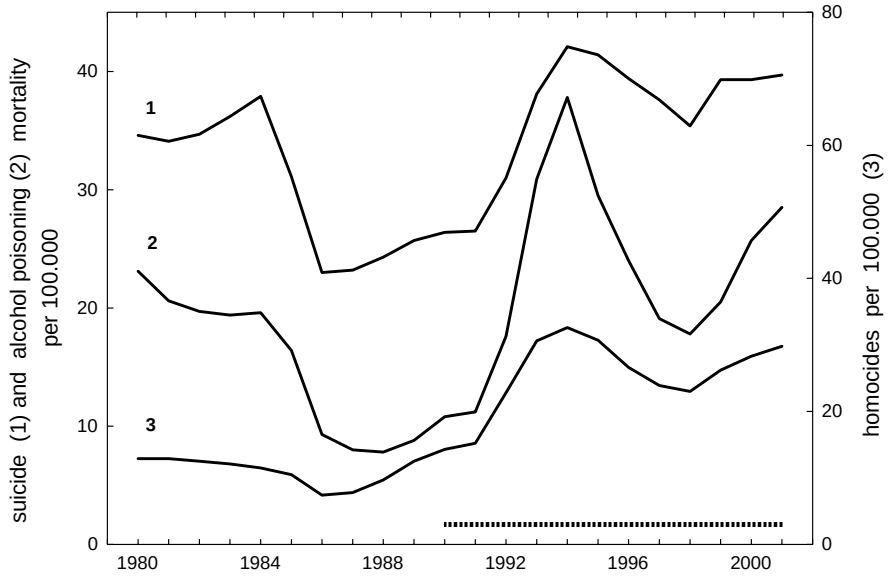

Figure 2. Mortality rates per 100,000 population from suicide (1), alcohol poisoning (2), and homicide (3). The dashed line marks the period for which regional data are available.

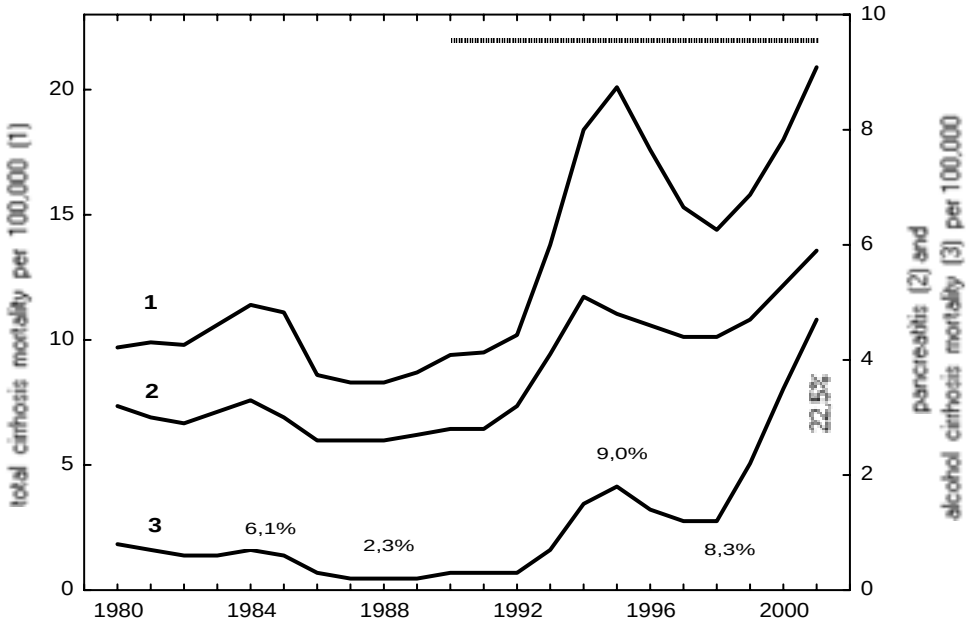

Figure 3. Mortality rates per 100,000 population from total cirrhosis (1), pancreatitis (2), and alcohol cirrhosis (3). The dashed line marks the period for which regional data are available.

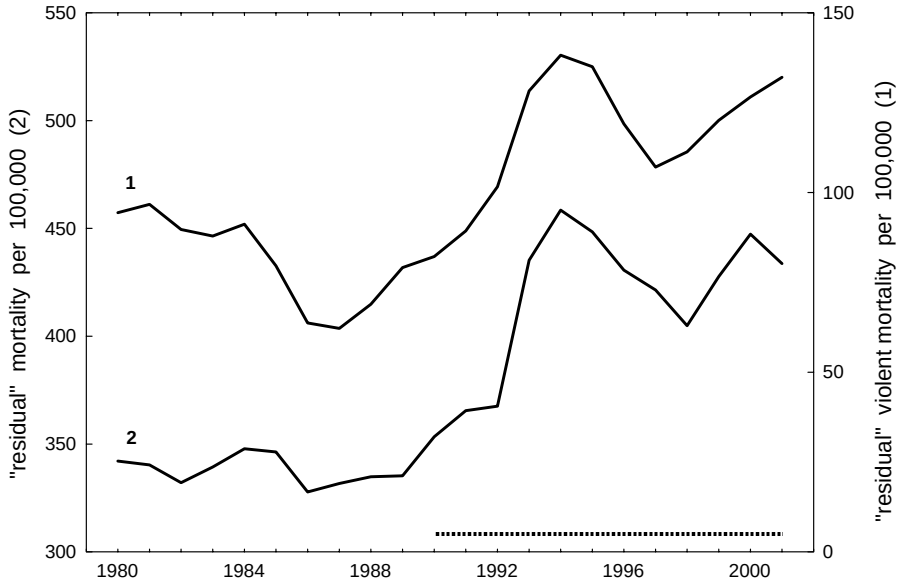

Figure 4. Changes of the alcohol depended variables: "residual" violent mortality (1; without suicides, homicides and alcohol poisonings) and "residual" total mortality (2; without all named in figures 1,2,3,4) per 100.000. The dashed line marks the period of regional research mortality.

There is another specific feature of the alcohol poisoning statistics: in more than half the regions they do not tally with alcohol psychosis incidence either in levels or trends over time. In a large number of regions the relation of psychoses to poisonings increased as poisoning mortality decreased (see Figure 6). This is contrary to the nature of the two phenomena: all psychosis patients and the majority of those who died of alcohol poisoning are alcoholics. In other words, both groups are mostly recruited from one and the sub-population, which presupposes a relative stability of the proportion and correlation of these types of afflictions and mortality. Such a correlation was recorded in 44 out of 77 oblasts. In the remaining 33 oblasts there was no correlation, while the relation of psychosis to poisonings fluctuated from 0.02 (Republic of Adygey, 1993) to 64,6 (Jewish Autonomous Okrug; 1996).

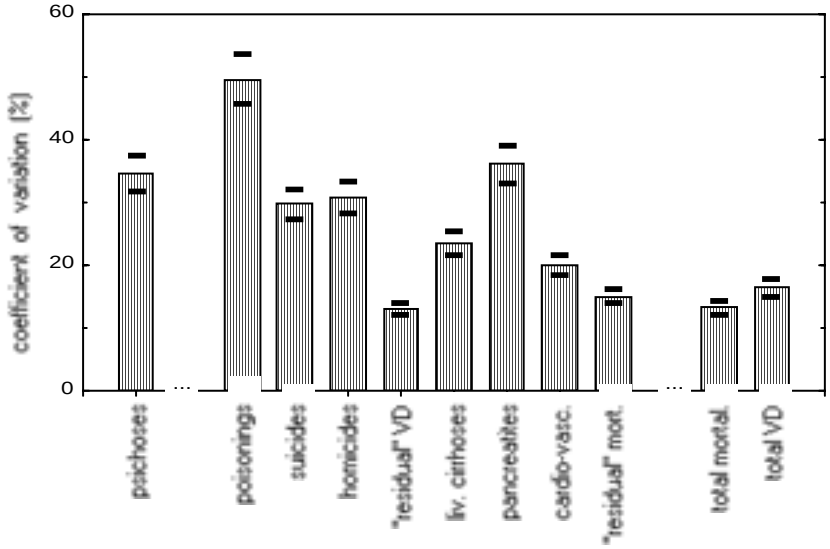

Figure5. Variability of alcohol-dependent variables. On the y-axis is the coefficient of variation (standard deviation/mean*100) expressed in percent. The columns represent average variations of regional parameters, the strokes give confidential intervals.

The relation of psychoses and poisonings were subjected to a special analysis (not reported here) that enabled us to estimate that the real ratio of psychoses to poisonings is 1.89:1.0 and the range of variation if from 1.29 to 2.47. Using this ratio to correct under-reporting of alcohol poisonings (i.e., multiplying reported alcohol psychoses by 1.89 to estimate the actual rate of alcohol poisoning mortality), we estimated that the actual number of lethal alcohol poisonings in the country is 65 percent higher than the number reported in official statistics (55,473 in 1994 and 41,091 in 2001). A more realistic estimate of deaths from alcohol poisoning in these two years would be 91,500 and 67,600 deaths or 62.4 and 47.0 per 100,000 population, respectively. It is arguable that this estimate, too, is somewhat underestimated due to under-registration of psychoses. As evidence of this, in a number of neighboring regions, a two-fold incidence difference was recorded. It is beyond question, however, that alcoholic psychoses are on the whole recorded considerably better than alcoholic poisoning mortality.

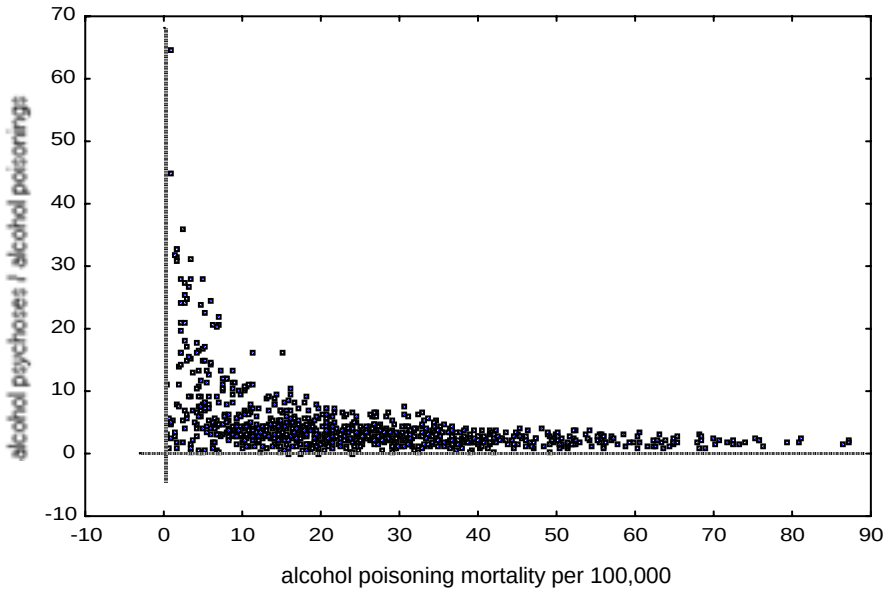

Figure 6. Correlation of alcohol poisoning mortality (x-axis) with the relation of alcohol psychoses to alcohol poisonings (y-axis).

The main source of error when registering alcohol-related deaths derives from the very first levels, namely the Bureau of Forensic Medicine, where diagnoses are distorted to avoid the undesirable moral, ethical, and social consequences that the truth may entail for relatives of the deceased.

Our correction of the number of alcohol poisoning deaths was but the first step in estimating total alcohol-related mortality in the Russia regions. The contribution of alcohol to causes of death less directly related to the act of consuming alcohol needed to be estimated. Owing to the absence of regional indicators of real alcohol consumption, this had to be done on the basis of the correlation of mean indicators of mortality and alcohol consumption for Russia as a whole. Based on linear regression, we estimated that the following percentages of deaths by cause were attributable to alcohol: alcohol poisoning (100 percent), homicides (72.2 percent), liver cirrhosis (67.6 percent), pancreatitis (60.1 percent), suicides (42.1 percent), cardiovascular pathology (23.2 percent), and all other causes (25.0 percent). This means, for example, that in Russia 23.2 percent of cardiovascular deaths are related to alcohol abuse: either the cardiovascular pathology resulted from massive drinking or there was a deliberate or accidental substitution of a cardiovascular diagnosis for an alcoholic diagnosis.

After determining the share of deaths related to alcohol consumption, the indicators of each of the six remaining classes of mortality averaged over 12 years were multiplied by the respective share coefficients. Considering the fact that causes of deaths with a relatively low level of alcohol involvement (cardiovascular and all other causes) account for 84.3 percent of all deaths, while deaths more closely related to alcohol consumption (alcohol poisoning, deaths from cirrhosis and pancreatitis) comprise only 15.7 percent, alcohol-related mortality in these two groups was calculated separately. This is also necessary because cardiovascular "other" deaths

depend on the age of the population, which is more elderly in the west of the country and younger in the east.

Our results indicate that across the regions of Russia, 30 to 46 percent of deaths are due either directly or indirectly to alcohol abuse, with a mean of 33.8 percent. The method unfortunately does not allow us to separate the direct and indirect contributions of alcohol. The basic conclusion is not, however, affected: many years of life are lost owing to alcoholic abuse.

To put this in perspective, in the U.S. 5.0 percent of all deaths in the country in 1989 were attributable to alcohol abuse (Stinson et al. 1993) and 4.4 percent in 1995 (McGinnis and Foege 1999). These figures can be compared (see Figure 7) with those estimated for Western Europe by Ramstedt (2002).

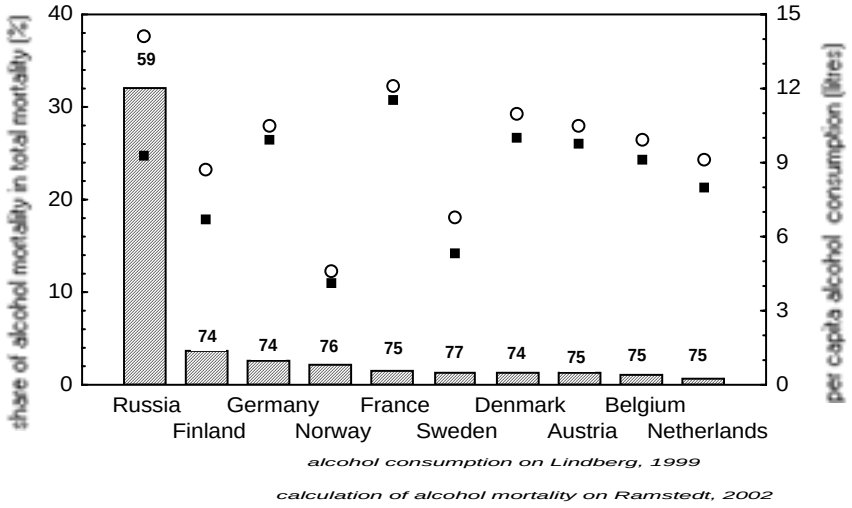

Figure 7. Alcohol mortality in European countries in 1995 (share of alcohol mortality in total mortality above age 15 (percent) The solid squares are registered alcohol consumption, the lozenges are estimates of actual consumption. The numbers are male life expectancy at birth

The most ominous situation as concerns alcoholic mortality is in the Russian Far Eastern Federal District, and within that okrug in the Chukot Autonomous Okrug where 46% of deaths are related to alcohol abuse. Approximately the same high level of alcohol-related mortality was recorded in five of eleven oblasts of the Siberian Federal District. Alcohol-related losses equaling those of the Far Eastern District were registered in just four oblasts of other federal okrugs: the Tyumen oblast in the Urals, Udmurtiya on the Povolzhskii District, and Murmansk oblast and Komi Republic in the North-West District. To single out any of the remaining oblasts is unnecessary, because the differences in alcohol-related mortality in them fluctuates little -- from 36.7% (Kalmyk Republic) to 30.3% (Voronezh oblast).

Nemtsov (2000) has presented estimates that prior to the beginning (1985) of the anti-alcohol campaign, regional consumption of alcohol ranged from 11 to 18 liters per capita per annum and at the end of the campaign, the range was 10 to 15 liters. This

proportional stability suggests that the only way to improve the situation in the worst regions is to effect a major reduction in alcohol consumption across the entire country.

Other calculations made during this inquiry show:

- a change in alcohol consumption by one liter per capita per annum changes total mortality by 3.9 percent,
- a change in alcohol consumption by 1% changes total mortality by 0.5 percent, i.e., the elasticity is 0.5.

Based on these estimates, even a modest, 5 to 10 percent decline in alcohol consumption will reduce deaths by 100,000-200,000 each year. A decrease of alcohol consumption in Russia would go far towards addressing the demographic crisis of a shrinking population.

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Smoking

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Introduction

In 1990, based on lung cancer mortality, it was estimated (Peto et al. 1994) that a 35 year old man in the former Soviet Union (FSU), would have twice the risk (20%) of dying from tobacco-related causes before the age of 70 as a man in the European Union (EU; 10%). In women the risks are much lower at 2% versus 1% but the ratio is the same ratio still applies. 56% of male cancer deaths and 40% of all deaths in region are attributed to tobacco compared with 47% and 35% respectively in the EU (ibid.). Moreover tobacco related mortality continues to increase in the FSU while stabilising or declining in the EU as a whole. It is perhaps no great surprise therefore that tobacco is thought to explain up to 50% of the east-west gap in life expectancy (WHO Regional Office for Europe 2003), which in 2000 (the latest year for which data are available) stood at 13.7 years in men, and to explain much of the gender gap in life expectancy which stands at 11.1 years in the former Soviet Union (FSU) compared with 6.2 years in western Europe (Bobak. 2003).

Despite these deplorably high levels of tobacco-related mortality, relatively little is known about smoking prevalence in the region and data are sparse (Forey et al. 2002). Virtually no recent or reliable data exist for the countries of central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan). Although recent surveys have been conducted in Georgia they are limited to the capital Tbilisi, data from elsewhere in the Caucasus (Armenia, Azerbaijan) are scarce and historical figures are inconsistent with later findings, leading authors to rely on anecdotal reports of smoking rates.

Historical and more recent data, which come largely from Russia (McKee et al. 1998), Ukraine (Gilmore et al. 2001a), Belarus (Gilmore et al. 2001b) and the Baltic States (Pudule et al. 1999) show, as might be expected given the mortality figures described above, that smoking rates in men are high at between 45% and 60%; rates are far lower in women and range from 1% and 20%.

These issues underlie the need in the FSU for comparable and accurate data on smoking prevalence, which have been widely recognised as pre-requisites for the development of effective public health policies and programmes. The need for accurate and timely data is made more urgent in the FSU by the profound changes experienced in the region's recent transition from a socialist to a market economy and more specifically by the transformation of its tobacco industry (Connoly 1996). Changes to the tobacco industry were first felt as soon as these formerly closed markets opened, with the rapid influx of cigarette imports and advertising, which was previously unknown in the region. Later, as part of the rapid and large scale privatisation of state assets, most of the newly independent states privatised their tobacco industries and the trans-national tobacco companies (TTCs) established a local manufacturing presence. We estimate

that between 1991 and the end of 2000, the TTCs invested over US$2.7 billion in 10 countries of the FSU and tripled cigarette production capacity in their newly acquired factories (Chaloupka and Laixuthai 1996). Evidence from the industry's previous entry to Asia shows that these changes are likely to have a significant upward impact on cigarette consumption (Bettcher et al. 2001).

Current smoking prevalence

In response to these and other major health and social issues faced in the region, a major study on living conditions, lifestyle and health (LLH) was commissioned as part of the European Union's Copernicus programme (Institute for Advanced Studies 2003).[10] This involved surveys in eight of the fifteen newly independent states - Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia and Ukraine. Here we present the data on smoking prevalence. We aim to assess age and gender specific prevalence for each of the eight countries surveyed. Given the negative health impact of starting early we examine the age of first smoking. The number of cigarettes smoked per day and time to first cigarette are measured as indicators of dependence and used to assess the proportion of smokers with moderate to severe nicotine dependency, an indication of their ability to quit.

In total, 18,428 individuals were surveyed. Response rates varied between 71% and 88% among countries (calculated on the basis of the total number of households for which an eligible person could be identified). Item non-response rates were generally very low, for example 0.03% for current smoking, 0.05% for frequency of alcohol consumption, 0.5% for education level and 0.1% for self-perceived health.

Rates of male smoking are high. In many of the countries surveyed almost 80% of men have ever smoked, the average for the eight countries surveyed reaching 68.9% (see Figure 1**)**. The prevalence of current smoking is lowest in Moldova (43.3%) and Kyrgyzstan (51.0%) and highest in Kazakhstan (65.3%), Armenia (61.8%) and Russia (60.4%). Current smoking rates in Russia could not be distinguished from those in Kazakhstan, Armenia or Belarus but were significantly higher than in Moldova, Kyrgyzstan, Ukraine and Georgia ($p<0.01$, data not shown).

Rates in women are far lower (p-value for gender comparisons <0.001 in all countries) and somewhat more variable, ranging from 2.4% to 15.5% with the lowest rates seen in Armenia, Moldova and Kyrgyzstan and the highest in Russia, Belarus and Ukraine. Logistic regression analysis showed that current smoking among women in Russia was significantly more prevalent than in all other countries ($p<0.01$) although adjusting for age removed the difference between Russia and Belarus (data not shown).

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[10] The LLH Project is funded by the European Community under the FP5 horizontal programme "Confirming the International Role of Community Research" (INCO2-Copernicus; Contract No: ICA2-2000-10031, Project No: ICA2-1999-10074). However, the European Community cannot accept any responsibility for any information provided or views expressed.

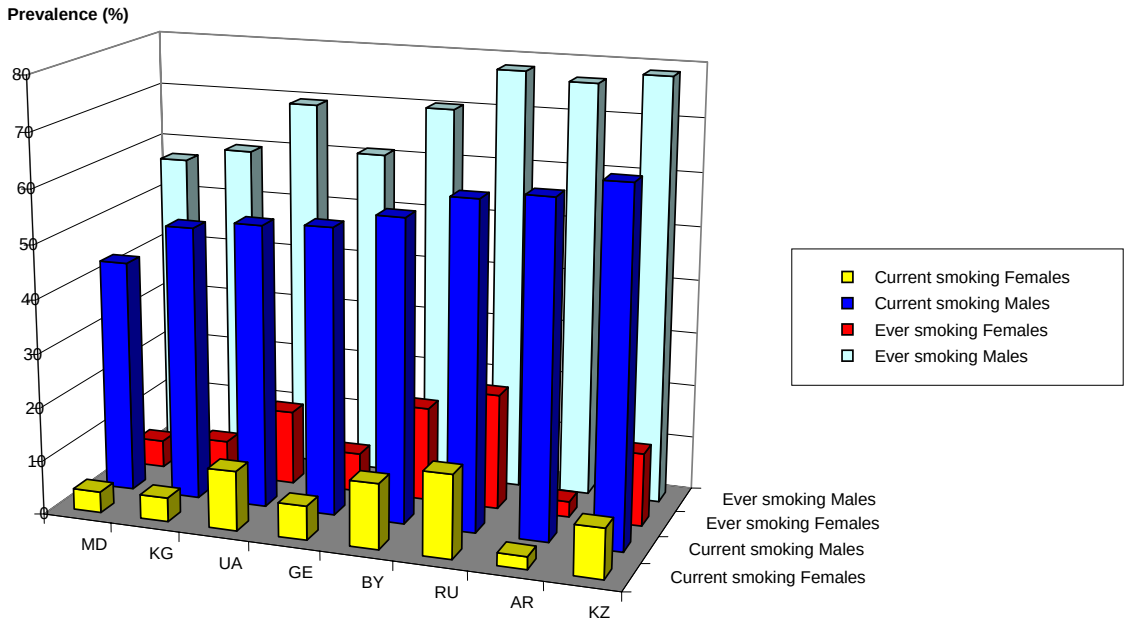

Figure 1. Levels of current and ever smoking by gender

The relationship between smoking and age varies by gender. In men, with the exception of Moldova, current smoking prevalence varies little between the ages of 18 and 59 but then declines more markedly in the over 60s (see Figure 2a). The decline in current smoking with increasing age is accounted for by an increase in the proportion of ex- and never-smokers, which could be due to differential survival. In women, the overall trend is for both current and ex- smoking to decrease with increasing age with very low smoking rates observed in the oldest age group (ever smoking rates vary between 0.8% to 3.9%). However, closer inspection suggests that the countries can be divided into two groups. In the first (Russia, Belarus, Ukraine, Kazakhstan), rates of current and ever smoking imply that initiation of smoking has increased rapidly between generations and especially in the youngest age group (see Figure 2b). In the second group (Armenia, Georgia, Kyrgyzstan and Moldova) the trends with age are less clear cut and do not reach significance (except when comparing the oldest and youngest age groups in Moldova).

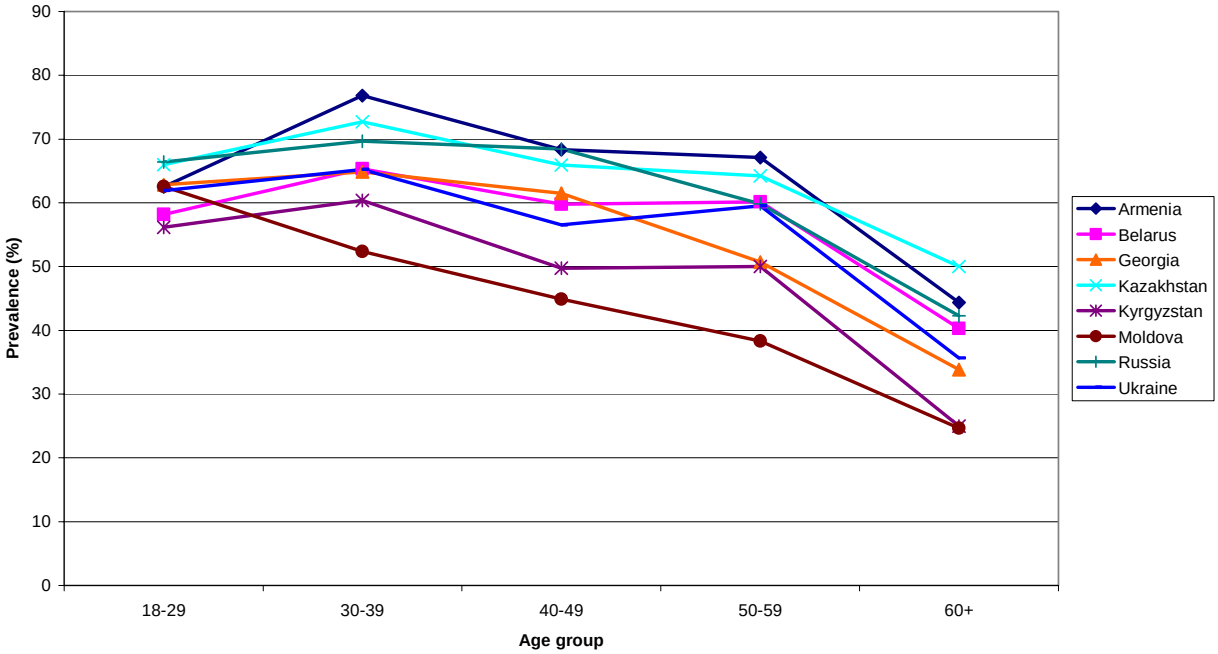

Figure 2a. Current male smoking prevalence by age group

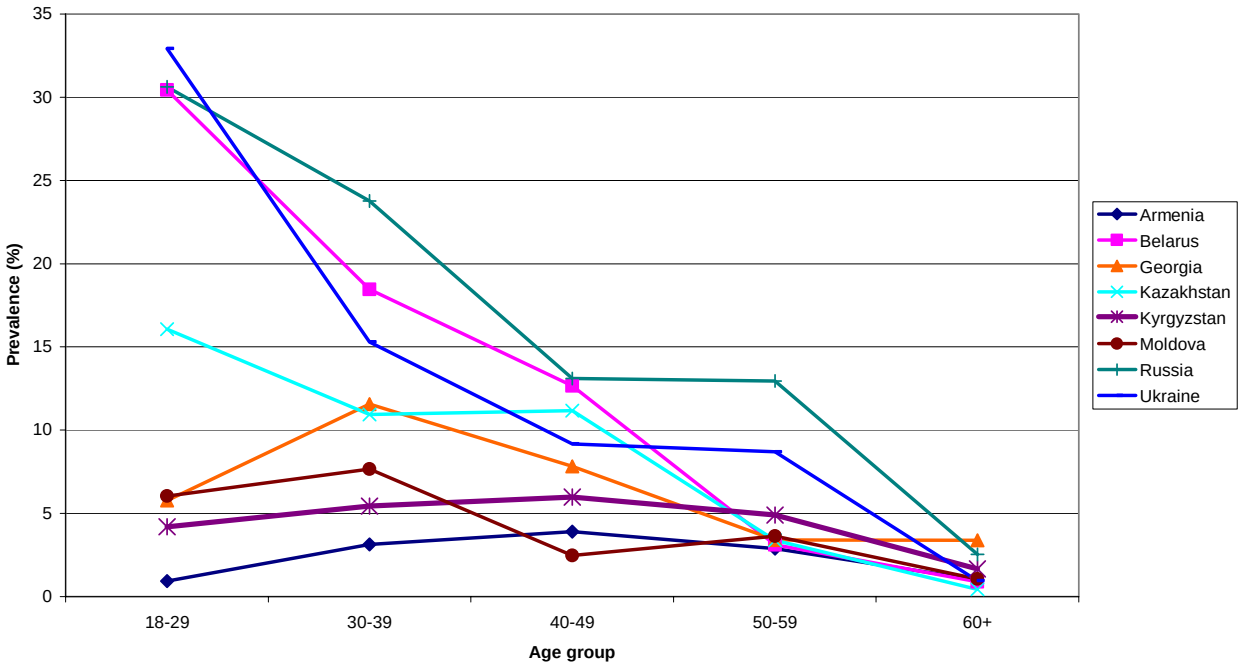

Figure 2b. Current female smoking prevalence by age group

Discussion

These surveys of over 18,000 individuals provide important new data on the prevalence of smoking in eight countries that represent more than four-fifths of the population of the former Soviet Union. For some of these countries they provide the first accurate, country-wide data on smoking prevalence and for the other countries, update previous surveys. Importantly they provide some of the first truly comparative data for countries of the FSU other than the Baltic states (Puska et al. 2003). Response rates were relatively high and the samples were broadly representative of their study populations, indicating the generalizability of the findings.

The study confirms that male smoking rates in this region are among the highest in the world with rates over 50% seen in all countries surveyed except Moldova and reaching 60% or more in Armenia, Kazakhstan and Russia. Elsewhere in Europe rates over 50% are only seen in Turkey (51%) and Slovakia (56%) and worldwide less than 20 countries are reported as having rates over 60% (Corrao et al. 2000). In men the lower prevalence of current smokers and higher prevalence of never and ex-smokers in those over 60 is likely to reflect the disproportionate number of premature deaths among current smokers compared with never and ex-smokers, although there is also known to be a cohort effect in the FSU with those who were teenagers between 1945 and 1953 carrying forward a lower rate of smoking as cigarettes, like other consumer goods, were in short supply in the period of post-war austerity under Stalin (Shkolnikov et al. 1999), with long-lasting consequences for mortality (Ezzati and Lopez 2003).

Compared with male smoking patterns, smoking in women is far less common, varies more between countries and has a different age-specific pattern. Although ever smoking rates are under 4% in the over 60s in all eight countries, in the four countries with the highest female smoking rates (Belarus, Kazakhstan, Russia and Ukraine), smoking is now significantly more common in the younger generations with risk ratios between the youngest and oldest age-groups of 12.2 to 37.3 compared with 1 to 5.5 in the other four countries.

Data for Russia as whole suggest that prevalence in men has risen from approximately 40% to 50% in the 1970s and 1980s to around 60% in the 1990s with little change since, whilst in women rates have risen from around 10% in the early 1990s to 15% now. Pre-transition data on women are confined to Moscow or other areas and whilst not directly comparable suggest that rates have been rising since the 1970s but most notably through the 1990s (Molarius et al 2001). Similarly in Ukraine historical data for Kiev show a steady rise in smoking among women from the mid 1970s to 1990s while male smoking rates barely changed, hovering around 50%. More recent national data suggest male smoking then rose slightly to reach approximately 57% by the turn of the century (Alcohol and Drug Information Center Ukraine 2002), suggesting that our rate of 52.5% could represent a downturn although further data will be needed to confirm this. In women, the only nationally comparative data is our previous survey which found a rate of 10% in 2000. Although other surveys found rates of 14% in 2000 and 2001, the difference is likely to be accounted for by their slightly younger age sample.

Between gender and inter-country differences in smoking prevalence are reflected in other smoking habits. Men are more likely than women to start smoking

when young, smoke more heavily and be nicotine dependent. Two groupings of countries appear to emerge from the between country comparisons - Belarus, Kazakhstan, Russia and Ukraine on one hand and Armenia, Georgia, Kyrgyzstan and Moldova on the other. In addition to having higher female smoking rates and more pronounced age specific trends, the former group tend to have lower ages of smoking uptake (particularly when compared with Armenia, Georgia and Moldova) and more marked gender differences in the number of cigarettes smoked per day and levels of nicotine dependency.

The between country differences observed in this study suggest that smoking patterns in Armenia, Georgia, Moldova and Kyrgyzstan are more traditional than those in Belarus, Kazakhstan, Russia and Ukraine. This could be explained by the differing penetration of the transnational tobacco industry in these countries (Alcohol and Drug Information Center Ukraine 2002). The Moldovan industry remains a state owned monopoly and although the Georgian and Armenian industries were privatised, this occurred late (post 1997) and none of the major TTCs invested directly. Kazakhstan, Russia and Ukraine by contrast saw major investments from most of the major tobacco companies in the early 1990s onwards. Belarus which remains a state owned monopoly and Kyrgyzstan, where the German manufacturer Reemtsma invested would therefore appear to be exceptions. In Belarus however, the state manufacturer has only a 40% market share, with the rest made up largely of illegal imports. The importance the TTCs attach to this illegal market is illustrated in the fact that, despite having little official market share, British American Tobacco (BAT) and Philip Morris have the highest outdoor advertising expenditure and the ninth and tenth highest television advertising expenditures of all companies in Belarus. As in Ukraine and Russia, tobacco is the product most heavily advertised outdoors and in Belarus the fourth most advertised product on television (there are now restrictions on television advertising in Ukraine and Russia). It is clear therefore that with continuing (if so far fruitless) discussion of a possible reunification with Russia, the TTCs treat Belarus as an important extension of the Russian market. In addition Kyrgyzstan also differs from the other countries with TTC investments in a number of respects – the investment came later (1998) and gave Reemtsma a manufacturing monopoly. However, Kyrgyzstan also differs from Belarus, Kazakhstan, Ukraine and Russia in a number of other respects – its lower level of development and industrialisation and its larger rural and Muslim populations. Further work is therefore needed to explore potential explanations for these between country differences. But whatever reasons emerge, the rising rates of female smoking and lower age of uptake with its implications for higher levels of dependency are cause for concern in all these countries.

Meanwhile the survey findings, combined with data on disease burden, confirm that smoking in men is well established while it is a relatively new phenomenon in women. The long-standing high smoking rates in men continue unabated. Amongst women, smoking in Armenia, Georgia, Kyrgyzstan and Moldova remains relatively uncommon and does not appear to have increased significantly as judged by rates in younger compared with older generations or by comparisons with previous data. By contrast female smoking in Belarus, Ukraine, Kazakhstan and Russia are higher, have increased from previous surveys and the age specific rates suggest an ongoing rise in younger generations. It is unlikely to be a coincidence that the higher rates are observed in countries with the most active TTC presence. Concerted and urgent efforts to

improve tobacco control must be made throughout the FSU to curtail current smoking patterns and prevent the rise in female smoking where it has not already been seen.

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Crime and Violence In Russia: Facts and Lessons from Data Analysis

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Crime across the world

Crime is a generalized phenomenon. Newman (1999) estimates that over a five-year period, two out of every three big-city residents in the world will be victimized by crime at least once. Most registered crimes are crimes against property; violent crimes constitute only 10-15 percent of the total. In fact, since crimes against property are much more often unreported than crimes of violence, violent crime is even less of the total. Registered crime rates are in general higher in industrialized countries, especially in the largest cities, than in developing ones. Nevertheless, alternative data sources (victim surveys) show that low- and middle-income countries have quite similar crime rates for many ordinary types of crime.

Russia as compared to other countries

Is crime in Russia worse than would be expected based on global comparisons? The answer is ambiguous. Russia has one of the highest homicide mortality rates in the world according to the WHO (see Table 1). Among 74 countries, the Russian homicide rate is the forth highest after Columbia, El Salvador, and Brazil.

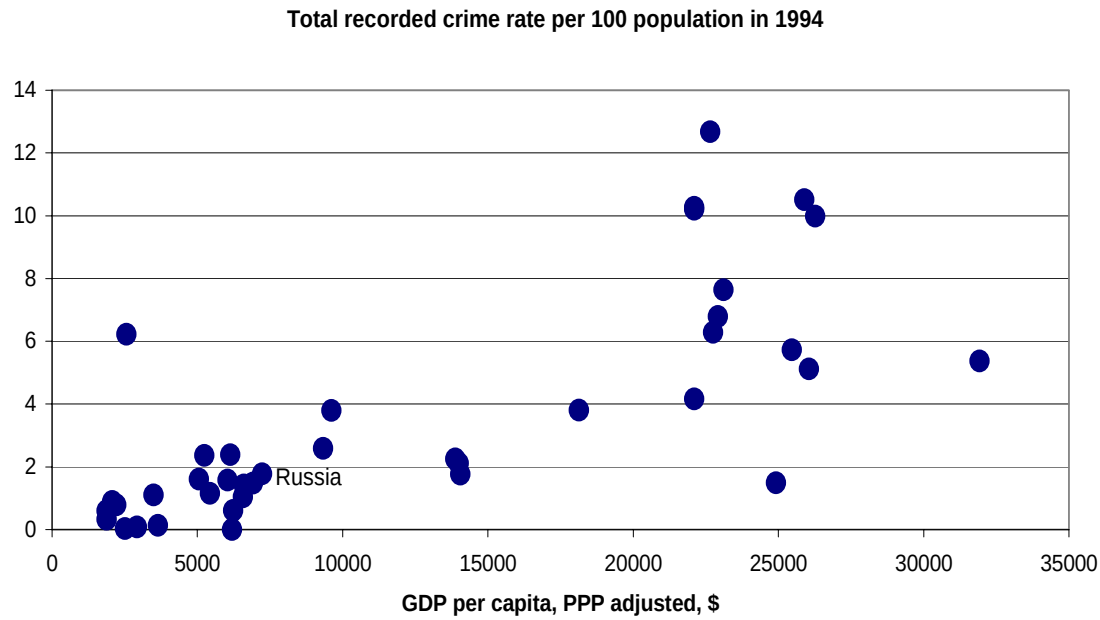
Despite the high rate of homicide mortality, Russia is not among the world leaders in the total crime rate. This can be shown using officially registered crime rates across countries (see Figure 1).

Registered crime rates are notoriously inaccurate. Russian surveys of victims show that most property related crimes, about three out of four (compared to half in Western Europe), are not reported to police. Most of these crimes are registered when the perpetrator (or a suspect) is apprehended. However, more accurate criminal victimization surveys also present a picture of Russia situated somewhere in the middle ranks of the global crime league table (see Table 2). The rate of violent crime (assault, threat, rape) in Moscow as well as the rate of property crime (theft, robbery, burglary) is very similar to the rates in other transition countries and even in western European countries, although much lower than in Latin American countries. Russian surveys held in two large cities and a medium-size town also reveal crime victimization rates that are not especially elevated (see Table 3). While the robbery rate and the total crime rate (crime against both persons and property) in these cities are somewhat lower than in Moscow or similar, the assault rates are considerably higher. In part this may be the legacy of the Soviet period when criminals were expelled from the largest cities and therefore, crime rates were higher in the secondary cities of the Soviet Union than in the major urban centers (Shelley, 1980).

Table 1. Homicide mortality rate (per 100,000 population)

	Country	Year	Rate
1	Colombia	1995	62
2	El Salvador	1993	56
3	Brazil	1995	23
4	Russia	1998	22
5	Albania	1998	21
…			
	Lithuania	1999	8
	USA	1998	7
	Finland	1998	2
	Germany	1999	1

Source: WHO *World Report on Violence and Health*, 2002.



Source: The Sixth UN Survey on Crime Trends and the Operations of Criminal Justice Systems , WDI (2001).

Figure 1: Total recorded crime rate, 1994 (per 100 population). Source: Data from the Sixth UN Survey on Crime Trends and the Operations of Criminal Justice Systems, presented in *World Development Indicators* 2001.

Table 2. Share of population victimized by crime, percent.

	Country/city	Total crime	Robbery	Assault
1	Buenos Aires (Argentina)	61	6	2
2	Bogotá (Columbia)	55	12	3
3	Rio de Janeiro (Brazil)	44	12	3
…				
	Johannesburg (South Africa)	38	5	5
	Budapest (Hungary)	32	2	1
	Moscow (Russia)	26	2	1
	Sweden	25	1	1
	USA	21	1	1
	Austria	19	0	1
	Baku (Azerbaijan)	8	2	0

Source: Data from International Criminal Victimization Surveys presented in *Human Development Report* 2002.

Table 3. Share of population victimized by crime, percent.

	Total crime	Robbery	Assault
S. Petersburg	26	2.0	3.0
Volgograd	18	2.5	2.6
Borovichi (Novgorod region)	21	1.0	3.0

Source: Civil Control 2001.

The criminal justice system

Russia is heavily policed and judged. Unofficial data indicate that the number of police per capita is higher than in other industrialized countries; moreover, international data for 88 countries show that number of judges is the highest (UN 6th and 7th Surveys of Crime Trends Operation of Criminal Justice Systems, available online at www.un.org). Russian police still claim the artificially high clearance rate (75%) familiar from Soviet times. This arises because, as mentioned above, many crimes are registered only when a suspect or the perpetrator has been identified.

About 60 million persons have been sentenced by the Russian criminal justice system over the last 30 years. Even allowing for repeat offenders, this is a remarkably high rate of judicial intervention. More than a third of 30-year males have criminal records, a figure similar to black population in USA. The prison population rate in Russia, 0.6% of population, is, along with the US rate, the highest in the world. There are other similarities between the two countries, as well. Both have a very severe penal

code and punish convicted offenders with lengthy sentences. In both countries recidivism of released prisoners is high and often offenders are sent back to prison for a crime more serious than the one responsible for their last spell in prison. In both countries the incarcerated population disproportionately represents the lowest strata of society.

Temporal and spatial trends

In line with the general world-wide trend, the Russian crime rate has gradually increased since the 1960s. However, there was a spectacular rise during the economic crisis accompanying the transition (Pridemore, 2001). The homicide rate increased three times, with especially high jumps (1989, 1992, and 1999) corresponding to years when especially significant political and economic changes took place (see Figure 2). Homicide and homicide attempts and the homicide mortality rate all declined during the Gorbachev anti-alcohol campaign. Figure 2 illustrates how closely homicide dynamics parallel alcohol abuse as indexed by alcohol poisoning mortality.

The geographical distribution of violence in Russia shows stable pattern – homicide rates increase from south to north and from west to east with maximum values in the coldest areas. The gradient of violence coincides with the gradient of winter frost, with a correlation between the homicide rate and winter temperature of -0.5. The presence of criminals released from labor camps (prisons) in the coldest regions may account for some of this. However, the high rates of alcohol abuse and social exclusion in the coldest regions, isolation and the stresses of life, in these difficult regions appear to combine to raise the homicide rate.

Homicide and mortality from homicide in Russia, per 100,000 population

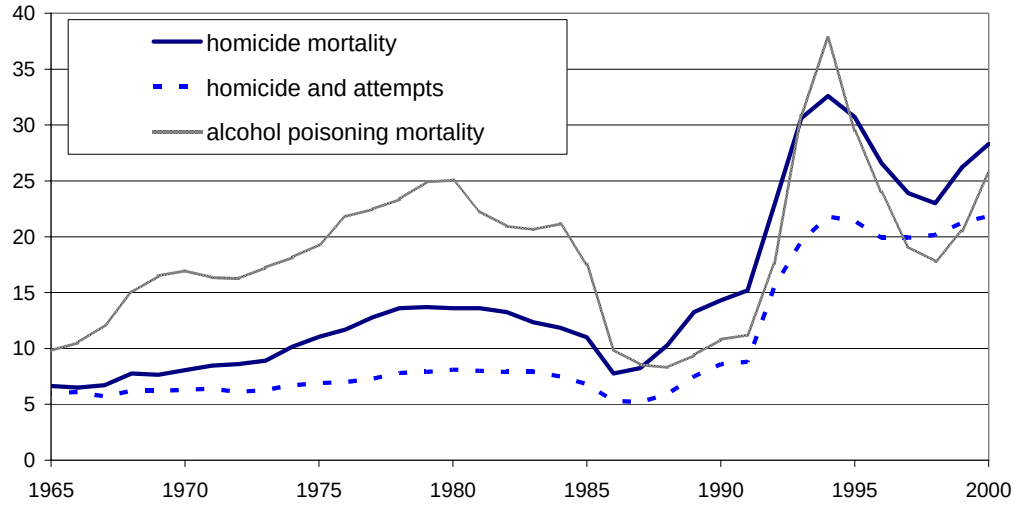


Figure 2: Homicides and homicide attempts, homicide mortality, and alcohol poisoning mortality (per 100,000 population). Source: Homicides and homicide attempts: Ministry of Interior; Homicide and alcohol poisoning mortality: Goskomstat; data from Luneev 1999.

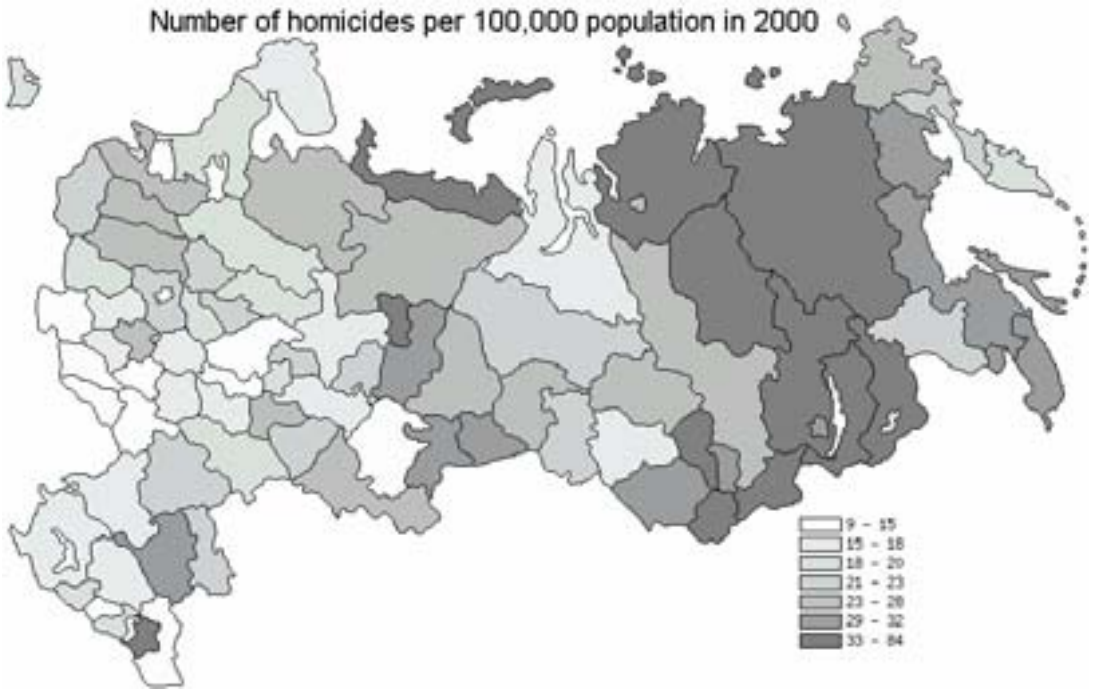


Figure 3: Homicide rate (per 100,000 population, by region, 2000).

Victims and offenders

The age pattern of homicide victims (and offenders) in Russia is quite different from that is observed in Western European and most other industrialized countries, with the most vulnerable age group not 15 to 30 but 30 to 45. This pattern is, however, observed in a number of other transition economies.

Table 4. Homicide mortality rate by age, per 100,000 population

	15-29	30-44	45-59
Brazil, males	81	62	39
Brazil, females	7	6	3
Russia, males	**38**	**62**	**50**
Russia, females	**11**	**14**	**14**
USA, males	24	12	7
USA, females	5	4	2
Germany, males	1	1	1
Germany, females	1	1	1

Source: WHO *World report on violence and health*, 2002.

In 1995 30 percent of assault and homicide victims were relatives, acquaintances and neighbors of the perpetrator. About half of violent offenders did not have a

permanent source of income and more than third part had not been working in more than three years. More than half had a mental anomaly. About half of all violent crimes were impulsive, i.e. not premeditated. However, during the 1990s the share of premeditated homicides in total homicides rose (Dolgova 2001). In almost half of premeditated homicides, financial gain is either the main or one of the motives (Luneev 1997). Contract killing, mostly concentrated in largest cities, industrial centers and ports, is a new phenomenon. However, organized group and contract killings constitute a small proportion of all homicides in spite the impression left by crime reporting in the mass media.

As suggested by Figure 2 above, there is very close relation between alcohol and violence. About 80 percent of detected murderers and 60 percent of homicide victims consumed alcohol immediately before the crime. (Nemtsov 2003). Drug use, by contrast, seems to be an insignificant correlate of homicide, with the share of homicides committed by drug users only 2 percent in the mid-1990s (Dolgova, 2001). While most Russian homicides are still committed with knives and axes (as in Soviet times), guns are increasingly involved.

Statistical analysis of Russian and international criminal statistics

In this section, a number of econometric results (collected together in Andrienko 2003) are summarized.

USSR aggregate data analysis

Regression in first differences (to eliminate non-stationarity) on annual data reveals strong linear relationships between the homicide rate and (i) life expectancy and (ii) alcohol consumption:

$$\Delta Homicide = \underset{(0.3)}{-3.0} \times \Delta Life\ Expectancy + \underset{(0.2)}{0.3}, \quad R^2 = 0.75$$

and

$$\Delta Homicide = \underset{(0.005)}{0.05} \times \Delta Alcohol\ poisoning + \underset{(0.2)}{0.4}, \quad R^2 = 0.75$$

(number of observations is 33, standard errors are reported in parenthesis). When general living conditions, as indexed by life expectancy, worsen, the homicide death rate increases. Similarly when alcohol abuse, as indexed by the alcohol poisoning mortality rate, increases, homicide increases.

Multivariate time series analysis suggests that the homicide rate is higher when (i) criminal convictions decline, (ii) alcohol consumption grows, (iii) more prison inmates are released, and (iv) income increases. These results are summarized in Table 5. They are affected by possible endogeneity of regressors, and therefore should be interpreted with caution.

Table 5. Homicide time-series analysis

	Homicide rate	Homicide mortality
Homicide t-1	0.34***	0.47***
Conviction (no imprisonment) t-2	-0.017***	-0.28***
Conviction (no imprisonment) t-3	0.009***	0.28***
Conviction (imprisonment) t		-0.15**
Conviction (imprisonment) t-1	-0.007***	
Release t-1	0.004***	0.12***
National income t	2.30***	28.5**
Alcohol poisoning mortality t	0.006**	0.20***
Const	-0.68***	-8.41**
No. obs	24	23
R^2 adj	0.92	0.87

** 5 percent level of confidence, *** 1 percent.

t means current year, t-1 last year.

International aggregate data analysis

Using a pooled sample of 52 countries and 275 observations during the 1990s, the change in the homicide rate is found to be negatively correlated with life expectancy with a coefficient of -1; meaning 1 additional year in average life leads to 1 less homicide per 100,000 population. The implied elasticity is a whopping -7. In addition, change in average income, measured by GDP per capita (PPP adjusted in constant dollars), also has a significantly negative coefficient.

$$\Delta Homicide = \underset{(0.2)}{-1.0} \times \Delta Life\ Expectancy - \underset{(1.1)}{2.1} \times \Delta Log(GDP) + \underset{(16)}{92}, \quad R^2 = 0.36$$

The last equation has been estimated with country specific effects, thus controlling for unobserved heterogeneity across the countries. Again, standard errors are reported in parenthesis. Note, that alcohol consumption in this model was not found to have a statistically significant coefficient and was therefore excluded from the model.

Russian regional data analysis.

Finally, multivariate regression analysis of panel data corresponding to 77 Russian regions during period 1992-2000 indicates (see Table 6) that the homicide rate is higher when:

- last year's homicide rate was higher (i.e., there is time persistence),
- the clearance rate (share of solved homicides) is lower,

- life expectancy is lower,
- socio-political conflict is higher,
- alcohol consumption is higher,
- real income is lower, and
- the unemployment rate is lower.

The latter is a perverse result; the other coefficients are in accordance with theory and common sense.

Table 6. Homicide mortality regression

Homicide, lag	0.21***
Clearance rate	-0.14***
Life expectancy	-1.66***
Socio-political conflict	0.11**
Alcohol poisoning	0.03*
Real income	-0.43**
Unemployment	-0.29***
Const	0.29***
No. obs.	606 (77 regions)

Other results (Andrienko and Shelley 2004) suggest that

- when conflict in Chechnya is higher, homicide rate is higher, especially in close regions (conflict spillover effect),
- regions with on average better educated people have less violence,
- better climate (higher temperature) "causes" less homicides,
- the higher is ethnic polarization, the more homicides are,
- when there are more drug users, then homicide rate is higher,
- the higher income growth, the less violence,
- income disparity leads to more crime and violence but this result is not very significant.

Concluding remarks

Crime and violence are topics deserving attention in current Russia, although their scale is exaggerated in popular opinion. International comparisons show that crime rates, including violent crime rates as indexed by homicide mortality, while high, are not out of line with international experience. However, the nature of violence in Russia

is different; it is generated within household and neighborhood, typically in deprived or isolated regions of the country (rather than the urban core) and very often in a context of alcohol abuse.

Concerning different unfavorable and negative socio-economic and demographic processes the Russian Federation faces during transition period and even before that under command political regime we may argue that general quality of life has important impact.

Possible general conclusion which can be done from this and similar work is that crime, violence, and alcohol abuse are basically results of poor life and in part adverse initial conditions for life (such as geographical position and climate). Even more than in other settings, crime in Russia appears to be tied to social exclusion and the common response to it, i.e. alcohol abuse.

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Homelessness

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Homelessness in the 1990s

With the start of economic reforms, the figure of the *bomzh* - a homeless person in dirty clothes and with unkempt looks, begging near metro stations, at churches, or lying on benches in parks or train stations - has become omnipresent in Russian cities and towns. The *bomzh* as a social type has become the predominant representative of the homeless population, with vagrants disappearing from social categorisations and from popular mythology, and "non-street" homeless people (those who stay with friends, relatives or in rented accommodation) remaining almost completely invisible.

The labor market, which both produced and sustained mobile homeless migrants in the Soviet period no longer exists. Great communist construction sites are closed. *Shabashnichestvo*, which played an important role in compensating for the inefficiencies of the Soviet planned economy, is not needed under market conditions. Unemployment in the rural areas, and migration to Russia of qualified people from the ex-Soviet republics, many of whom live in compact settlements in rural Russia, mean that homeless workers cannot easily find jobs outside cities. In interviews homeless people described the new conditions of employment in rural areas in the following way. Employers come to the train stations, choose the homeless people whom they consider fit for work, take them to their farms and give work for several days. For this they provide food and shelter, and - rarely - small wages. Migration in search of seasonal work is becoming a thing of the past. In some of the regions of Russia (e.g. the North Caucasus, Kalmyk republic and Siberia) the search for work in distant villages is becoming quite dangerous. There have been many reports of people being put into guarded camps and used as slaves. In the south of Russia (for example in the Rostov and Krasnodar regions) the homeless are harassed by Cossacks, who try to evict them from the territories under their control.

With the itinerant way of life hardly possible, and with jobs in the formal economy either lacking or inaccessible because of institutional discrimination (which will be discussed below), people try to make a living in the urban informal economy. Some find new opportunities in this economy, and some are left to fight for physical survival.

The Russian Statistical Agency estimates the size of the informal economy at 25% of total GDP. This figure, however, does not include such shadow activities as illicit street-level economic activities (e.g. begging, busking, window-cleaning), nor does it include more openly proscribed occupations such as the drugs trade or prostitution, which have also become an important part of the informal economy. Many employees, particularly in construction and the service sector, have adopted the practice of employing adults without official contracts. This is particularly widespread in the service sector, where employees are often paid cash at the end of the working day. A recent OECD report says that workers in the unregulated labor market tend to be

younger, new entrants, migrants and, to a lesser extent, workers released from large-scale state enterprises. Relatively high labor turnover and a high risk of unemployment are common in this sector (OECD, 2001, 67-68). Research shows that among individuals who try to find a living at the lowest end of this market and who are particularly prone to homelessness are people with very low financial resources and low qualifications, who have lost support from relatives and friends, alcoholics, ex-prisoners or orphans from children's homes (Afanasiev et al., 1995, Stephenson, 1997).

Although underemployment rather than open unemployment has been a particular feature of the Russian transition (OECD, 2001), some categories of workers were disproportionately affected by unemployment. Market reforms have produced a sharp differentiation between the positions of skilled and low-skilled workers at enterprises, with welfare provisions, which used to support the low skilled, cut or abolished (Kozina and Borisov, 1996, Zaslavskii, 2001). Soviet enterprises had many so-called 'reserve' workers on their staff, who had few, if any, qualifications, and who were used in auxiliary work as manual labor. As Kozina and Borisov point out, "In the past this category of workers caused the most trouble through high labor turnover, drunkenness, theft and so on. However, this surplus was deliberately used by the enterprise management in many ways. For example it could be used as a means of social control over other workers: instead of dismissing workers, they could be transferred to less skilled, and thus less well paid, work on a temporary or permanent basis. Under the new conditions the enterprise obviously first rid itself of this group of workers, and following the first wave of redundancies the category of reserve workers had almost disappeared" (Kozina and Borisov, 1996, 147). Being made unemployed and no longer "fixed" to the enterprise-based social system, these ex-workers became vulnerable to homelessness, particularly if they attempt migration to another town or region.

Among the factors leading to homelessness is displacement linked with the closing down of workers' hostels; elimination or reduction of other institutional housing: mental hospitals, state orphanages, reformatories for alcoholics. The high cost of renting in the private sector in relation to wages is also responsible for homelessness, particularly in the case of divorced men, who may not be able to afford to rent housing after a family break-up. Loss of housing in property frauds has been another factor, particularly in 1991-1997, with many of the victims being elderly people or alcoholics.

Release from penitentiaries continues to be among the major factors leading to homelessness (although there are no more criminal sanctions for "vagrancy and parasitic way of life"). This is a result of the very high rate of incarceration in Russia (Russia had 970,000 people in detention facilities at the end of 2001). Often ex-prisoners lose their housing while in detention or are unable to get registered at their previous residence. The latter can be the result of a variety of circumstances such as administrative obstacles or unwillingness of their relatives and (former) spouses to register them etc. Some do not get an internal passport on release, which makes it even more difficult to find housing and jobs. The share of ex-prisoners in the homeless population remains high, fluctuating with mass amnesties. From 1995 to 1999 from 20-30% of homeless people who were clients of Medecins sans Frontiers (MSF) in Moscow were ex-prisoners. In 2000, when there was a Russia-wide amnesty, the share of ex-prisoners among the Moscow homeless increased to 30% (see Table 1). In St.Petersburg, 50% of people who came to Nochlezhka (a non-governmental organization that supports homeless people) in 2001 were ex-prisoners. (Na dne, 2002).

Street homeless children are another significant group among those who have no secure access to housing and have to engage in survival strategies in the informal and shadow markets. The phenomenon of street children did not exist in the Soviet Union on a mass scale, with the exception of the periods following the revolution, the civil war and the Second World War. Any runaway children were quickly picked up by the militia and returned to their families or placed in residential care. Recent research has shown that street children come predominantly from families who have lost stable employment and have experienced a deterioration of living standards and an increase in social isolation. A high proportion come from single-parent and reconstituted families (Stephenson, 2001, ILO\IPEC, 2000, 2001a, 2001b). Among the individuals and families most affected are low-skilled manual workers, or people with prior problems with the law and/or alcohol or drug addiction. There is a high incidence of family violence, neglect and abuse in the families of such children. The majority of the street children are not homeless, and spend at least some nights in a week at home. But there are also children who either live permanently on the streets or have a limited and risky access to housing. Some of them are runaways, others have homeless parent or parents. Among the homeless, these children are often called, and call themselves, "small *bomzhis*", as opposed to "big (adult) *bomzhis*". They identify with the stigmatized social group of adults and share their fate. The 1920s term “besprizorniki", which refers to homeless children as a special social group, was not used at all by old or young homeless people in my interviews.

When the children run away from home, or start their homeless existence together with the homeless parents, the majority of them experience the street as a very dangerous place. In our survey of 123 street children in Moscow, conducted in 1998-2000, 73% of the respondents reported having been afraid of being on the street. Fear of violence is the most frequent of fears, and there are particular groups of people who children deal with in the streets – militia officers, adult homeless people, drunks, drug addicts – who children named specifically in answering the open-ended question about their fears.

Fears do not necessarily translate into particular experiences, although 20% of our respondents reported violence and 23.8 % mentioned negative experience with militia as the main problems of life on the streets. It is worth noting, that among these fears and experienced problems the issues of getting enough food, finding a place to sleep or satisfying the needs in communication or fun do not come out as the most urgent (although practical problems with washing or clothes seem to be, in the current Moscow context of the absence of facilities, quite difficult for the children to resolve).

Street life involves dangerous and illicit practices. The majority of children reported that during their life in the streets they were involved in stealing and/or begging. 70.1% consumed alcohol. 87.3% smoked, 39.7% sniffed glue, and 26.3% consumed drugs. 49.6% had experienced sexual relations, which began either before, or during the street life.

Table 1. The social-demographic composition of MSF clients (in per cent)

	1995	1996	1997	1998	1999	2000
Reasons for homelessness						
Ex-prisoner	25	25	26	22	19	30
Loss of housing	21	20	19	19	22	25
Family problems	15	16	15	16	13	14
Loss of a job	16	19	16	24	11	14
Personal choice	3	6	6	5	7	4
Refugee (forced migrant)	5	3	3	3	2	1
Psychological problems	1	0	0	1	1	2
Other	12	9	11	3	6	5
Not homeless	2	2	3	7	18	0
Gender						
Men	86	86	83	85	85	86
Women	14	14	17	15	15	14
Education						
Primary	5	4	2	2	2	2
Incomplete secondary	5	23	18	17	14	13
Secondary	62	43	49	53	52	56
Vocational	19	21	21	18	2	20
Higher	8	9	9	9	9	8
No education	0	0	1	0	1	1
Previous occupation						
Worker	79	78	78	85	78	72
Employee	9	14	14	11	13	16
Agricultural worker	2	3	2	2	2	2
Military serviceman	1	1	1	1	1	1
Others	6	4	3	1	5	8
Does not know	2	0	2	0	1	2
Age						
15-24 years	8	9	8	7	7	4
25-34	23	24	22	22	19	17
34-54	35	33	34	35	33	30
45-54	22	22	24	24	3	34
55-64	10	9	9	10	9	13
>65 years	2	2	2	2	2	2
Length of homelessness						
Less than 1 month	5	18	26	31	9	5
1-6 months	42	50	24	18	14	12
7-12 months	13	7	10	9	9	8
1-5 years	30	20	30	27	36	42
6-10 years	5	3	5	6	11	21
11-20 years	2	1	1	2	2	5
More than 20 years	1	0	0	0	1	2
Not homeless	2	2	3	8	18	5
Source of income						
Begging	48	54	53	52	46	41
Temporary work	39	40	40	42	41	46
Pension	3	3	4	3	3	3
Permanent job	1	1	1	1	1	2
Other	8	2	2	1	9	8

Source: Adapted from Gutov and Nikiforov, 2002.

The share of homeless children drawn into professional prostitution or having to sell sex from time to time seems to be quite substantial, although we cannot give any reliable statistic estimates. In our sample 7 out of 35 girls interviewed admitted being involved in prostitution during their life in the streets. According to many accounts, boys are also involved in prostitution, but only one of our male respondents admitted this.

Social and demographic characteristics of homeless people in Moscow and St. Petersburg

To this day there is no reliable information on the numbers of homeless people in Russia and their social and demographic characteristics, and published research on the causes of homelessness and profiles of homeless people is scarce. It is hardly possible to define and count homeless people as a group. There are so many gradations and degrees of homelessness (from living in insecure accommodation, staying with relatives and friends to being on the streets), that it is practically impossible to draw any border around them.

At the same time there are pragmatic reasons for making some approximation of the numbers of homeless people and getting a feel for the dynamics of homelessness, if only to be able to influence policy-makers. The first opportunity to get data on the numbers and composition of homeless people across Russia (which could then form the basis for later comparisons if the same survey methodology is used) will be provided by the all-Russian population census conducted in October 2002. In the absence of this data (which is yet to be released), charities, which keep a database of their clients or conduct ad-hoc interviews, remain the main source of quantitative information. According to the MSF, there are currently over 100,000 homeless persons living in Moscow and 50,000 in St. Petersburg. These estimates relate to homeless people defined very broadly, as individuals who have no registration at their place of residence. Street homelessness is estimated as being around 8,000 people in St.Petersburg (Nochlezhka) and 15,000 in Moscow (MSF). While there is no reliable data on the trends in the numbers of homeless people, the numbers of people detained in militia reception centres, according to the Ministry of Interior (MVD), have remained more or less the same over the last several years, with a peak being achieved in 1993-1997.

MSF and Nochlezhka datasets are barely comparable, as these organizations have different clients. MSF's clients are predominantly street homeless people in Moscow, while Nochlezhka works with a wider range of people without residency rights in St.Petersburg. MSF's main function is to provide medical help to homeless people, and its clients are those homeless people who have no access to free medical services and cannot afford to pay for them. Thus the MSF's database contains information on the most deprived homeless people, possibly skewed towards older ages. Nochlezhka registers people who have no official residency rights in St.Petersburg. Its client base is therefore much broader than that of the MSF, and includes people who stay with friends and relatives, rent housing and have jobs. These datasets have some serious shortcomings, including a lack of longitudinal information on homeless individuals, a possibility of duplication of individual registrations - when one person can be registered each time they come to the organization – and very broad categorisations of the causes for homelessness used in the questionnaires. But it is clear from these two datasets that there are important characteristics of homeless people in

Moscow and St.Petersburg that make them very different from such populations in Western Europe, which tend to be younger, with higher levels of illiteracy or broken education, lower skill levels, and with a rising proportion of illegal migrants and refugees (Council of Europe, 1993, Avramov, 1999, Engbersen et al, 1999, Oude Engberink, 2000). Apart from the fact that most homeless people in St.Petersburg and Moscow are Russian citizens, their levels of education and skills are relatively high (although less than those of the general population), and they tend to be older (excluding the population of street children, who are not catered for by the MSF and Nochlezhka).

Economic migration is among the most frequent causes of homelessness in Moscow. In 2001 of all the people who came to the Moscow office of the MSF for medical and other help, 47% had migrated to the capital from other Russian regions, 17% were from Moscow, 20% were from Moscow region, and 16% arrived from other CIS states (mainly Belarus, Ukraine, Moldova and Kazakhstan). The majority of them were Russian citizens. In St.Petersburg, and, judging from episodic and occasional research, in other towns of Russia where migration is not so high, homeless people are predominantly local residents. According to the data from St. Petersburg's Nochlezhka, among its clients, 83% have lived in the city for more than 10 years, and 63% were born in the city. 95% are ethnic Russians (Karlinskii, 2002).

Most homeless people have completed secondary education. 12% of Nochlezhka's clients in 2001 had completed, or partially completed, higher education and, according to MSF data, in 2001 7% of homeless persons had a university education. The gender composition of homeless people in Russia is not much different from other countries – men predominate. Homeless women may be more invisible, as women tend to be more immersed in social networks. In Moscow most homeless people registered by the MSF (about 85-90%) are men. This share has remained more or less stable throughout the 1990s. Yet in St.Petersburg there is evidence of a growing proportion of women (from 30% in 1999 to 42% in 2001) (Na dne, 2002). Most of homeless people in St.Petersburg are single or divorced (Afanasiev et al, 1995). While there is no comparable quantitative data for Moscow, my interviews with homeless people and charity and militia workers in Moscow indicate that this is the case there as well.

There are some indications that the economic upturn which Russia has experienced since rouble devaluation in 1998 was associated with a slowing down of the influx into homelessness. MSF data shows that the proportion of people who had been homeless for 6 months or less, which had been increasing gradually up to 1998, dropped in 1999-2000. Another important change, possibly also associated with a better economic situation, has been a decrease in the share of people who cite begging as their main source of income. While in 1998 begging was claimed as the main occupation by 48-52% of MSF clients, by 2001 this figure had gone down to 22%, and at the same time the percentage of people who had casual jobs increased from 42% to 51%. The proportion of those who have permanent jobs or pensions has not changed much. In 2001 2% had pensions and 1% - permanent jobs (MSF-USA, 2002).

At the same time there has been an increase in long-term homelessness. In Moscow the percentage of people who stay on the streets from one to five years increased from 30% in 1995 to 42% in 2000, and from six to ten years – from 5 to 21%.

There is growing proportion of older people in the homeless population. In 1995 35% of the homeless clients of the MSF were aged between 35 and 44, but by 2000 this number had decreased, and the age group 45-54 had expanded up to 34% (see Table 1).

Although only very tentative conclusions can be drawn from these data, it seems that the homeless populations of Moscow and St.Petersburg do not significantly differ in their social origins from the "mainstream" populations, and do not form any kind of "hereditary" underclass. But their inclusion into society is extremely difficult, especially given a lack of state assistance and very limited opportunities to join the formal labor market. While no data exists on the scale of "graduation" of street homeless children into the adult homeless population, qualitative interviews with homeless adults, children and charity workers confirm that this process in under way.

Health of the homeless population

Health problems of homeless people are severe, and the spread of TB and STD among them is particularly worrying (Figure 1). The key issue remains proliferation of TB in the penitentiary system, where a significant proportion of homeless people come from, lack of access to health services. Health problems of homeless people in Moscow are aggravated by obstacles to getting hostel accommodation (if they are not ex-Moscow residents.) Also, a lack of sheltered housing projects means that homeless people, who do not want to stay in hostels with their harsh regime and everyday risk of violence, are left to live on the streets.

The health problems of street children are also acute. In our survey 42% of children reported problems with health. The most frequent complains were colds and respiratory infections, problems with digestive system and sexually transmitted diseases. According to the data of the reception centre for juvenile delinquents, about 12% of the children who were brought there had to be sent to general hospitals, and about 8% to STD clinics.

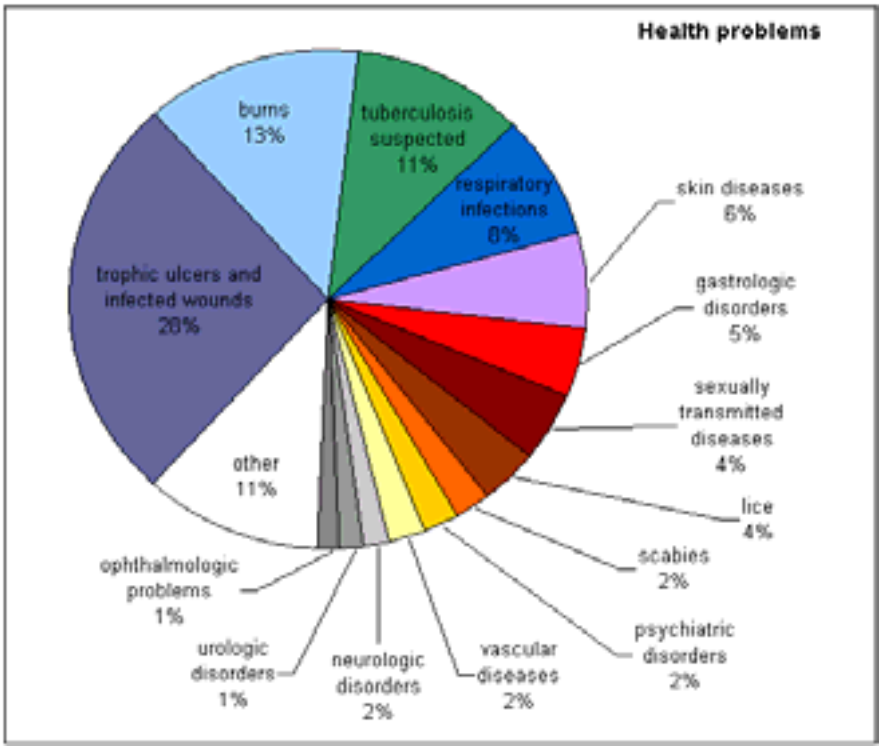
Street children have much better chances than adult homeless people to get into hospitals, although hospitals sometimes refuse to take them in. However, the key problem is what to do with a child after he or she is released from hospital, so that they do not end up back on the streets. Existing shelters are only allowed to keep a child for six months, and in this period documents are prepared to send him or her to a children's home. Non-resident homeless children, picked up on the street, are deported to their families, which often means that they run away again.

No data is currently available on the mental health of street and homeless children and how this differs from the mental health of the mainstream children's population. International research shows that street youth tend to have a high incidence of mental illness (Craig et al., 1996). Mental health problems may be a factor, which contributes to children running away, and special support services need to be developed for families where children run away repeatedly. Development of foster families systems which is underway in Moscow and in Samara region; establishment of special adoption centres (now existing in 15 Russian regions) need to be accompanied by programs aimed at improving children's mental health. Also, a special attention needs to be paid at the use of psychiatry in children's homes. In a December 1998 special report, "Abandoned to the State: Cruelty and Neglect in Russian Orphanages", the human rights non-governmental organization (NGO) Human Rights Watch exposed the

severe lack of facilities for rehabilitation or socialisation of children in such institutions and large-scale practices of repressive psychiatry used by the staff (Human Rights Watch, 1998). More than 200,000 children run away each year from the state homes, from schools for delinquent children and homes for children with mental and nervous conditions (NAN, 1996).

Staying in a night shelter, which is possible up to 30 days within one year, gives a person the right to a temporary registration and thus access to municipal polyclinics, pensions and other benefits. Yet the shelters, as well as centres of social adaptation (where they can stay up to six months) and cheap social hotels, are accessible strictly to homeless persons who come from Moscow and, since 2000, ex-inhabitants of the city. According to the MSF only about a third of the homeless people in Moscow meet these criteria. Access is also restricted by the requirement to pass medical check-ups and be disinfected. No "emergency" night shelters exist. A major new centre for medical and social assistance to the homeless is currently being constructed in Moscow near to the Kursk train station. Unlike other municipal services, it will be open to non-Muscovites as well as Muscovites. These are specialist clinics for TB or venereal disease, which do not turn homeless people away as they attempt to prevent the spread of these diseases to "normal" people.

Figure 1: Heath of the Moscow homeless



Source: MSF

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HIV/AIDS

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Introduction

UNAIDS Director Peter Piot stated, during the XIV International Conference on AIDS in Barcelona, Spain in 2002, that Russia is 'experiencing the most rapidly growing epidemic in history and yet one of the most under-addressed in terms of response'. This note describes the evolution of the epidemic, summarizes research regarding the main high-risk groups, and elicits policy-relevant conclusions.

Since the first HIV/AIDS cases were reported in 1981, more than 20 million people have died as a result of AIDS. Currently there are more than 42 million people living with HIV/AIDS (PLWHA) globally (UNAIDS/WHO 2002). While Sub-Saharan Africa is undoubtedly the hardest hit in terms of sheer numbers and prevalence, whereby some countries such as Botswana are experiencing adult prevalence rates as high as 38.8%, emerging and explosively expanding epidemics have been documented in Eastern Europe and Central Asia, most notably in the Russian Federation (RF), Ukraine and some Central Asian Republics were 1.2 million cases have been reported (*ibid.*). The RF, Ukraine and Estonia share the dubious distinction of experiencing the fast-growing epidemics both currently and historically.

Eastern Europe and Central Asia have encountered HIV/AIDS relatively late compared with other regions (see Table 1). According to UNAIDS, most regions experienced the beginnings of widespread infection as early as the late 1970s through the early 1980s. The Eastern European and Central Asian epidemics, however, began in the early to mid-1990s with explosive growth rates beginning in the late 1990s to present. The first registered cases appeared under the Soviet regime in the mid-1980s (see Table 2), but were largely considered anomalies, and thought to be problems of the 'decadent West', whereby those at risk included 'homosexuals, bisexuals, prostitutes, drug addicts, those who led "disorderly" sexual lives, and most importantly, black Africans' (Powell 2000). Prior to 1994, cases were concentrated among men who have sex with men (MSM) and foreign residents. Current thinking still reflects Soviet policies whereby those who have resided abroad for a certain length of time, as well as foreign residents or visitors expecting to stay in the RF for more than three months are required to submit an HIV sero-negative certificate when applying for entry visas or upon entry at national borders.

In 1986 the first case among a Soviet citizen was registered among an individual who contracted the virus in Africa, and then transmitted it to 15 soldiers through homosexual relations (Grisin and Wallaner 2002). Further infections occurred periodically with small 'outbreaks' attributed to the use of contaminated equipment and the reuse of syringes and/or needles in hospital and clinical settings. In the RF, HIV/AIDS cases are now registered in all 89 regions (see Table 3), with 10 regions reporting prevalence rates twice the national average of 170 cases per 100 000 population. At the time of writing (1 September 2003), officially registered cases have

reached 249 918, climbing from the 10 993 reported cases at the end of 1998 (UNAIDS/WHO 2002). The full extent of the epidemic in the RF and neighboring countries is not only unknown but recognized as under-estimated (Rhodes et al. 2002a). Given that the above figures represent officially reported cases only, many experts—both Russian and international—estimate that the real numbers are much higher. Most experts agree that there are at least 1 million PLWHA in the RF (Feschbach 2003, Transatlantic Partners Against AIDS 2003).

TABLE 1:
REGIONAL COMPARISON OF HIV/AIDS EPIDEMICS BY REGION
31 DECEMBER 2002
(adopted from UNAIDS/WHO[11])

Region	Year of Start of Epidemic	# Adults LWHA	Adult Prevalence Rate	% of Adult Women among LWHA	Main Mode of Transmission
Sub-Saharan Africa	late 1970s / early 1980s	29.4 million	8.8%	58%	Heterosexual
N Africa & Middle East	late 1980s	550 000	0.3%	55%	Heterosexual, IDU
S & SE Asia	late 1980s	6.0 million	0.6%	36%	Heterosexual, IDU
E Asia & Pacific	late 1980s	1.2 million	0.1%	36%	IDU, Heterosexual, MSM
Latin America	late 1970s / early 1980s	1.5 million	0.6%	30%	MSM, IDU, Heterosexual
Caribbean	late 1970s / early 1980s	440 000	2.4%	50%	Heterosexual, MSM
E Europe & Central Asia	**early 1990s**	**1.2 million**	**0.6%**	**27%**	**IDU**
W. Europe	late 1970s / early 1980s	570 000	0.3%	25%	MSM, IDU
N America	late 1970s / early 1980s	980 000	0.6%	20%	MSM, IDU, Heterosexual
Australia & New Zealand	late 1970s / early 1980s	15 000	0.1%	7%	MSM
Total		***42 million***	***1.2%***	***50%***	

[11] Ibid., UNAIDS/WHO, 2002.

TABLE 2:
OFFICIALLY REGISTERED HIV CASES IN THE RUSSIAN FEDERATION
1 JANUARY 1987 THROUGH 1 SEPTEMBER 2003
(based on data from the Russian Federal AIDS Centre)

Year	New Registered Cases	Cumulative Registered Cases	Number of deaths among PLWHA	Number of PLWHA	Prevalence per 100 000	Annual Incidence per 100 000	Prevalence Increase Index	Annual Incidence Increase Index	% of Total Infections
1987	24	24		24	0.0	-	-	-	-
1988	47	71		71	0.0	0.0	-		-
1989	268	339		339	0.2	0.2	-	5.7	-
1990	103	442		442	0.3	0.1	1.3	0.4	-
1991	84	526		526	0.4	0.1	1.2	0.8	-
1992	89	615		615	0.4	0.1	1.2	1.1	-
1993	110	725		725	0.5	0.1	1.2	1.2	-
1994	165	890		890	0.6	0.1	1.2	1.5	-
1995	200	1 090	169	921	0.6	0.1	1.0	1.2	0.4
1996	1 525	2 615	219	2 396	1.6	1.0	2.6	7.6	0.6
1997	4 366	6 981	282	6 699	4.6	3.0	2.8	2.9	1.7
1998	4 058	11 039	370	10 669	7.3	2.8	1.6	0.9	1.6
1999	19 953	30 992	549	30 443	20.8	13.6	2.9	4.9	8.0
2000	59 257	90 249	975	89 274	61.5	40.8	2.9	3.0	23.7
2001	88 422	178 671	2 095	176 576	122.3	61.3	2.0	1.5	35.4
2002	50 378	229 049	3 164	225 885	156.9	35.0	1.3	0.6	20.2
2003	20 869	249 918	3 452	246 466	171.2	-	1.1	-	8.4

TABLE 3:
OFFICIALLY REGISTERED HIV CASES BY REGION OF THE RUSSIAN FEDERATION
1 JANUARY 1987 THROUGH 4 AUGUST 2003
REGIONS SORTED BY REGISTERED NUMBER OF HIV CASES
(based on data from the Russian Federal AIDS Centre)

Rank	*Region*	(State Statistics Committee data)	Registration date (Fed AIDS Centre or MSF-H/*AFEW* data)	Cumulative Registered HIV Cases 4 Aug 2003	# of Deaths among PLWHA	Registered # of PLWHA	Prevalence per 100 000 4 Aug 2003
	Russian Federation	***143 954 400***	***1987***	***248 005***	***3 452***	***244 553***	***170***
1	Moscow Oblast	6 409 700	until 1996	20 944	48	20 896	326
2	St. Petersburg	4 596 200	1987*	20 788	160	20 628	449
3	Sverdlovsk Oblast	4 544 900	1991*	20 770	439	20 331	447
4	Samara Oblast	3 258 700	1987*	18 109	87	18 022	553
5	Moscow (city of)	8 539 200	until 1995	15 248	162	15 086	177
6	Irkutsk Oblast	2 712 900	until 1996	15 113	84	15 029	554
7	Chelyabinsk Oblast	3 628 700	1990*	12 146	40	12 106	334
8	Orenburg Oblast	2 199 400	1996	10 748	6	10 742	488
9	Khanty-Mansi Autonomous Oblast	1 423 800	until 1996	7 711	215	7 496	526
10	Leningrad Oblast	1 649 600	until 1996	6 203	9	6 194	375
	Total for above 10 regions	***38 963 100***	***NA***	***147 780***	***1 250***	***146 530***	***423***
11	Tyumen Oblast	3 272 200	until 1996	5 993	219	5 774	176
12	Kemerovo Oblast	2 940 500	1992*	5 611	118	5 493	187
13	Ulyanovsk Oblast	1 439 600	until 1996	5 520	196	5 324	370
14	Saratov Oblast	2 676 400	until 1996	5 508	12	5 496	205
15	Republic of Tatarstan	3 768 200	1989*	5 416	62	5 354	142
16	Krasnoyarsk Krai	3 015 300	1989*	4 923	69	4 854	161
17	Perm Oblast	2 923 700	until 1996	4 677	1	4 676	160
18	Primorsky Krai	2 124 700	1989*	4 444	16	4 428	208
19	Kaliningrad Oblast	943 200	1988*	4 171	57	4 114	436
20	Krasnodar Krai	4 987 600	1989*	4 098	10	4 088	82
21	Tver Oblast	1 552 300	until 1996	3 671	4	3 667	236
22	Volgograd Oblast	2 636 500	1987*	3546	69	3 477	132
23	Republic of Bashkortostan	4 090 600	until 1996	3 470	121	3 349	82
24	Altai Krai	2 621 000	until 1996	2 881	100	2 781	106
25	Tula Oblast	1 690 000	until 1996	2 806	121	2 685	159
26	Nizhegorodsky Oblast	3 598 300	until 1996	2 724	89	2 635	73
27	Rostov Oblast	4 286 200	1989*	2 646	143	2 503	58
28	Ivanovo Oblast	1 191 200	until 1996	2 110	4	2 106	177
29	Republic of Udmurt	1 616 200	1998	1 939	16	1 923	119

Rank	*Region*	(State Statistics Committee data)	Registration date (Fed AIDS Centre or MSF-H/*AFEW* data)	Cumulative Registered HIV Cases 4 Aug 2003	# of Deaths among PLWHA	Registered # of PLWHA	Prevalence per 100 000 4 Aug 2003
30	Republic of Buryatia	1 019 400	1990*	1 852	109	1 743	171
31	Homeless	NA	NA	1 510	17	1 493	NA
32	Ryazan Oblast	1 255 000	1991*	1 490	77	1 413	113
33	Kurgan Oblast	1 074 400	1997	1226	7	1 219	113
34	Chita Oblast	1 237 200	1996	1 211	4	1 207	98
35	Vladimir Oblast	1 573 900	until 1996	1175	2	1 173	75
36	Murmansk Oblast	977 600	1990*	1 153	8	1 145	117
37	Yamalo-Nenetsky Autonomous Oblast	508 900	until 1996	822	29	793	156
38	Kaluga Oblast	1 058 900	1989*	783	37	746	70
39	Yaroslavl Oblast	1 386 300	until 1996	680	21	659	48
40	Penza Oblast	1 504 100	1989*	677	32	645	43
41	Tomsk Oblast	1 060 800	1996	667	30	637	60
42	Orel Oblast	883 500	1987*	638	39	599	68
43	Bryansk Oblast	1 410 300	1989*	618	11	607	43
44	Novosibirsk Oblast	2 717 400	1989*	609	12	597	22
45	Kostroma Oblast	766 400	until 1996	608	16	592	77
46	Vologda Oblast	1 301 100	1995*	591	12	579	45
47	Khabarovsk Krai	1 485 800	1992*	560	5	555	37
48	Novgorod Oblast	710 900	until 1996	499	3	496	70
49	Republic of Komi	1 117 200	until 1996	441	12	429	38
50	Republic of Chuvash	1 346 300	1992*	409	19	390	29
51	Republic of Ingushetia	466 300	1999	396	10	386	83
52	Republic of Sakha (Yakutia)	982 900	1997	343	10	333	34
53	Republic of Mary El	750 300	1997	342	7	335	45
54	Chechnya	624 600	until 1996	319	5	314	50
55	Smolensk Oblast	1 098 300	until 1996	309	18	291	26
56	Republic of Dagestan	2 179 500	until 1996	300	24	276	13
57	Republic of North Ossetia	678 200	1997	297	13	284	42
58	Republic of Mordovia	910 000	1997	294	6	288	32
59	Tambov Oblast	1 240 700	until 1996	289	9	280	23
60	Stavropol Krai	2 642 600	1987*	279	27	252	10
61	Belgorod Oblast	1 498 000	until 1996	262	15	247	16
62	Voronezh Oblast	2 414 700	until 1996	234	11	223	9
63	Omsk Oblast	2 127 000	1996	207	1	206	10
64	Republic Karelia	756 400	1994*	193	0	193	26
65	Pskov Oblast	778 000	until 1996	177	9	168	22

Rank	*Region*	(State Statistics Committee data)	Registration date (Fed AIDS Centre or MSF-H/*AFEW* data)	Cumulative Registered HIV Cases 4 Aug 2003	# of Deaths among PLWHA	Registered # of PLWHA	Prevalence per 100 000 4 Aug 2003
66	Kursk Oblast	1 284 500	1997	155	0	155	12
67	Astrakhan Oblast	1 008 700	until 1996	145	14	131	13
68	Republic of Kalmykia	305 600	1988*	143	61	82	27
69	Kirovsk Oblast	1 560 000	until 1996	139	8	131	8
70	Republic of Kabardino-Balkar	782 000	until 1996	137	4	133	17
71	Ust Ordynsky Buryatsky Autonomous Oblast	142 500	1999	113	1	112	79
72	Arkhangelsk Oblast	1 428 900	1992*	105	6	99	7
73	Republic of Adygea	444 900	1996	102	0	102	23
74	Republic of Khakassia	575 400	1997	92	2	90	16
75	Amursk Oblast	982 200	until 1996	90	1	89	9
76	Lipetsk Oblast	1 228 900	1993*	80	3	77	6
77	Sakhalin Oblast	584 700	1993*	72	1	71	12
78	Kamchatka Oblast	380 200	1996	43	0	43	11
79	Taimyr Autonomous Oblast	44 300	1998	40	1	39	88
80	Republic of Altai	204 900	1996	33	1	32	16
81	Magadan Oblast	229 200	1996	31	1	30	13
82	Republic of Karachaevo-Cherkes	428 600	1999	31	2	29	7
83	Republic of Tyva	310 300	until 1996	14	1	13	4
84	Komi-Permyak Autonomous Oblast	147 800	2000	13	0	13	9
85	Jewish Autonomous Oblast	194 600	1999	11	0	11	6
86	Chukotsky Autonomous Oblast	73 800	1998	5	0	5	7
87	Aginsky Buryatsky Autonomous Oblast	79 600	2003	4	0	4	5
88	Koryak Autonomous Oblast	28 500	until 1996	3	1	2	7
89	Evenki Autonomous Oblast	18 200	2001	2	0	2	11
	Total:	**248 005**	**1987**	**248 005**	**3 452**	**244 553**	**170**

Vulnerable Groups

Globally, prevention efforts are designed to reach specific segments of populations, addressing various behavioral changes which reduce the potential to contract and/or transmit HIV/AIDS. The epidemic in the RF has been primarily isolated among injecting drug users (IDUs), with as many as 90% of all cases during the early growth of the epidemic attributed to the sharing of injection equipment such as needles and/or syringes (Russian Federal AIDS Centre 2002). This, however, reflects those cases where the route of transmission has been determined and/or reported, and reflects only those cases which have been registered (see Table 4). Prevention efforts within the region have addressed multiple risk factors and attempt to reach particular groups perceived to be most at risk for HIV, including IDUs, sex workers, young persons, prisoners, and more recently women living with HIV/AIDS (WLWHA) and pregnant women. The following sections describe characteristics of specific vulnerable groups in the RF and some of the particular contextual aspects prevention and education efforts must take into account to successfully slow the burgeoning epidemic.

TABLE 4:
OFFICIALLY REGISTERED HIV CASES BY SELECT GROUPS IN THE RUSSIAN FEDERATION
31 DECEMBER 2002
(based on data from the Russian Federal AIDS Centre[12])

Route of Transmission	# of Registered Cases[13]	Prevalence per 100 000 Population[14]	Percent of all Registered Cases[15]
IDUs	75 127	3 111.0	32.8%
Gay and Lesbian	118	368.8	0.005%
STI Patients	11 566	201.6	5%
Pregnant Women	7 088	114.7	3.1%
Incarcerated Persons	37 484	1 019.2	16.4%
Total	***229 049***	***156.9***[16]	

[12] Russian Federal AIDS Centre, *HIV Infection Information Bulletin*, 25 (2003), Moscow: Russian Federal AIDS Centre.

[13] Figures here represent cases reported based on antibody testing, and are provided from 1 January 1994 through 31 December 2002.

[14] Figures here represent the prevalence provided at the end of 2002 only, and is based on the population undergoing HIV testing.

[15] Figures here are based upon cumulative registered cases as of 31 December 2002.

[16] This figure is based on the population of the RF according to official statistics, and is based on calculations from the Epidemiology Department of *AIDS Foundation East-West (AFEW)* using data from the Russian Federal AIDS Centre, 31 December 2002.

Injecting Drug Users (IDUs)

Injecting drug use has been the primary route of transmission identified among those officially registered as living with HIV/AIDS in the RF, and is the result of sharing injecting equipment. The exact extent of drug use is difficult to determine accurately regardless of context or country. In the RF, however, most officials and international experts perceive drug use, particularly injecting drug use, on the rise in the post-Soviet transition period with currently registered figures suggesting roughly 450,000 drug users (Rhodes et al. 2002a), although one Russian Interior Ministry official stated in 2002 that the number of drug users stood between 3 and 4 million – 20 times the official 1992 figure (Walsh 2002). Drug users in the region tend to be young (most studies indicate initial injection at 18 to 20 years old), male, lacking a legal source of income, to have been imprisoned for at least one night, to live in major regional cities (although recent evidence points to increasing diffusion to rural areas) and to be less likely to use condoms consistently compared with other groups (Rhodes et al. 2002b).

A synthesis of 63 rapid assessment reports conducted between 1998 and 2000, found that between 9% and 95% of IDUs had shared equipment, with between 40% and 70% of most urban-dwelling IDUs reporting sharing (frost et al. 2000). Throughout the region, and in a relatively short amount of time, numerous studies have suggested that HIV prevalence exceeds 50% among IDUs (Rhodes et al. 2002). International evidence indicates that once prevalence reaches 10 to 20% among a particular segment of the population, the epidemic tends to self-perpetuate itself whereby even moderate risk behaviors lead to substantial rates of infection.

Further compounding the HIV/AIDS situation, as well as other infectious disease epidemics in the country such as hepatitis B and C viral strains, draconian laws related to narcotic possession and trafficking drive 'at-risk' groups further underground and impede prevention efforts as well as the promotion of health-seeking behaviors which could slow the pace of growth of the HIV epidemic among IDUs. For example, individuals identified as drug-dependent are often forced into compulsory treatment in prison-like facilities run by the police. Legislation governing prison sentencing for the possession of what officials deem 'large quantities' – that is, up to 0.005 grams of heroin or 0.05 grams of hashish or marijuana (amounts insufficient for a single dose) – recommend 2 to 7 year sentences for individuals who buy, possess, transport and/or store a 'large' quantity of illegal drugs. Needle sharing and HIV infection are rampant in the Russian prison system.

The prevalence of IDU transmission is giving rise to a mis-placed complacency among experts, many of whom assert that the epidemic is 'isolated' among IDUs. When the route of transmission is known or determined, injecting drug use prevails. However, given the overlaps between multiple risk factors—that is, drug use, the so-called 'sexual revolution' enjoyed by young people in the post-Soviet era, limited use of condoms and/or safer sex practices across all sectors of society—it is realistic to postulate that transmission route figures are distorted. Many domestic and international experts believe that heterosexual transmission is rising at a rate higher than that reported in official statistics.

Sex Workers

In the post-Soviet era, a 'sexual revolution' has taken place in tandem with the rapid social, political and economic transitions. Changing sexual patterns have been accompanied by unstable if not uncertain employment, forcing many young girls and women to enter into occasional or formal sex work to supplement meager incomes (Konings 1996). Given the stigma associated with sex work, as well as the risk of arrest, many sex workers are reluctant to seek medical testing and/or services for sexually transmitted infections (STIs) including HIV/AIDS. Related to the rise in formal sex work is the increasingly reported phenomenon is f the exchange of sexual 'gifts' for remuneration – be it monetary, material or otherwise among women in the RF. In one such study among female detainees, 47.5 percent of those surveyed had exchanged sex for money or other commodities while only 20 percent of these self-identified as sex workers (Shakarishvilli et al. 2002).

Sex work in the RF is highly varied in structure depending upon the context in which services are solicited, and in terms of geographic and neighborhood location. However, based on existing descriptive studies, sex work can be categorized along roughly three tiers. The 'lowest' tier involves individuals who work alone and generally are street-based or work in railway stations. This group is characterized by frequent migration, is more likely to inject drugs, and rarely if ever use condoms. Thus, rates of STIs and HIV tend to be greatest amongst street-based sex workers. Access to treatment services is generally low, and levels of risk behavior, such as unsafe injecting behavior and sexual risk, tend to be highest. The second group of sex workers includes those who work in groups primarily in saunas, apartments or on the street. This group is characterized by an increasing level of professionalism, is more 'closed' to the public eye depending upon the particular work venue. Anecdotal evidence points to prevalent drug use, although injecting is less common. With an increased level of access to STI and general health services, primarily through privately financed clinical services, treatment for STIs is generally greater than among individual street-based sex workers although somewhat limited for those who migrate from another region. Finally, 'elite' sex workers tend to provide services through hotels, are unlikely to be IDUs, and have relatively good access to health services although they tend to be the hardest group to access through prevention and/or outreach activities.

Sex worker populations tend to be transient, and often may not have access to health care because they lack the prerequisite residency documents. Many sex workers report waiting until returning to their homes to seek publicly financed (i.e., free) testing, treatment, or services for STIs, which if present, increase their risk of contracting HIV. Figures related to the prevalence of HIV among this particular vulnerable group are at best under-estimates. In Moscow alone, some estimates suggest that as many as 15% of sex workers are HIV positive.

Moscow has the largest concentration of sex workers in the RF, and most are street-based. Among street-based sex workers, a high proportion were identified as homeless, with 52% of women surveyed stating that they exchanged sex for money, and 19% of male sex workers surveyed acknowledging the exchange of sex for drugs (Shakarishvilli et al. 2002). Drug use and sex work are often discussed as dual risks, although determining which pre-dates the other is often difficult at best. Across the RF, most studies suggest that between 15% and 50% of female IDUs are involved in sex

work (Dehne and Kobyshcha 2000, Rhodes et al. 2002b). Disturbingly high rates of HIV infection have been found amongst St. Petersburg and Togliatti IDUs who regularly engage in sex work, whereby 57% of IDU sex workers were found to be HIV positive compared to 17% of non-IDU sex worker (Lowndes et al. 2002). Some argue that 4 of every 5 HIV positive women in the RF were involved in both sex work and drug use (Smolskaya et al. 2000).

Condom use among sex workers is highly variable across both study sites and type of sex work. Experts agree that street-based sex workers are in a more vulnerable position with their clients and are often unable to negotiate condom use. One study (Nashkoev 2002) reported that 60% of Moscow respondents stated that their clients refused to wear a condom, while another study (Losevo and Nashkoev 1999) reported that clients would pay more for services provided without a condom.

Prisoners

The RF ranks second in the world only to the US in terms of the number and proportion of the population incarcerated, with an annual turnover of roughly 5 million individuals. The Russian penal system is characterized by depleted financial and human resources, over-crowding and unsanitary conditions, and increasing prevalence of tuberculosis (TB), HIV/AIDS, and drug use.

As with any particular vulnerable group, considerable over-lap exists and clear demarcation is near impossible. Any discussion of incarcerated persons in the RF must also examine the inter-relationship between drug use and those imprisoned on drug-related crimes. Given that drug use is on the rise in the RF (see above), there has also been an increase in the number of IDUs within the Russian penal system. Similar to the situation with IDUs in the RF, sharing of injection equipment is widespread within the Russian prison system, with sharing reported by between 22% and 65% of inmates (Frost et al. 2001). One report from Tuymen oblast found that roughly one-third of young persons initiated drug use while incarcerated (UNDCP/WHO 2001). Furthermore, inmates often engage in risky sexual behavior given that condoms are rarely available to them.

In a lecture delivered at King's College, University of London in November 2002, Deputy Minister of Justice of the RF Yuri Kalinin acknowledged that approximately 20% of all registered inmates were HIV positive. Furthermore, he recognized the need for more sustained efforts to improve the medical treatment of incarcerated persons, particularly with regards to the high incidence of TB in the Russian penal system, whereby approximately 1 in 10 inmates suffers from TB, of whom 30% suffer from multi-drug resistant (MDR) TB (Schwalbe 2002). Co-infection with HIV and TB are particularly disturbing. Those with HIV are more susceptible to TB as their immune systems weaken. Likewise, TB may facilitate the rapid progression of HIV to AIDS. Given the likelihood of co-infection with HIV and MDR-TB, prisoners once released into society carry both back to their communities.

Young Persons

One of the more insidious aspects of the HIV pandemic is its devastating impact on young persons. The epidemic in the RF is particularly felt among those under the

age of 30. Through 2002, more than 80% of all registered cases had occurred among 18- to 25-year olds (Yates 2002). This undoubtedly has serious implications for the future of the Russian population, already characterized by excess adult mortality and population decline. The 'sexual revolution' enjoyed by Russian youth has translated into increasing sexual activity with a greater number of partners and initiation of sexual activity at a younger age (Chervyakov and Kon 2000).

Knowledge regarding perceived risk of HIV and STIs influences safer sexual behaviors, such as condom use, delayed initiation of sexual careers, and the number of different partners over time. Knowledge regarding known routes of transmission in the RF among youth appears to be inadequate. In a St. Petersburg survey among youth, respondents cited that HIV could be transmitted through kissing (48%), through mosquito bites (56%), and through sharing cigarettes (29%). Among them, unprotected vaginal sex predominated. Furthermore, these same adolescents on average indicated having 3 to 4 different sexual partners during their relatively short sexual careers. Likewise, in a Moscow survey (Frost and van de Braak 2001), young people believed it was possible to contract HIV through kissing or saliva (30%), that STIs were transmitted through saliva (64%), and that HIV could be 'caught' from toilet seats (12%).

As discussed by Andriouchina elsewhere in this report, STIs have increased during the transition period, particularly syphilis among young persons. The presence of STIs not only indicates low levels of condom use, but also fosters the spread of HIV. In a climate that perceives discussions of sexuality and sexual health generally taboo, youth-friendly family planning and sexual health education are rarely available. Prevention efforts are further impeded by a relative lack of appropriate, targeted information materials on safer sex behaviors. Sexual health education lectures, classes or seminars are rarely available in the Russian school system, for example, in a 1997 survey, only 22% of 16-year-old students reported receiving any form of sex education (Chervyakov and Kon 2000). In one survey among youths regarding the dangers of HIV/AIDS and drug use, including risks associated with the transmission of HIV, less than 2% of young persons (17 and 18 years) surveyed had a 'satisfactory knowledge' regarding the nature of drug use and AIDS (*ibid.*, Kramer 2000). For young people, particularly students, condoms may be prohibitively expensive. Whilst condoms are widely available in street kiosks and pharmacies, the cost of high-quality condoms (that is, imported, Western brands) may limit a young person's ability to purchase and use them.

Given that much of the public attention on the epidemic in the mass media has been devoted to IDUs and more recently sex work, there is a common misconception that HIV is transmitted solely through injecting drug use or 'prostitution'. This is particularly dangerous given that if an individual does not inject or engage formally in sex work , they do not perceive any personal risk of contracting HIV. In one study (AIDS Foundation East-West 2001), knowledge among youth of how HIV was transmitted was relatively high, but the perceived risk of becoming infected was surprisingly low. Thus, safer sexual practices may not be thought of as necessary among non-injecting youth.

Mother to child transmission

By the end of 2002, 58% of all women living with HIV/AIDS (WLWHA) were between 20 and 30 years (see Figure 1). Thus, MTCT will increasingly affect Russia's children. The registered number of children living with HIV/AIDS (CLWHA) in the RF as of 1 September 2003 stood at 7 589 (Russian Federal AIDS Centre 2003). Among these, 6 301 children were born to HIV positive mothers, growing from the 6 born in 1996 (see Figure 2).

FIGURE 1:
AGE DISTRIBUTION OF WLWHA IN THE RUSSIAN FEDERATION
AS OF 31 DECEMBER 2002
(based on data from the Russian Federal AIDS Centre)

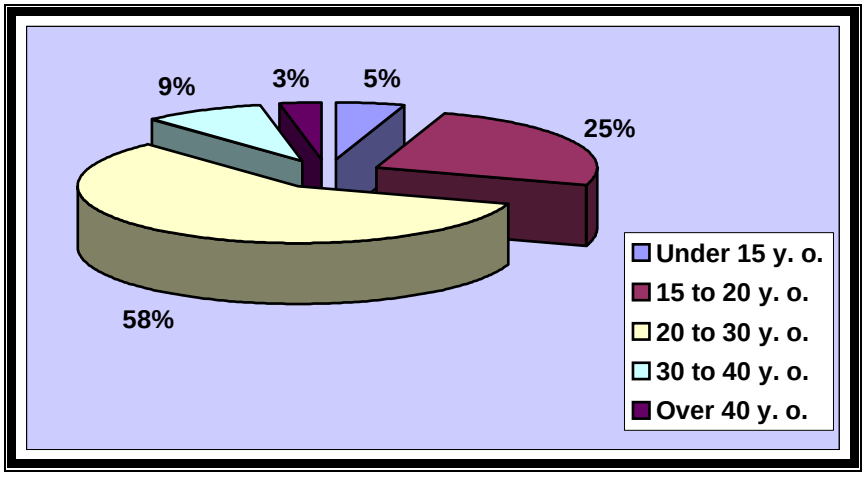
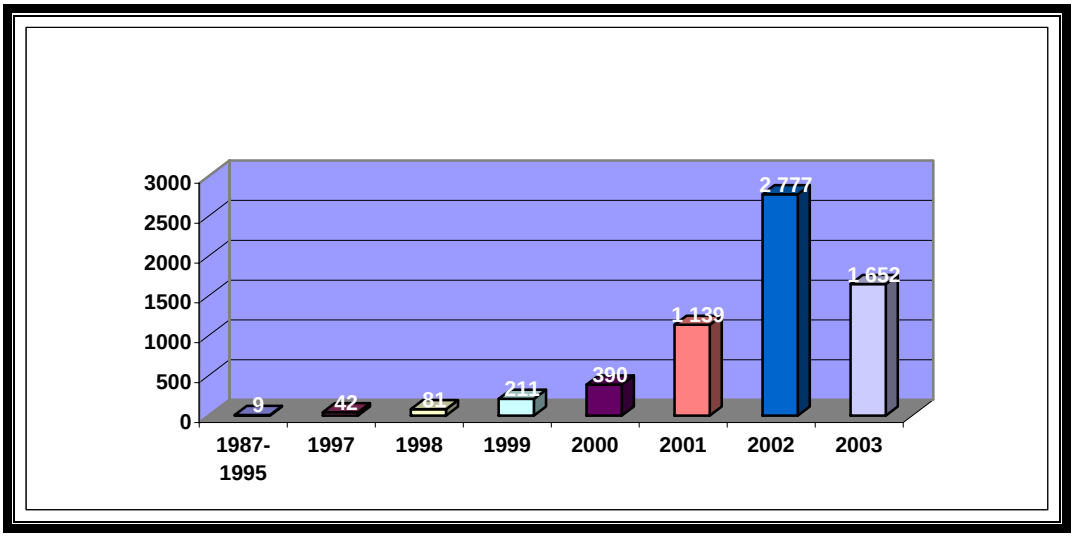


FIGURE 2:
CHILDREN BORN TO WLWHA IN THE RF
1 JANUARY 1987 THROUGH 1 SEPTEMBER 2003
(based on data from the Russian Federal AIDS Centre)



All children born to HIV positive mothers in the RF are assumed to have a preliminary diagnosis of HIV, which is later withdrawn in the majority of children by the age of 3 once they test sero-negative. According to data from the Russian Federal AIDS Centre, a diagnosis of HIV is confirmed on average in 19.5% of children. This figure is considerably lower in regions where antiretroviral (ARV) therapy as a prevention method for perinatal transmission is used and/or available. The rates of infection in these regions average 9.5%.

There may be significant under-reporting of the number of CLWHA given that potentially infected women belonging to the most vulnerable groups–that is, IDU and sex worker populations–may not attend antenatal services. In the RF, 25 to 40% of all HIV-positive women who delivered a baby did not register the pregnancy and did not seek prenatal care (Ministry of Health of the Russian Federation 2002). In such cases, HIV/AIDS is detected only during delivery, a time when vertical transmission is highly likely. If pregnant WLWHA do not present prior to delivery, prevention efforts may be hindered.

Anecdotal evidence suggests that medical professionals are not well trained nor do they have an understanding of the latest medical innovations for treating pregnant WLWHA. Therefore, prevention of MTCT efforts need to address the needs not only of parents-to-be, but also health care professionals who may provide services to them.

Policy response

Significant opportunities were missed during the early stages of the HIV/AIDS epidemic in Russia:

- High level political acknowledgement of the epidemic occurred far too late, with President Vladimir Putin first publicly mentioning the subject only in his Annual Address to the Russian Federal Assembly in May 2003.
- In the early stages of the epidemic, scarce resources were expended on ineffective large-scale HIV antibody screening programs, with nearly 20 million tests performed annually (Medvedev 2000, Pokrovsky 1994). Mass screening of vulnerable groups such as IDUs stigmatized the disease and drove those most at risk away from testing centers. , as well as giving rise to an "It can't happen to me" attitude among the public. Counseling services were largely unavailable.
- The Ministry of Health's AIDS program was vertical and highly centralized; links with education, sexually transmitted infections, prisons, etc. were not exploited.
- Sociological and behavioral research and programs were rare and mostly conducted by non-governmental organizations (NGOs).

While the policy situation has improved markedly, Russian legislation still impedes prevention efforts among those most vulnerable to HIV. Despite the fact that international best practice and regional studies within the RF repeatedly demonstrate the effectiveness of harm reduction (HR) activities among IDUs, existing legislation at times prohibits these activities. Local Russian HR activities, funded by international donor organizations, provide clean needles and syringes in exchange for used drug

paraphernalia, educate and advocate for safer injecting practices, while at the same time seek to reduce the demand for drugs, and advocate for legislative change towards the use of methadone as a therapeutic substitute for heroin. Some of these efforts are hampered by policy makers and law enforcement officials who see the distribution of clean needles and syringes as promoting drug use and activities that are deemed illegal under existing legislation rather than offering ways in which to reach an already hard-to-reach population. This points to the need to provide justification through the evaluation of existing prevention activities to high-ranking Russian officials of the applicability of international practices to the Russian context.

There has been somewhat more success with efforts to curb the co-epidemics of TB and HIV/AIDS within the prison system. During the last several years, AFEW as well as other domestic and international NGOs have been involved in reforms implemented jointly with the Ministry of Justice, the Ministry of Health, and local-level administrators from select prison colonies and pre-trial detention centres. In the words of Deputy Minister of Justice Yuri Kalinin, 'the introduction of HIV/AIDS prevention programs in Russia's penal institutions enables us to supply our staff and prisoners with reliable and effective information on this problem, including methods of 'risk reduction', and to provide support for those already identified as HIV positive. With acknowledgement from one of the highest-ranking members of the Ministry of Justice, pilot programs in the prison system have been scaled-up to additional facilities throughout the country. This is one small success, but also illustrates the importance of demonstrating effectiveness to decision-makers. Thus, rather than focusing on the classic dichotomy in the global pandemic as 'North-South', East-West models need to be created and expanded to meet the needs of the Russian Federation.

Prevention efforts focused on behavioral change have been funded mostly by foreign sources and carried out on local levels. These local initiatives are not only under-financed, but because they rely mostly on international donor programs, efforts are focused on outputs rather than outcomes to satisfy donor requirements. Given that the Russian public has yet to acknowledge or even understand the effectiveness of such policies being imported from abroad and adapted to local contexts, and may not be able to access English-language materials documenting their effectiveness, evaluation in the Russian context is key to not only understanding effectiveness once adapted, but also to gain the level of support and commitment of the government. This requires further investment – both from domestic and international counterparts. Furthermore, this effectiveness must be accessible to those working with vulnerable groups as well as with local, regional and national level policy and decision-makers in order to increase action, change legislation and secure funding necessary for meeting the growing needs for the Russian population.

Further deterioration of the HIV / AIDS situation can be avoided only by increased financial and political commitment from the Russian government as well as increased resources from international donors. The stark fact is that the HIV/AIDS policy response in the RF stands at a critical point. Voluntary counseling and testing (VCT) and treatment, school-based education programs, sentinel surveillance, HR activities for those most vulnerable, and mass media campaigns have not been accomplished on a level anywhere near commensurate with the scale and pace of the epidemic. Russian HR programs are estimated to reach only 11% of those at risk; only 16% of those who need it have access to STI treatment; AIDS awareness programs

reach only 19% of those at risk, and VCT services are available to only 28% (Global HIV Prevention Working Group 2003).

Despite these daunting statistics, the outlook is not entirely negative. The RF has the opportunity to learn from the experience of countries that have dealt with the epidemic much earlier. Strengths of the Soviet past, including one of the world's highest literacy rates, an ideology which views health as a human right, a relatively well-developed health infrastructure, and what was once one of the most accessible primary health care systems in the world, provide exceptional springboards from which to broaden prevention, treatment, care and support efforts. However, the window of opportunity is rapidly closing to prevent a massive explosion of the HIV/AIDS epidemic in the Russian Federation.

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Reproductive Health

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The salient aspects of the current reproductive health situation in Russia are a significant drop of fertility and an alarming deterioration in mother and child health.

Fertility decline

As illustrated in Table 1, since the pre- transition years in Russia the number of births per 1,000 has mainly declined. Despite of increases in 1994, 2000 and 2001, over the period 1986 - 2001 the total crude birth rate was reduced by almost half (from 17.2 to 9.1 per 1,000). Thus, having been at roughly replacement level (ca. 2.1) in 1985 - 1986, the total fertility rate in Russia was estimated to be less than 1.3 in 2001 **(**Table 2**)**.

Table 1. The Number of Births. Russia. 1985-2001

Years	Births, persons			Births, per 1,000 population		
	Total	Urban population	Rural population	Total	Urban population	Rural population
1985	2375147	1666673	708474	16,6	16,1	17,8
1986	2485915	1749905	736010	17,2	16,7	18,6
1987	2499974	1769032	730942	17,2	16,6	18,6
1988	2348494	1662029	686465	16,0	15,4	17,6
1989	2160559	1520741	639818	14,6	14,0	16,4
1990	1988858	1386247	602611	13,4	12,7	15,5
1991	1794626	1230516	564110	12,1	11,2	14,5
1992	1587644	1068304	519340	10,7	9,8	13,2
1993	1378983	930530	448453	9,4	8,6	11,5
1994	1408159	960413	447746	9,6	8,9	11,4
1995	1363806	933460	430346	9,3	8,6	10,9
1996	1304638	897898	406740	8,9	8,3	10,4
1997	1259943	870213	389730	8,6	8,1	10,0
1998	1283292	887669	395623	8,8	8,3	10,2
1999	1214689	842640	372049	8,3	7,9	9,6
2000	1266800	886908	379892	8,7	8,4	9,8
2001	1311604	928642	382962	9,1	8,8	9,9

Source: The Demographic Yearbook of Russia. Goskomstat of the Russian Federation. 2002. 55-57 p.

Table 2. Total fertility rate. Russia. 1985-2001

Years	Total population	Urban population	Rural population
1985-1986	2,111	1,874	3,003
1986-1987	2,194	1,947	3,162
1988	2,130	1,896	3,057
1989	2,007	1,826	2,630
1990	1,887	1,701	2,526
1991	1,732	1,540	2,384
1992	1,552	1,362	2,177
1993	1,385	1,215	1,935
1994	1,400	1,249	1,892
1995	1,344	1,207	1,788
1996	1,281	1,158	1,677
1997	1,230	1,118	1,586
1998	1,242	1,133	1,580
1999	1,171	1,072	1,479
2000	1,214	1,125	1,487
2001	1,249	1,173	1,481

Source: The Demographic Yearbook of Russia. Goskomstat of the Russian Federation. 2002. p. 94.

Fertility decline depends on a number of general and specific factors. In the West, it has much reflected increasing participation of women in the labor force, preference for leisure and consumption goods as opposed to children, the decline of the old-age security motive as old-age pension systems have developed, etc. The Russian fertility decline, by contrast, is related mostly to economic transition, and in this respect, bears some resemblance to the very low fertility experienced in Europe and the United States during the Great Depression of the 1930s.

Deteriorating reproductive health indicators

Despite the measures being taken in order to improve the health care system for pregnant women and children in Russia, during the transition process there has been deterioration in most indicators of mothers' and child health, especially at the beginning and mid 1990's. The situation in this sphere is still alarming. Pregnancy and delivery pathology became one of the primary factors aggravating the unfavorable fertility trends in Russia during the transition. The incidence of delivery complications has steadily grown to the point where only one third of all deliveries could be considered normal (Figure 1). As compared to 1992, in 2002 the share of normal deliveries in the Russia Federation diminished from 45.3% to 31.7%. The most common complication was anemia, which grew from 65.1 per 1000 deliveries in 1990 to 272.7 per 1,000 in 2001. According to Ministry of Health data for the period 1990-2002, the frequency of anemia among pregnant women (Figure 2) increased from 12.8% to 42.8%, diseases of the circulatory system from 5.1% to 10.2%, diseases of the urogenital system from 5.9% to 19.4%, late toxicosis from 8.9% to 20.2%. Outcomes of a study (Russia, 1998-2000) show an established perception of pregnancy as rather pathological as normal physiological phenomenon. 26.9 percent of women surveyed regarded the chances that their pregnancy would be complicated as "high" and another 31.6 percent regarded pregnancy complications as "quite possible" (Katkova I.P. et al. 2002).

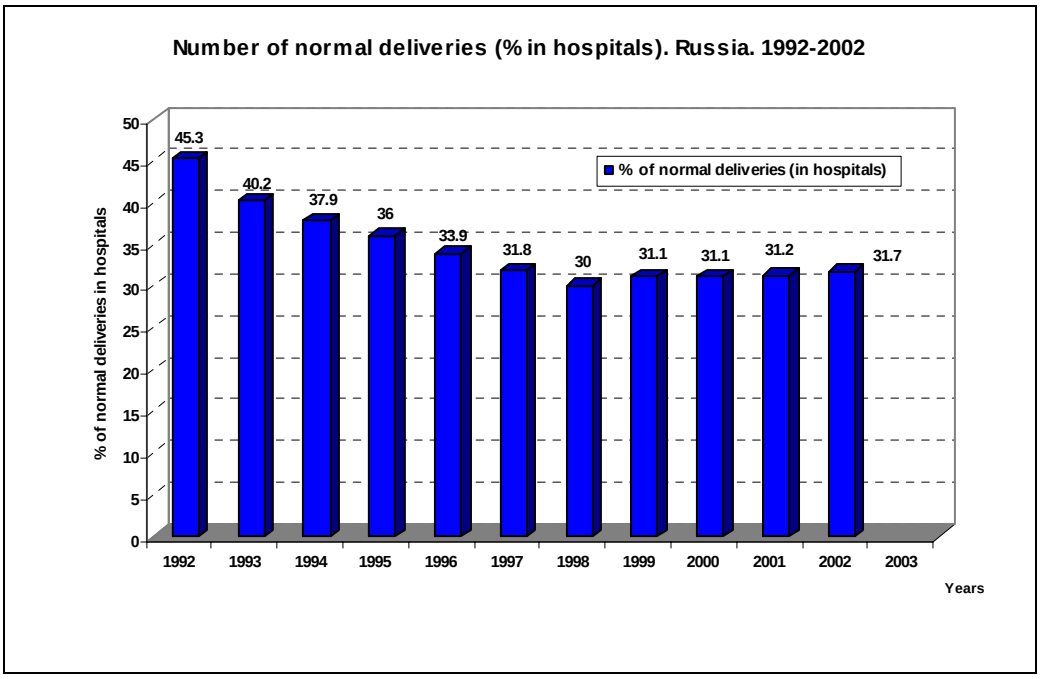

Figure 1. Number of normal deliveries (% in hospitals). Russia, 1992-2002.
Source: Official statistical materials of the Ministry of Health Care of the Russian Federation

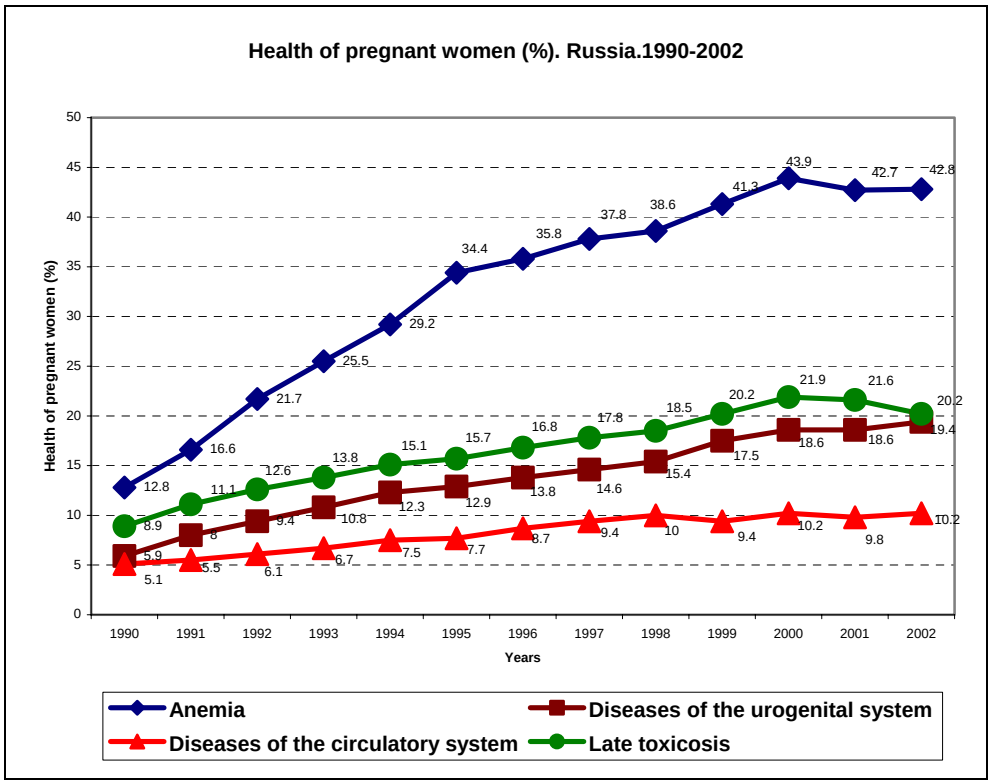

Figure 2. Health of pregnant women (%). Russia, 1990-2002.
Source: Official statistical materials of the Ministry of Health Care of the Russian Federation

Pathological pregnancies are accompanied by high risk of infant death or children disability. During the transition, Russia experienced a sharp deterioration in the health of the newborn (Rimashevskaya N.M et al. 2000). For instance, according to data of the Ministry of Health Care of the Russian Federation (Figure 3), in 1992 only one out of five infants was born sick or fell sick soon after birth, while in 2002 the figure was even worse than one out of two (or 5908.2 per 10,000 live births). The rate of congenital malformations of the newborn was 293.4 per 100,000 in 1999 as compared to 187.5 per 100,000 in 1991 and that of haemolytic diseases, 93.2 per 100,000 and 61.1 per 100,000.

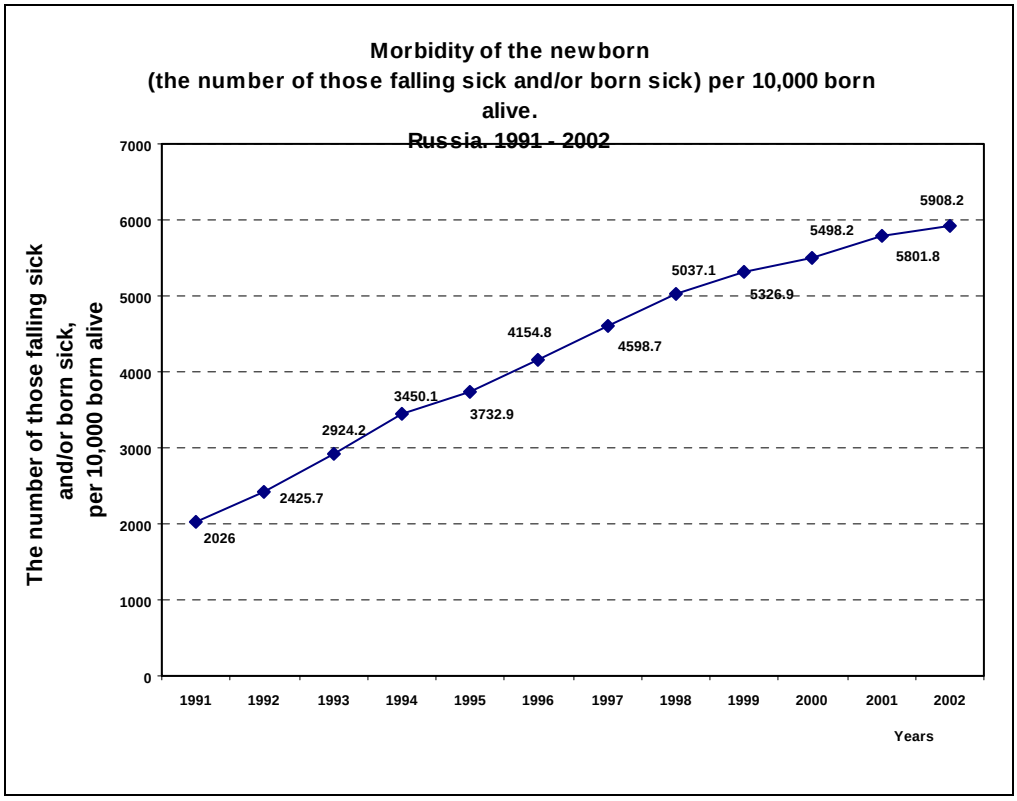

Figure 3. Morbidity of the newborn (the number of those falling sick and/or born sick) per 10,000 born. Russia 1991-2002.
Source: Official statistical materials of the Ministry of Health Care of the Russian Federation

Infant and under-5 mortality rate, despite some improvement during the transition, still remain unacceptably high. The infant mortality rate in Russia, 13.3 per 1,000 in 2002 (according to the Ministry of Health data), is two to three times higher than the rate in highly developed countries (6.4 per 1000 in the US and Italy, 5.7 per 1000 in the UK, 5.7 per 1000 in Germany, 4.1 per 1000 in Japan, etc.). At the beginning of the 2002, two thirds of infant deaths were due to causes related to the situations typical of the perinatal period as well as due to congenital malformations; three-fourths occurred within the first 6 days after birth. There was a shift in the

structure of causes of infant death between 1985 and 1999: conditions of the perinatal period and congenital malformations rose from 55.0% to 64.0%, trauma and poisonings rose from 4.4% to 6.6%, and other causes declined (notably respiratory conditions from 23.0% to 12.0% and infectious and parasitic diseases from 12.0% to 7.0%). In general, deaths from infectious and parasitic causes, as well as from trauma and poisonings, are higher in rural than urban districts; deaths from perinatal conditions, by contrast, are higher in urban regions. In should be noted that infant deaths of from congenital malformations and conditions of the perinatal period, which increased their share, are due to exogenous conditions, i.e., fetal development, genotype, and maternal health (Katkova I.P. et al. 2001).

Worsening reproductive health has not translated into rising maternal mortality. According to the Ministry of Health data maternal mortality fell from 54.0 in 1985 to 33.6 in 2002 (per 100,000 live births). However, the maternal mortality in Russia remains very high relative to other countries.

According to the Ministry of Health data the main cause of maternal mortality (21.1 percent), followed by toxicosis (17.8 percent), hemorrhage during pregnancy or birth (16.5 percent), ectopic pregnancy (5.5 percent) and sepsis during birth (3.8 percent). Abortion-related deaths, 68 percent of them resulting from abortions outside medical institutions, comprise about one-fifth of maternal deaths).

In 1990 the number of abortions in Russia per 1,000 women of reproductive age was 114.0, by 1996 this had been reduced to 69.3, and by 2001, it was only 47.6. However, since the number of births also declined over the period, the ratio of abortions to live births (according to the Ministry of Health data) decreased only slightly from 195.3 in 1990 to 142.2 in 2001 (by 27.2%). In addition to accounting for a substantial share of maternal mortality, abortion is a leading cause of secondary sterility (Rimashevskaya N.M et al. 2001).

According to official statistics data of the Ministry of Health Care of the Russian Federation on the state of health of women within the structure of morbidity, there is a prevalence of respiratory diseases (19%), cardiovascular diseases (19%) and diseases of the digestion system (17%). There is a trend toward a growth of malignant diseases. The major factors are malignant tumors of the reproductive system (per 100,000 of the female population), such as cancer of the breast (57.7), of the uterus (18.8), of the cervix of the uterus (15.8) and of the ovary (14.8).

In the context of the general decline in the population reproductive health, high morbidity in cancer of reproductive system (breast cancer makes up over half of cases) is especially worrying. Over 1980-2000 years morbidity in breast cancer rose from 187.7 cases to 458.4 cases (per 100,000 female population). At the same time the cervical cancer rate declined from 276.2 in 1980 to 219.0 in 2000. The disparity provides indirect evidence that primary breast cancer is being more effectively detected. Although lethality within the first year after diagnosing breast cancer grew slightly, from 10 percent in 1985 to 11.7 percent in 2000, that of cervical cancer declined from 23.4 percent to 20.4 percent, respectively. Both remain at high levels by international comparison. This is mainly due to the fact, that in 38-39 percent of cases, these diseases are diagnosed only at the 3rd or 4th stage. The 5-year survival rate after a diagnosis of cervical cancer is higher than that of breast cancer (79.6 percent vs. 53.9 percent).

Implementation of the special federal state program on oncology has contributed to this improvement.

During recent years there has been an increase of women's diseases such as endometriosis (29.8 percent) and female sterility (5.2 percent). At present more than 15 percent of the marriages suffer from sterility, and the female sterility accounts for 50 to 60 percent of the cases. According to the Health Ministry, in 2000 in Russia the rate of female infertility was 381.7 cases per 100,000 female population aged 18-49. The number of sterile women diagnosed for the first time markedly increased from 41900 in 1990 to 49800 in 2000. These figures reflect only those women who present for medical care, i.e. those who wish to conceive but cannot; however, the figures still help us to assess the scale of the problem.

Adolescent girls have fared particularly badly in recent years. In 1991-1999, the number of menstrual disorders increased 19 times among small girls, 4.8 times among teenage girls and 4.2 times among adult women. Inflammatory diseases of the reproductive system increased a staggering 6.7 times among teenage girls in 1991-99 (as opposed to only 1.4 times in adult women); these diseases affect not only reproductive function, but also the state of the immune system as a whole and have particularly unfavorable consequences if suffered during the teenage period. The main causes of this explosion of inflammatory diseases are precocious sexual activity, a high number of sexual partners, and failure to obtain timely medical care. An in-depth analysis of reproductive rights programs aimed at youth carried out in the city of Taganrog in 1998-2000 found that current medico-social and educational programs, as well as the present network of health institutions, are poorly oriented towards adolescents' reproductive health care needs (Katkova et al. 1999 a, Andriushina et al. 2000).

As has been widely reported, there was a dramatic rise in sexually transmitted infections in the Russian Federation during the first half of nineties. The incidence of syphilis increased 15-60 fold, from 5-15 per 100,000 of population in 1990 to 200-500 per 100,000 population by 1996, with proportionally larger increases occurring among young women. The incidence of congenital syphilis has doubled since 1996, reflecting an increase in the prevalence of untreated syphilis among young women. During recent years the number of notified cases of syphilis, as an indicator of other STIs, decreased significantly but remains at a high level. The prevalence of STIs among young people has increased dramatically. Thus, between 1991 and 1997 the rate of first diagnoses of syphilis among girls aged 0-14 increased by a factor of 70; among girls aged 15-17, the increase was by a factor of 40. In 1997 about 0.8 percent of the children under 14 years, 6.0 percent of the young people aged 15-17, and 9.2 percent of the young people at the age of 18-19 years had syphilis. Syphilis is of special concern in particular because of the role it plays in encouraging transmission of the HIV infection. In recent years, HIV/AIDS transmission has been on the rise, especially among intravenous drug users, commercial sex workers and youth, leading to one of the most precarious epidemics in Eastern Europe. At the beginning of August 2003 248,005 cumulative cases of HIV were reported in Russia. In its response to a 2001 United Nations inquiry, the Government indicated that it viewed AIDS as an area of major concern.

Policy response

Reproductive health policies are enshrined in the Constitution of the Russian Federation, in the Foundations of the Russian Federation Legislation on the Citizens Health Protection (approved in 1993), in other legislation directly or indirectly affecting the reproductive health services, in political decisions, taken by the Government. These policies are in agreement with the basic objectives set out at the International Conferences on Population and Development (ICPD, ICPD+5). However, active reproductive health policy is a relatively new area for the Russian legislative and executive bodies, governmental and non-governmental organizations. The Conception for Demographic Development of the Russian Federation (up to 2015) and the Conception for the Reproductive Health Protection of the Russian Federation (2000-2004) recently adopted by the Government call for improving reproductive health and increasing healthy life expectancy alongside reinforcing the institution of family.

A draft law on reproductive health protection was discussed in the State Duma; however, due to political sensitivity, the law was rejected. In recent years legislative activity has been intensified at both federal and regional levels. Russian lawmakers passed a federal law on HIV/AIDS. In the absence of special federal legal regulations, several Russian regions (such as Ivanovo), adopted special laws on protection of the reproductive health and reproductive rights.

Even in the absence of a comprehensive federal law, a number of national and regional programs in the field of reproductive health have been launched, aimed at improvement of health of the entire population and specific sub-groups ("Safe Maternity", "Disabled Children", "HIV/AIDS Prevention", etc.).

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Suicide

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General

Possible cases of suicide are divided into two basic categories in the cause-of-death statistics. If there is certainty that the case is an intentional suicide, it is classified accordingly (categories E950-959 in the ICD-9 international classification, X60-X84 in the ICD-10, and 173 in the old, Soviet list of causes of death). Alternatively, suicide may be suspected, but if other possibilities cannot be excluded, then the death is classified as being of an ”uncertain intention” (categories E980-989 in ICD-9, Y10-Y34 in ICD-10, and 175 in the Soviet list).

According to WHO estimates, some 800,000 suicides are committed annually around the world. Of these, at least a fourth occur in China. In fact, a large part of the Eurasian continent consists of high-suicide areas. In the Americas, in Oceania, and in Africa suicide rates are generally lower. Suicide usually ranks higher in statistics comparing Potential Years of Life Lost (PYLL) than its share of total mortality because suicide victims are younger than most other deceased. Suicide attempts, estimated to be between 10 and 20 times more numerous than completed suicides, and half of which may result in medical attention being received, also produce a cost in terms of individual suffering, the sometimes incurable physical consequences, and the days spent in medical care.

The WHO counts a suicide rate of more than 20 per 100,000 as being “high.” Rates between 10 and 20 fall in the intermediate class, while those under 10 are regarded as being low. If the global estimate is true, the global rate would be between 13 and 14 cases per 100,000 annually. The Western European average is of approximately the same magnitude, while the rates are higher in the East.

As early as the 19th century, investigators of suicide mortality observed its relative stability. Sudden movements are exceptions; even during conditions of a general increase, such as occurred in Western Europe during the 19th century (Cavan 1928) or decrease, the development is likely to stretch over a number of years. In Western Europe, the suicide trend has mainly been an upward one ever since the 19th century: after the dramatic increases in the 19th-early 20th century, the pace slowed down, however. Even the post-war increases have generally turned into decreases in the 1980s-1990s.

Demographically, suicide mortality seems to follow few rules. It is most common for men to commit suicide more often than women, but even this “rule” has its exceptions in, e.g., rural parts of China. In the more usual, male-dominated cases, the “sex quota” of suicide can vary from two men to each woman (Denmark, Holland) to four and more (Russia, some other NIS countries, parts of South America).

Regarding age patterns, it is most common to find suicide increasing slowly with age from 15 and upwards, and then increasing rapidly from somewhere between 65 and 75 years of age. However, this pattern is not the only one observed. There are countries (Sweden, Russia) where the highest rates tend to occur in middle age (45-55 years) and then decline. In some countries (Poland, the UK) the peak may come even earlier, between 25 and 34 years of age; in yet others, the youngest groups have the highest suicide rates.

The father of sociological suicide research, Emile Durkheim (1992/1897), thought that the levels of suicide mortality in a social unit were determined by a few basic properties of that unit, namely the prevailing degree of egoism (individual-centered social practices indicating the disintegration of collectivity) and anomie (defective regulation of society). However, even their opposites, altruism (extreme group consciousness) and fatalism (totalitarian regulation), were thought to lead to more suicide.

Durkheim's theory remains the most popular of those used in suicide epidemiology (Mäkinen 1997a). Other theories have highlighted, among other things, the effects of social modernization (Halbwachs 1930) and social disintegration (Cavan 1928). More complex models may operate with several variables, such as Mäkinen's (op.cit.) division of cultural, social, political, "international", diffusion, and availability factors in shaping the levels of suicide mortality. The large-scale theories are somewhat difficult to assess, partly because they are not always easily interpretable (Durkheim, e.g., has been criticized for the vagueness of his concepts) and, more importantly, because their complexity may render them impractical for use.

In the medical-epidemiological literature especially, it is not uncommon to find attempts to establish causal links between suicide mortality and different variables such as, e.g., alcohol consumption (Norström 1995), unemployment (Norström 1988), economic conjunctures (Pierce 1971), social mobility, etc. Few definite conclusions can be drawn from these studies, the mixed results of which seem to be influenced by the different socio-cultural contexts in which they take place. A good example is Mäkinen's (1997b) attempt to replicate the study by Sainsbury, Jenkins, and Levey (1980) - practically nothing remained of the postulated "social correlates of suicide" from the earlier study, which comprised 15 social variables in 18 Western European countries.

It must also be added that the prominence of explanations based upon some kind of mental illness leading to suicide (depression being almost invariably mentioned as its first and foremost cause) is somewhat surprisingly not matched by investigations at the collective level. The reason for this may be, apart from the difficulties and variations in defining "depression", that social groups (such as women or young persons) with a known higher prevalence of depression also happen to be those with lower rates of suicide. Here, the discrepancy between the most popular cause at the individual level and its seeming failure to explain suicide at the collective level has, among other things, spawned thoughts of redefining the concept of depression.

The bulk of the suicide-preventive work is embedded in the everyday work of psychiatrists, psychologists, doctors, nurses, school nurses, priests and others in direct contact with people. This kind of prevention most often consists of just listening to the suicidal person's grievances, and sometimes of more practical measures, in extreme cases even the administration of anti-depressive (or other) medication and/or care in a

closed ward. A more outward-oriented form of this activity are the telephone (now even Internet) helplines, which offer their services to those in need. Another kind of suicide-preventative strategy consists of making the means of suicide more or less unavailable, or at least reducing their lethality. In this category we find attempts at reducing the toxicity of common drugs and household gas, controlling the availability of guns, surrounding high places with nets or fences, etc. Common to all these is that they make suicides more difficult to perform. Special attention must be paid to the new generation of antidepressive medicines, which has been postulated, e.g., to have reduced the Swedish suicide rate by half. Despite uncertainty regarding the exact causalities and mechanisms involved, it is possible (even if in my opinion not yet proved) that these medicines have a considerable suicide-preventive potential.

Concentrated efforts to assemble all these and other measures in one large strategy have emerged in the 1990s in parts of Western Europe in the form of national suicide-preventive "programs". Although they are still in a trial-and-error phase, these programs represent a new approach combining the empirical facts provided by medical, behavioral, and technical sciences with the coercive powers of state authorities.

Russian Suicide: A Historical Perspective

The Historical Development of Russian Suicide Mortality Levels

There are sporadic statistical data on Russian suicides since the beginning of the 19th century. However, a rudimentary system for the collection of vital statistics was only effective from the 1860s. Despite its shortcomings, the data were probably reasonably correct (i.e. of the right magnitude) in peace times. War and unrest have, however, repeatedly hindered its function. Moreover, under the Soviet system all comprehensive collection of suicide mortality data was hindered between the end-1920s and the end-1950s. After that they remained secret until 1989.

The level of Russian suicide mortality up until World War I was low by any standards (1-3 cases per 100,000), nor could any special trends be discerned until the first decade of the 20th century. At that time, suicide rates in European Russia climbed by 60% between 1903-10, and continued to do so right up until the threshold of World War I, during which the production of statistics was interrupted. After the war, the levels increased further, reaching 6/100,000 in the mid-1920s.

Little can be said about what happened in the next 30 years, but Russian suicide rates did actually increase threefold some time during that period, rising to an internationally significant level in the 1960s. However, suicide mortality continued its relentless rise during the whole ”stagnation” period. 1984 was the peak year, as Russian suicide rate reached a high of 38.0 per 100,000.

During the next three years, however, suicide rates decreased dramatically in a manner which has few if any precedents: from 38.0 they sank by nearly 40% to 23.1 in 1986, a drop corresponding to 20,700 saved lives annually. Later research is divided about whether and in what proportions this development should be attributed to the Gorbacev anti-alcohol campaign or to the generally more hopeful atmosphere of the Perestroika period.

Whatever the cause of the remarkable decline in suicide, it did not last long. From 1987-88, suicide rates started inching upwards, and then suddenly leapt by 62% between 1989 and 1994. Russia is nt alone in having seen a dramatic increase in suicide during the economic transition: three former Soviet republics, Estonia, Latvia, and Lithuania, also had suicide mortality rates of 40/100,000 or higher in the 1990s.

Country ranks in suicide mortality tend to be stable, but Russia is an exception. Its suicide mortality before 1900 was very low even in international terms. However, by 1960 Russia ranked fairly high in the international statistics, and by 1984 it was in the second place in the world ranking of suicide mortality according to WHO statistics. After the brief respite in the mid-1980s, Russia now again belongs to the most affected countries. There are few examples of such dramatic changes in rank position, despite the long time periods involved.

Suicide Research in Russia

Russia has a tradition of suicide research which compares favorably with any European country. Scores of Russian scientists from many different specialities took part in the all-European discussion about the causes of the rising suicide rates during the 19th century, and its Russian offshoots. Hundreds of scientific articles about suicide were written by Russians even before World War I. Among the writers were world-famous names such as Ivan Pavlov (1999), Vladimir Bekhterev (1912), and Pitirim Sorokin (2002). This tradition was revived by the school of ”moral statistics” in the 1920s, with M.N. Gernet as the leading name. At that time the scientific aspirations seemed to develop very favorably indeed, but the ideology of the ”revolutionary” government put an end to all critical discussion about society. Suicide became instead a despicable practice of the ”enemies of the people” (Rittersporn 1997).

This situation began to change gradually from the beginning of the 1960s. A sign of this was the inclusion of several articles about suicide in the Great Medical Encyclopedia in 1963. There, suicide was depicted as a personal psychiatric disturbance, an interpretation which was to last, with some modification, for the rest of the Soviet period. Suicide research was henceforth permitted, if not actively supported. In 1970, the All-Soviet Suicidological Center[17], headed by the psychiatrist Aina Ambrumova, was established in connection with the Scientific Research Institute for Psychiatry of the Russian Academy of Sciences in Moscow. However, research was politically hampered by *a)* a lack of data materials at the collective level or, at any rate, the rights to their publication, and *b)* the limits directly and indirectly imposed by the government on any research that sought to relate suicide mortality to the form of societal organization. This said, a small number of active researchers nevertheless began to appear during the 1970s-1980s.

Russian Suicide Mortality Today

Especially since there is a tendency to assign suicide deaths to other causes, the validity of sucide statistics is always an issue. As mentioned above, the collection of Russian mortality statistics was not entirely unified until the ZAGS (*Zapis Aktov*

[17] Now Federal Scientific-Methodological Center of Suicidology (*Federalnyi Nauchno-Metodicheskii Tsentr Suitsidologii*).

Grazhdanskogo Sostoyaniya[18]) system was introduced in 1922. The transition to the new system did not, however, seem to be accompanied by any large changes in the frequency of suicide or its distribution (Mäkinen 2004a). In the "black box" interlude beween the end-1920s and the end-1950s, suicide figures were mixed with homicides and accidents so as to render them inaccessible unless initial death certificates could be found. Since the end-1950s, however, suicides were recorded, although the results were not published but kept "for authorized use" (*dlya sluzhebnaya polzovaniya*). After the fall of the Soviet Union, the mortality statistics from 1965-1989 have been "corrected" in a cooperative project between Russian and French demographers (Meslé *et al.* 1996). However, there has not been much criticism of the published statistics, on the contrary, several authors (O'Carroll 1989, Wasserman & Värnik 1998) have voiced their opinions in favor of their basic validity.

After 1994, suicide rates declined somewhat until 1998, and have risen again (2001: 39.7/100,000) since then. Russia has again become one of the world leaders in suicide mortality. The current suicide mortality rate corresponds to approx. 57,000 deceased persons annually. There are currently no signs of a decrease from this high level.

Suicide is one of the most important causes of death, after ischemic heart diseases and cerebro-vascular diseases[19]. Due to the generally very high levels of mortality in contemporary Russia, the share of suicide mortality amongst all-cause mortality (2.7% of all deaths in 1999) is not extremely high, however, it is estimated that suicide lowers the life expectancy of Russians by more than half a year. Its share of responsibility for the "explosion of unhealth" in the beginning of the 1990s was considerable; according to Notzon *et al.* (1998), suicide was then responsible for 5.2% of the total increase in mortality.

Not all groups in Russian society are equally touched by the problem of suicide. One large difference is found between men and women – there were 5.4 male suicides for each female suicide in 1997. The difference between sexes is at its largest among the 35-44 year olds (7.9 men for each woman in 2001) and least among the oldest (3.2 among the 75-84 year olds)[20].

Among the age groups, those under 15 are largely protected. However, Russian suicide rates increase steeply from the young age groups (men 15-24 yrs: 61.4; 25-34: 88.1[21]), and reach their peak in the middle age, where a staggering rate of 105.7 per 100,000 males between 45 and 54 years of age was recorded in 2001 (see Table 1).

Voitsekhovich and Redko (1994) have sought to build "portraits" of suicides by means of "ideal types" created with the help of factor analysis. The male "ideal type" in their material (from Kuban) was a divorced, lonely, unemployed man between 20 and 59 years of age with alcohol problems and, possibly, some criminality in his background. The corresponding female type was an old woman with mental health problems not caused by alcohol.

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[18] Registry of Acts of Civil Status.
[19] I.e. when neoplasms are differentiated according to their location.
[20] These rates are standardized for sex and age (in five-year age groups) by WHO.
[21] Year 2001 – the rates are standardized for sex and age (in five-year age groups) by WHO.

Divorced and widowed persons are at a clearly greater risk for suicide than are the married. Furthermore, there are in Russia, as elsewhere, groups such as chronic alcoholics, drug addicts, or people suffering from grave mental illnesses, whose suicide rates are estimated to widely exceed the average. The estimates of the share of the mentally ill among Russian suicides vary widely, however, just as they do elsewhere.

Table 1. Suicide mortality rates (per 100,000 population) by sex and age, Russia, 2001

Age	Males	Females
0-14	2.2	0.7
15-24	61.3	9.5
25-34	88.1	11.2
35-44	93.1	11.6
45-54	105.7	13.8
55-64	91.1	14.3
65-74	96.6	17.3
75-84	81.4	25.3

Source: WHO

Geographically, there is a gradient between north and east (high rates) and south and west (lower rates). This paralels the gradient for homicide describer by Andrienko elsewhere in this Report.

A main focus of research has been on the causes of the violent eruption of suicide in the 1989-94 period, and the explanatory attempts have mostly concentrated on the high and increasing levels of suicide in Russia. The main hypotheses here are those of alcohol consumption (Ambrumova & Postovalova 1991; Wasserman, Värnik & Eklund 1994; Nemtsov 2003), and the ”political atmosphere” factor (Watson 1995, Värnik 1997). There are, however, many other types of explanation: increasing suicide has been connected to growing socio-economic inequalities (Gilinskii in Yunatskevich & Gilinskii 1999), unemployment (Orlova 1998), and poverty (Zharikov *et al.* 1997), the changes in norms and values, incl. the loss of previous models and ideals (op.cit.; Orlova 1998), broken social relations (Orlova 1997), and the quality of medical services (Orlova 1997).

Transition alone, in the sense of a change from a socialist to a market-based economic system, can hardly be held responsible for the explosion in suicide, even if it may have acted as a trigger in some environments. In a study of 27 Eastern European countries in 1984-94, it was shown that only eight of them (Russia, Estonia, Latvia, Lithuania, Ukraine, Belarus, Kazakstan, and Slovenia) had major problems of increasing suicide mortality after economic transition and democratization had begun. Interestingly, all of these countries also had the same ”profile” of suicide mortality, characterized by a high suicide rate, high sex quota and a tendency towards a middle-age peak in suicide (Mäkinen 2000), which suggests cultural similarities. Controlling

for other variables, suicide was not significantly correlated with economic hardship[22], while it was significantly associated with alcohol consumption, social control, political democratization (negative correlation) and total mortality.

According to WHO statistics, Russia occupied in 1999 the second place in Europe (and the world) after Lithuania in suicide mortality (see Table 2). The growth of suicide in Russia since 1989 can only be matched by the Baltic countries of Estonia (+60% 1989-94), Latvia (+58%), and Lithuania (+69%), and is as such striking.

Table 2: Age-standardized suicide mortality rates (per 100,000 population), ten European countries with highest suicide rates, 2001 (or nearest year)

Country	Suicide rate
Lithuania	43.7
Russia	37.9
Belarus	32.4
Latvia	28.6
Ukraine	28.2
Estonia	28.1
Hungary	26.6
Slovenia	26.5
Finland	22.0
Belgium	19.6

Source: WHO.

Parasuicides (”suicide attempts”), suicide thoughts etc., which are often studied as indicators of suicide, cannot necessarily be counted as ”preparatory phases” for suicide but constitute phenomena in their own right. The populations of persons completing and attempting suicides are demographically very different. Not much is known of the general levels of attempted suicide in Russia. The only comparative project in the area, the WHO/EURO Multicenter Study on Parasuicide, which has been running since the end of the 1980s and currently includes 25 centers in Europe, providing materials for detailed studies and in-depth comparisons, does not yet have any Russian participants.

A general guess can, however, be based on the suicide methods used: it is not uncommon to find higher levels of parasuicide in countries where less lethal methods (such as medication) are commonly used in suicide. Conversely, where the popular

[22] This is not undisputed: Brainerd (2001) found significant effects of both changes in GNP per capita and unemployment on male suicide in her study of 22 transition countries in 1988-98.

methods of suicide are more lethal (such as hanging or shooting), the relation between attempted and completed suicide should be different. Following this logic, we might guess that the number of attempted suicides in Russia, although certainly large, is not as high in relation to completed suicides as it is in many European countries. Ambrumova (1994), while acknowledging the limitations of the data, mentions a quota of 7-10 parasuicides for each suicide..

Attempts at Suicide Prevention in Russia

In the current Russian health crisis, suicide has largely been left in the shadow of the more important causes of death. Even if suicide is discussed in special contexts such as, e.g., the Armed Forces, prisoners, and the rescue workers in Chernobyl, it is less often mentioned in the more general discussions of mortality. Here, its voluntary nature may contribute to its being set aside. While the experts are naturally both conscious and engaged with the problem of suicide mortality, it has yet to become an issue in the public consciousness.

As yet, there has been no defined, centrally-led policy of suicide prevention in Russia. Preventive efforts are mainly confined to acts undertaken by care personnel in the course of their everyday duties in clinics, hospitals, schools, etc. The effectiveness of these may be hampered by the fact that Russians traditionally do not seek psychiatric care lightly - a heritage of the Soviet period, when the structure of psychiatric care was heavily oriented towards hospitalization and the treatment of severe mental illness.

Local initiatives include special telephone hotlines[23]. They have existed since the 1970s in Moscow, organized by the All-Soviet Suicidological Center, the work of which continues with individual-psychological crisis help with special "anti-suicidal" psychotherapeutic techniques[24].

Russian suicide research is recovering from its long sleep. In addition to the existing research center (and other researchers) in Moscow, there are research groups or researchers in St. Petersburg (the Sociological Institute of the RAS), Novosibirsk, Krasnodar, and other cities. A couple of book titles on suicide have appeared each year (although their quality has varied), and the first suicidology textbook (Yunatskevich & Gilinskii 1999) was published in 1999. Research is still hampered by the general lack of resources, but also by the scarce and sporadic publication of suicide mortality data, which otherwise must be bought from the Central Statistical Office (*Goskomstat*). The information contained on the death certificates has been limited to sex, age, and place of domicile. The research, so far scattered and based mainly on individual efforts, comprises both psychiatric and social efforts of understanding the nature of suicide and dealing with the individual in the risk zone for suicide. Although it does not yet correspond to the needs, if tradition is any guide, suicidology will in time flourish again on Russian soil.

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[23] *Telefony doveriya* – "telephones of trust".
[24] See Ambrumova 1994.

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Health, Hopelessness, and Social Norms

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Introduction

Following the break up of the Soviet Union, Russia experienced a rise in mortality unprecedented in the peacetime history of industrial nations. In just three years, from 1991 to 1994, life expectancy at birth fell six years for males (to 57.6) and three years for females (to 71.2). Widespread ill health, especially for males, must underlie these low life expectancies. Despite a partial recovery, Russian males by 2001 had a life expectancy at birth of only 59 years, less than males born in Nepal or Bangladesh, and only slightly better than those born in the Sudan or Guyana. (See Table 1).

Striking as these statistics are, it is important to place them in context. In terms of male life expectancy at birth, it is true that Russia now ranks with low-income developing countries. In other respects, however, Russian mortality does not at all resemble that of a low-income country. Russia's life expectancy for females, at 72 years, is relatively high. Its rate of infant mortality is low, at 18 per thousand births, as is the rate of adult (age 15-60) mortality for females. The adult mortality rate for males, though, is strikingly high: a fifteen year-old Russian boy faces a 42 percent probability of dying before the age of 60. (see Table 1 once again.) This suggests that Russia's high rates of mortality stem, not so much from poverty or poor health services, but rather from the behavior of its adult citizens. Further evidence is that increases in mortality after 1990 were concentrated in adults of working age, especially males, and not children or the elderly, as would be expected were deaths to rise as a result of increases in poverty or a breakdown in the health care system. Moreover, the urban and wealthy regions of Russia, which experienced the greatest increases in average income, have also suffered the greatest declines in life expectancy (Walberg et al. 1998).

It is important also to note that Russia's record of high adult male mortality predates its transition from socialism to a market economy. In 1960, Russia's male life expectancy of 63 years was similar to that of middle-income developing countries like Hong Kong, Jamaica, Cuba and Uruguay. (see Table 1 once again.) Over the next four decades, life expectancy for males in Russia stagnated, whereas in each of these four developing countries it increased steadily to more than 70 years (to an impressive 77 years in the case of Hong Kong). In 1990, prior to the mortality crisis, the life expectancy of Russian males was close to those in Vietnam, Vanuatu, Iran and the Dominican Republic, countries with very low incomes and much greater poverty than Russia.

Russia's remarkable, short-lived rise in life expectancy in the 1980s has received considerable attention. It began in 1985 and lasted through 1987, with male life expectancy increasing by more than two full years, and female life expectancy by more

than a year (see Table 2). This coincided with Gorbachev's anti-alcohol campaign, and the decreased mortality is widely assumed to be the result of reduced consumption of alcohol.

Table 1. Life expectancy and mortality, selected countries, 1960-2001.

Country	**Life Expectancy** (years at birth)		**Adult Mortality** (per 1,000)		**Infant Mortality** (per 1,000)
	Male	Female	Male	Female	
----------1960----------					
Hong Kong	62.5	69.8	301	148	41
Jamaica	62.5	66.3	251	196	56
Cuba	62.6	65.9	297	234	35
RUSSIA	**63.3**	**71.5**	**N/A**	**N/A**	**N/A**
Uruguay	64.9	71.1	187	105	48
----------1970----------					
China	61.0	62.5	249	180	69
Venezuela	62.6	67.8	231	158	47
RUSSIA	**63.0**	**73.5**	**278**	**102**	**N/A**
Bahamas	63.2	67.7	231	181	38
Paraguay	63.5	67.7	211	157	57
----------1980----------					
Tunisia	61.4	63.5	232	214	72
Thailand	61.5	65.8	280	210	45
RUSSIA	**61.5**	**73.0**	**341**	**120**	**22**
Fiji	62.0	66.2	209	152	34
Colombia	62.9	68.6	237	162	40
----------1990----------					
Vietnam	62.8	66.8	215	153	36
Vanuatu	62.9	66.1	288	241	52
RUSSIA	**63.8**	**74.3**	**298**	**107**	**17**
Iran	63.9	65.4	170	174	54
Dom. Rep.	64.0	68.0	157	109	53
----------2001----------					
Sudan	56.5	59.4	341	291	65
Guyana	58.4	67.1	299	209	54
RUSSIA	**59.4**	**72.1**	**424**	**153**	**18**
Nepal	59.6	59.1	314	314	66
Bangladesh	61.1	62.2	262	252	51

Source: World Bank, World Development Indicators 2003 (CD-ROM), except for the Russian life expectancy figures for 1960 and 1970, which are from Cornia and Paniccià (2000, table 1.1, p. 6).

Table 2. Life expectancy in Russia, 1980-2001. (years at birth)

Year	Male	Female
1980	61.5	73.0
1981	N/A	N/A
1982	62.8	73.5
1983	N/A	N/A
1984	N/A	N/A
1985	63.8	74.0
1986	N/A	N/A
1987	65.0	74.6
1988	64.8	74.4
1989	64.4	74.4
1990	63.8	74.3
1991	63.5	74.3
1992	62.0	73.8
1993	58.9	71.9
1994	57.3	71.1
1995	58.3	71.7
1996	59.6	72.7
1997	60.9	72.8
1998	61.3	72.9
1999	59.9	72.4
2000	59.0	72.0
2001	59.4	72.1

Source: World Bank, World Development Indicators 2003, CD-ROM.

Is increased drinking the whole story?

This may well be part of the explanation, but it cannot be the entire story, for three reasons. First, although it is true that legal sales of alcohol fell sharply, illegal production, sales and consumption of *samogon* (home-distilled vodka) increased--no one knows by how much, but some (e.g. Sergeyev, 1998, p. 75) argue convincingly that the increase in illegal supply was so great that total (legal plus illegal) alcohol consumption did not fall very much, if at all. Second, female mortality fell along with that of males, even though women are known to drink very little alcohol in Russia. Third, mortality rates fell for a broad array of causes of death, not only alcohol poisoning, accidents, suicides, and homicides, but also respiratory diseases, diseases of the digestive system, tuberculosis and cardiovascular diseases where the link to alcohol abuse is not as strong (Shkolnikov et al., 1998, p. 2003).

An alternative explanation for the sudden rise in life expectancy is that it was a product of *glasnost* and *perestroika*, not the anti-alcohol campaign. Men may have continued to drink, but they drank away from work and with a different purpose because all citizens, men and women alike, came to have hope for a better future. This, in essence, is the view of David Satter, a keen observer of Russia who acquired impressive knowledge of the country as Moscow correspondent for the *Financial Times* in 1976-

1982, and for the *Wall Street Journal* in 1982-1988. Satter, in a recent book, does not even mention the anti-alcohol campaign or decreased alcohol consumption as a possible explanation for improved mortality in the 1980s:

> "When Gorbachev came to power and initiated his policies of glasnost and perestroika, the death rate fell by 40 percent. Even though the economic situation was difficult, with shortages and long lines, there was an emotional surge in response to the advent of freedom of speech and the opening of borders." (Satter, 2003, p. 255)

Though speculative, Satter's intuition that increased optimism could have affected mortality is supported by empirical research. Longitudinal studies of 2428 men aged 42 to 60 in Finland (Everson et al., 1996) and 795 men and women aged 64 to 79 years in San Antonio, Texas (Stern, Dhanda and Hazuda, 2001) revealed that persons who felt hopeless, and held negative beliefs about the future were significantly more at risk of death from all causes, independent of depression, perceived health, prevalent disease, and social support. Another study (Scheier et al., 1999) showed that, compared to pessimistic patients, optimistic patients in Pittsburgh experienced better recovery after coronary artery bypass graft surgery, independent of self-esteem, depression, neuroticism and traditional risk factors.

If increased optimism caused mortality to fall in the 1980s, then widespread hopelessness may well account for its rise in the 1990s. To quote David Satter once again:

> "The absence of legal safeguards during the privatization process led to an increased level of conflict in Russia and destroyed the possibility of introducing elements of moral idealism in post-communist society. For many people who had been raised under the Communist system, the resulting spiritual void was intolerable. It led to a sharply higher murder rate, a spiralling suicide rate, and an epidemic of heart attacks and strokes." (2003, p. 203)

At the same time, government removed all restrictions on the sale of alcohol, cheap vodka flooded the country, and deaths by alcohol poisoning increased sharply, so, some argue, the increased deaths were simply the result of increased abuse of alcohol. While containing much truth, this reasoning does not go far enough. Why was there increasing abuse of alcohol? Could it have resulted from increased hopelessness, a feeling that life was no longer worth living? After all, is not excess or inappropriate consumption of alcohol, to the point of placing one's life at risk, a form of suicide? If alcohol were not easily available, might not those who have lost all hope for the future find some other means to end their life?

Analysis of the effect of feelings of hopelessness on drinking habits, health and mortality would seem to be a promising area for research in Russia, but the subject for the most part has been ignored. An exception is a 1998 survey of 1009 households in Taganrog, a medium-sized industrial city situated 1000 kilometres south of Moscow (Carlson, 2001). In this follow-up to an earlier, 1993/94 survey, the researchers

included a question on hopelessness[25] (lack of control over one's life) and found it to be an important determinant of self-rated ill health and heavy drinking, but not smoking. Surprisingly, there was no relationship between either of the two risk factors they studied (drinking and smoking) and perceived ill health.[26] Logistic regressions controlled for effects of education, social networks and economic circumstances.

The difference between hopelessness and stress

Hopelessness bears some similarity to 'psychosocial stress', which a number of scholars (Shapiro, 1995; Walberg et al., 1998; Cornia and Panicciá, 2000) have come to identify as *the* leading explanation for decreased life expectancy in Russia. The two phenomena differ, however, in that hopelessness is *always* bad for physical and mental health, whereas stress can be beneficial. To have workers in a constant state of relaxation is bad for income and productivity, and "some minimal amount of stress may be necessary for an individual to exhibit optimal performance" (Kaplan, Sallis and Patterson, 1993, p. 126). If society truly wanted to reduce stress by any means, there would be no examinations at schools or universities.

Students of the Russian health crisis tend to focus on negative effects of stress. Walberg et al. (1998), for example, construct a model in which the pace of economic change (measured by turnover of the labor force) produces psychosocial stress, which affects behavior, which increases the incidence of ill health and death in the population.[27] The researchers do not measure psychosocial stress, or changes in behavior, such as consumption of alcohol, but they do examine 1990-1994 changes in

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[25] The actual survey question was: "Some people feel they have completely free choice and control over their lives, and other people feel that what they do has no real effect on what happens to them. Please use the scale to indicate how much freedom of choice and control you feel you have over the way your life turns out. None at all (1)...A great deal (10)". (Carlson, 2001, p. 816) This seems to capture the essence of 'hopelessness', even though the word itself was not used. Everson et al. (1996) assessed hopelessness by agreement or disagreement, on a scale of one to five, with each of two statements: "I feel that it is impossible to reach the goals I would like to strive for" and "The future to me seems hopeless, and I can't believe that things are changing for the better." Stern, Dhanda and Hazuda (2001) classified as hopeless all who answered "no" to the question "Are you hopeful about the future?".

[26] Another surprising finding was a sharp decrease from 1993/94 to 1998 in the proportion of respondents in Taganrog reporting 'heavy' drinking (defined as more than half a liter of 40% alcohol per week), from 29.2% to 13.8% in the case of males, and from 2.5% to 0.9% in the case of females. Declines were evident across all age groups. See Carlson, 2001, table 3, p. 809. It is unfortunate that this survey, like others we have seen, gathered data only on the *quantity* of alcohol consumed, and not the *frequency* of its consumption. Daily consumption of, say, 75 ml of vodka (.525 liters in a week) is very different from consuming half a liter each Saturday night, and different again from consuming a liter of vodka in a single binge each fortnight, though average weekly consumption is the same in each instance. Information on binge drinkers is needed, but their identification requires inclusion of a question on frequency of drinking as well as the quantity consumed per week or per month.

[27] The full model is more complex. Psychosocial stress also affects health indirectly through its effect on the crime rate, and there is feedback from ill health to psychosocial stress. See Walberg et al., 1998, figure 4, p. 316.

life expectancies in 52 regions of European Russia, and find them to be positively related to the pace of economic change. The policy implication is that economic change is bad for health. Residents of rural, remote and less developed regions of Russia are better off than "urban areas that have been exposed most to social and economic transition and which, while experiencing the greatest increases in average income, have become the most unequal and have also had the greatest increases in crime" (Walberg, et al., 1998, p. 316).

By this reasoning, optimal economic policy would avoid stress by freezing the structure and techniques of production so that there is no movement of labor from one activity to another. This cannot be correct, any more than it would be correct to reduce stress in schools by abolishing exams. All change produces stress, but change is very useful if it results in greater wealth, a higher standard of living and the means to attain better health. Stress is inevitable in a dynamic society. What is not inevitable is widespread failure to cope with stress. Individuals react to stress better if they are optimistic about the future than if they feel hopeless, with no control over their lives. They will be more optimistic about the future if they are confident that their jobs and income depend on effort and skills rather than personal connections, on "what you know" rather than "who you know". Governments can help by establishing the rule of law and by eliminating corruption at all levels. They can help further by providing income support, and help with retraining and relocation for workers who lose their job due to circumstances beyond their control.

Students of human behavior are able to avoid the conclusion that all change is bad while retaining the assumption that stress is always bad simply by redefining the word 'stress' to exclude those situations that an individual can handle without too much discomfort. Lazurus and Folkman (1984) provide what Kaplan, Sallis and Patterson (1993, p. 105) describe as "the best definition to date" of stress, namely that it is "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being." Subjective appraisal of the situation by each affected individual is crucial to the definition. The same event, say, loss of employment with no immediate prospects of getting another job, limited savings to draw on, and limited support from friends and family, would be classified as stress for a person that feels hopeless, but not for a person full of optimism.

Shapiro (1995, p. 168), using a similar definition of stress, explains that "it is not just pressure (the deadline to finish a conference paper, for example) which produces stress in this sense. It is the absence of strategies for coping with pressures and needs for adaptation. This may arise because individuals are ill-equipped to cope, or it may arise because the social and economic situation is so chaotic that reliable strategies are difficult to choose. I think in Russia we find both." She then makes the very relevant and useful observation "those who feel they are the masters of their fate can cope best under the same inherently stressful situation." Precisely. We are in complete agreement. Nonetheless, focusing on the reasons for hopelessness, on ways to provide individuals with the tools needed to cope with stress, is more useful than focusing on avoidance of the stressful situation itself. How can public policy contribute to making more people feel that they are "masters of their fate", in control of their own lives? The search for answers to this question should be high on our research agenda.

Social norms and lifestyles

If an important part of the ill health and high mortality of the Russian people can be attributed to their inability to cope with the stress of the transition to a market economy, an even larger part is a result of their unhealthy lifestyles, which include high consumption of alcohol and cigarettes, diets high in fat and low in fruits and vegetables, and lack of exercise (Cockerham 2000). This lifestyle is more characteristic of men than women, and is reflected in the fact that Russian women are healthier than men and live, on average, 13 years longer. There is no evidence that lifestyles are becoming more healthy. On the contrary, young women, persuaded by mass advertising, are beginning to take up the traditionally male habit of smoking cigarettes.[28] And, as described by Fuller elsewhere in this Report, the small, but growing number of young abusers of injectable drugs, has the most serious implications for the spread of HIV/AIDS (Veeken, 1998; Walgate, 2002).

Occasionally individuals choose lifestyles based exclusively on narrow self-interest. Most often, however, lifestyles are determined largely by peer pressure and by unwritten social norms (Elster 1989). Within the Russian family, for example, "there is almost an unspoken social compact: the man gets 50 per cent more meat, while the woman (with much less body weight) actually eats more fruit and almost as many vegetables" (Shapiro 1995, p. 161). This social norm, intended to favor the male breadwinner, inadvertently benefits the woman, who consumes less fat.

Drinking, even more than eating, is a social activity subject to clear social norms. Except for a modest amount of wine or beer consumed with meals, people of all ages and all cultures rarely drink alone. Researchers in Vancouver, Canada discovered long ago that the primary determinant of a beer parlor patron's consumption of was the number of friends in his or her drinking group (Cutler and Storm 1975). Manufacturers of alcoholic beverages are very much aware of this, so emphasise socialization in ads in an effort to promote this particular social norm (Lee, 1997). In Russia, "group norms and interpersonal dynamics more or less force the choice to drink, if the man wishes to belong and freely participate in the company of his friends, which in essence amounts to not having a choice at all" (Cockerham 2000, p. 1322).

Policy response

Social norms are not carved in stone; for better or worse, they can and do change over time. Tobacco companies know this and, at the very moment, are successfully changing the norm in Russia against smoking by females. Governments should do as much, for social rather than commercial purposes. To promote healthier lifestyles, they could prohibit the advertising of tobacco products, tax them to increase their price to consumers, and, using the proceeds of the tax, mount an educational campaign in schools, on radio and television explaining the harm that smokers inflict on themselves and on others.

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[28] Statistics from the 1993/94 and 1998 Taganrog household surveys (Carlson, 2001, table 4, p. 809) are disturbing. The proportion of adult females who smoke increased from 7.1% to 10.2% as a result of younger women picking up the habit. Female smokers increased from 13.7% to 21.8% in the 19-29 year age group, and from 9.8% to 19.6% in the 30-39 year age group.

Hong Kong in 1974-1986 was able to reverse a deeply entrenched social norm, tolerance of corruption (Hauk and Saez-Marti 2002). After suffering centuries of corruption and experiencing many failed attempts to fight it, Hong Kong launched in 1974 a new Independent Commission Against Corruption (ICAC). ICAC succeeded by mounting a massive, 12-year educational program in the schools while simultaneously increasing penalties for corrupt behavior.[29] Before ICAC, only a minority of residents of Hong Kong recognized corruption as a social problem; after ICAC, a large majority of the population became intolerant of corruption. In 1977 only 32 percent of residents of the colony thought that tipping government employees for prompt service was morally wrong; this proportion rose to 72 percent in 1986. By 1998, 85 percent of young people (aged 15-24) surveyed said they would not tolerate corruption in government or private business. The social norm for the current generation is intolerance of corruption, whereas the norm for their parents was complete tolerance. Laws against corruption are now effective because they reflect widely held social norms.

Given sufficient will, it should be possible for Russia to launch a similar campaign to combat the problems of abuse of alcohol, tobacco and other drugs, or even to attack corruption. It is necessary, however, that any program last many years and that it include education as well as increased penalties or prices for targeted practices and products. President Gorbachev's anti-alcohol campaign failed because it was short-lived and because it ignored education. It began in May of 1985 and was very unpopular, so was gradually phased out and was completely over by October of 1988. Moreover, the campaign was prohibitive in nature, increasing prices, imposing penalties and restricting the output of vodka, but did nothing to educate the population and change social norms.

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[29] In the words of an ICAC commissioner, "With the adult population, we often use the deterrent approach, that is to say, we exploit their fear of punishment. However, in the long term, children and young people must be brought up with the proper attitudes toward corruption." (The quote is from an unpublished 1983 paper cited by Hauk and Saez-Mart, 2002, p. 330.)

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4. Policy Recommendations and Conclusion

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Policy recommendations

The presentations made in this workshop give rise to a number of general recommendations, such as improving data availability and sharing and moving from a reactive focus on health *care* to a proactive one on *health*. The dearth of studies treating the economic impacts of health problems and on the cost-effectiveness of possible interventions was striking. There is clearly a need to train more economists in the area of health, more health specialists in economics, and for more medical demographers. In the absence of such studies, any set of policy recommendations is likely to be a wish list, rather than a prioritized set of options presented to policy makers. On the bright side, this is often the case in public health policy making, and a systematic catalogue of desirable actions is not without value.

Moreover, as Judith Shapiro argued in her presentation, cost effectiveness is not necessarily the best approach to identifying attractive interventions. Even cost-effective interventions often require start-up investment costs that are daunting in the context of economic crisis (e.g., provision of a universal basic care package) or offend interest groups who exercise veto power in the context of political fracture (e.g., policies to address alcohol or the terrible health impacts of the Russian penal code and system). What is needed, Dr. Shapiro appears to be saying, are interventions that are cost effective, offend almost no one, and offer multiple economic and non-economic advantages.

As is natural during economic transition, there has been a great deal of debate and controversy in Russia over the roles of the public and private sectors in health care. This debate is well developed in the international public health and health economics literatures, where the basic tradeoff is seen to be between crowding-out private medical care and protecting the poor against catastrophic medical expenditure (often for treatments that would be affordable to the middle class). While not meaning to trivialize this debate, Russian policy makers need to realize that no amount of spending, and no optimal split between private and public, can deliver good health if the adverse health behaviors documented in this workshop are not addressed.

In the same spirit, bad health behaviors will not improve if the underlying determinants, including the psychological ones, remain the same. Population health reflects social hopes and fears in the same way that individual health reflects psychological well-being. If increased optimism caused mortality to fall in the 1980s, then widespread hopelessness may well account for its rise in the 1990s. Hopelessness bears some similarity to psychological stress, which some have identified as the leading explanation for decreased life expectancy in Russia. Stress is inevitable in a dynamic

society, but not the deadly stress that comes from feeling that one is at the mercy of external, often capricious, forces. Individuals will be more optimistic about the future if they are confident that their jobs depend on their effort and skills rather than personal connections. Government can help by establishing the rule law, by eliminating corruption, and by giving the average Russian citizen the feeling that he, the citizen, ultimately controls the future.

In the following paragraphs, we propose some policy recommendations that follow from the papers presented and discussions undertaken at the workshop

1. Go beyond acknowledging alcohol abuse – do something about it.

In 1994 alcohol was responsible (directly or indirectly) for 32.6 percent of all deaths in Russia. Currently, Between 400,000 and 700,000 people die prematurely each year due to alcohol. This was not always the case. The 1985 anti-alcohol campaign saved something like one million Russian lives. But that ill-fated campaign failed to secure a sustained reduction in alcohol consumption because it was imposed from above. In 1998, an increase in alcohol consumption began and with it a rise in the number of deaths, proving once again the close relationship between general mortality (particularly, it appears, ischemic heart disease) and alcohol consumption in Russia.

The roots of rampant alcohol abuse in Russia are both psychological and economic. Among the former are the paternalistic tradition in Russian culture, the dearth of social activities and pursuits not involving drinking, and living from one day to the next at the end of which is only enjoyment of the bottle. The most obvious economic contribution to the high level of alcohol consumption is the low cost of liquor (including easy access), as well as the reluctance of policy makers to tackle a sector that is a major source of revenue to the state.

The broad lesson of the failed Gorbachev crackdown was that interventions to reduce alcohol abuse require an integrated approach and broad public support. Chances of receiving the latter can be improved by targeting interventions, as much as possible, at the hard-drinking population rather than the general drinking population. Thus, for example, restrictions on alcohol availability and sale will offend moderate drinkers far less than taxes (which do little to deter hard drinkers anyway). International experience (e.g., with anti-drunk driving campaigns) proves that across-the-board campaigns to increase awareness of the harm caused by drunkenness reduce public tolerance for heavy drinking. Government policy makers fearing loss of the vodka tax should undertake a systematic review of the true costs and benefits of drinking in Russia.

2. Implement international best-practice approaches to deal with the exploding HIV/AIDS epidemic.

HIV/AIDS is not only a health problem in its own right, it also threatens to drain the health system of resources badly needed to address other problems. The epidemic of HIV/AIDS in the Russian Federation began slowly in the early to mid-1990s but achieved explosive growth rates by the latter part of the decade. As a result, there are at least one million people suffering with AIDS in the Russian Federation. The need to care for those infected will place an increasingly heavy burden on the nation's health system. During the early stages of the epidemic, the disease was primarily isolated

among injecting drug users, who accounted for as many as 90 percent of all cases. Injecting drug use was the primary route of transmission of HIV/AIDS, because of the widespread sharing injecting equipment. Unfortunately, injecting drug use is on the rise in the Russian Federation, reaching between 3 and 4 million in 2002. Draconian laws related to narcotic possession have driven at-risk groups further underground, impeding prevention efforts. As many as 15 percent of sex workers are HIV positive. Furthermore, four of every five HIV positive women in the Russian Federation were involved in both sex work and drug use. Given the risk of arrest, many such sex workers are reluctant to seek medical testing and/or services for sexually transmitted infections. Youth are at elevated risk of contracting HIV through risky sexual behavior and drug use, because of their inadequate knowledge about how to prevent the disease. Efforts to educate young people are impeded by a lack of appropriate, targeted materials on safer sex behaviors. Furthermore, sexual health education is rarely provided in the Russian school system. Finally, many adolescents may consider condoms to be prohibitively expensive, thus limiting their use.

Policymakers and law-enforcement officials should be persuaded of the applicability of international practices to the Russian context so that they do not impede the distribution of clean needles and syringes. Furthermore, the laws related to narcotic possession and trafficking must be revised so as not to further marginalize at-risk groups, thus impeding HIV/AIDS prevention efforts. The laws regarding sex workers should be administered in such a way as to encourage sex workers to seek medical testing and/or services for sexually transmitted infections. The highest priority should be given to Russia's youth who are at greatest risk of contracting HIV/AIDS. Schools should be provided with appropriate, targeted information materials on safer sex behaviors and they should be required to use these materials in sexual health education lectures, classes or seminars. Schools should also be encouraged to provide adolescent students with condoms when they are requested to do so.

3. Make reproductive health a priority sector.

Through co-factors such as inadequate sexual knowledge and high rates of sexually transmitted infections, the HIV/AIDS situation is closely related to the situation in reproductive health. More generally, in the current situation of low fertility, poor mother and child health is a problem that Russia cannot afford, especially as unhealthy children grow up to be unhealthy adults. Admittedly, "headline numbers" such as the maternal mortality and infant mortality rate have not deteriorated in Russia during transition (although they remain unacceptably high). However, more detailed indices of reproductive health have declined spectacularly. More than two-thirds of all pregnancies are now characterized by some complication, most commonly anemia, which has more than quadrupled since 1990. Rates of congenital malformation and perinatal morbidity have increased. While the number of abortions has declined, the ratio of abortions to live births has not, a reflection of the low prevalence of family planning. An unacceptably high number of abortions take place outside medical facilities giving rise to elevated rates of abortion-related mortality and morbidity including secondary sterility. There has been an explosion in inflammatory diseases of the reproductive system among teenaged girls, as well as sexually transmitted infections such as syphilis, which offer an ideal transmission route for HIV/AIDS.

Not enough pregnant women in Russia are receiving are regular antenatal care and information on the importance of nutrition during pregnancy. The inadequate public health approach to family planning is reflected in the high abortion rate. Attitudes towards open discussion of sexual matters and the antiquated approach to sexual education in the Russian school system need to be changed to address the epidemic of adolescent sexually transmitted infections, which offer an ideal transmission route for HIV/AIDS. Condom availability and acceptance could be improved by improving quality, subsidizing price, broadening availability, and conducting publicity campaigns to promote usage.

4. Change attitudes towards smoking and combat the spread of tobacco among women

The smoking rates of males in the Russia countries are amongst the highest in the world and show no evidence of decline. Data on the rates of current and ever smoking in Russia imply that the prevalence of smoking has increased rapidly between generations and especially in the youngest age group. Men are more likely than women to start smoking when young, to smoke more heavily, and to be nicotine dependent. In women, smoking is significantly more common among younger compared to older generations. The rising rates of female smoking and lower age of uptake with its implications for higher levels of dependency are significant cause for concern. Active marketing by transnational tobacco companies is one cause of the problem.

Reliable data on smoking prevalence are a prerequisite for developing the effective policies and programs that are needed to reduce excessive smoking in the Russian Federation. Hence, it is necessary to develop region-wide comparative data on the nation's smoking habits. Efforts to curtail current smoking patterns and prevent the rise in female smoking must include measures to curb the activities of transnational tobacco corporations. Since these activities are successfully changing the norm in Russia against smoking by females, the Government should do as much to change social norms concerning tobacco use. The Government should prohibit the advertising of tobacco products, tax them and use the proceeds to mount anti-tobacco educational campaigns in schools, television and on radio.

5. Treat suicide and homicide as public health problems

Suicide is among the most important causes of death in Russia after heart and cerebro-vascular diseases. It was responsible for 5.2 percent of the total increase in mortality in the 1990s. By 1984, Russia was ranked second in the world in suicide mortality. In the late 1980s, the suicide rate started inching upwards once more and then suddenly increased by 62 percent between 1989 and 1994. Since then, Russia has continued to be a world leader in suicide mortality. Suicide was once a middle-class and upper class phenomenon, it has since become most prevalent among people with low social status and those living in rural areas. Males are still most likely to commit suicide. In 1997, there were 5.4 male suicides for each female suicide. Similarly, divorced and widowed persons are at greater risk for suicide than those who are married. There is a clear link between alcohol abuse and suicide.

The epidemiology of homicide is similar. According to the World Health Organization (WHO), the Russian homicide rate is the fourth highest in the world.

During the transition period the homicide-related mortality rate grew by three times. It is now about 20 times that of Western Europe. Alcohol abuse and unemployment are correlates of homicide as they are of suicide.

Policies to reduce alcohol abuse are an important component of any response to suicide and homicide. Policies to reduce homicide mortality should start from the realization that inter-personal violence is first a social problem, and only second a criminal one. More aggressive policing will address only a small sub-set of the causes of lethal violence and must be accompanied by a broader public health approach to the problem. In the area of suicide, international best practice indicates that public suicide prevention programs can make a difference. In addition to developing a central strategy and initiative concerning suicide prevention work that is supported by local initiatives, it is necessary to implement the most result-oriented and cost-effective forms of suicide prevention methods. Finally, it is necessary to build a long-term social base for supporting suicide prevention activities and research.

6. Institute special programs to address health problems of the homeless and incarcerated populations

Among the most urgent health problems in Russia is the health situation of the homeless and incarcerated populations. There are currently over 100,000 homeless persons living in Moscow and 50,000 in St. Petersburg, many of them victims of long-term homelessness. Most of these are Russian citizens who have completed secondary education, however, there is also a large number of "street children." Homelessness is both an issue of the lack of housing and the break up of normal social relations. Among the causes of the former are the closing of workers' hostels, elimination or reduction of other institutional housing, such as mental hospitals, state orphanages, treatment centers for alcoholics. The high cost of housing is also responsible for homelessness, particularly in the case of divorced men. Cities are becoming tougher places for homeless people to find shelter. The shelters are only accessible to persons who had been residents of the city. Hence, other homeless people are increasingly dependent on the resources provided by NGOs,

A disproportionate number of the homeless are ex-prisoners. Russia has one of the highest incarceration rates in the world. More than a third of 30-year-old males are listed among registered offenders. Poor prison conditions and the concentration of drug users in prisons, often for infractions that would result in little more than a fine in many countries, have led to an epidemic of injecting drug use in Russia's penal institutions. These institutions, as a result, are a breeding ground for HIV/AIDS and multi-drug resistant tuberculosis.

The best way to address the health problems of marginalized populations is to prevent marginalization in the first place. It is necessary to deal with the problem of homelessness both as an issue of a lack of housing and as an issue of the breakup of normal social relations. Targeted housing subsidies are needed so that poor residents who would otherwise be unable to pay rent and owners of flats who might be unable to pay building maintenance fees are not evicted. The shelters in large cities must be made accessible to all persons in need, not simply present and former legal residents of the city. It is particularly important to provide shelter for those who have lost both housing and family support as a result of imprisonment. The state must assist in developing a

variety of non-criminal youth subcultures that can provide attractive opportunities for homeless children and young people so that they will not find themselves dependent on handouts from charities or badly paid odd jobs.

Russian lawmakers must ask themselves if current rates of incarceration are really well suited to the problems they are meant to address. International best practice treats minor drug offences as a social and public health problem, not as major crimes requiring long-term incarceration. Regardless of legal reform, urgent programs are needed to improve prison health. 5 million prisoners are released annually in Russia, if the current situation prevails, many will carry HIV/AIDS and multi-drug resistant tuberculosis back to their communities.

7. Reform the health-care financing system

The ultimate problem in Russian health care finance is that not enough is spent on health, a legacy of the Soviet system in which health was considered a non-productive sector, and that what is spent is often spent ineffectively and inequitably. The Russian constitution establishes the right of each citizen to health services at public health-care institutions free of charge. To give substance to that right, Russia has created a mixed general tax revenue/insurance-based health care financing system. Constitutional guarantee aside, however, access to free government-financed health-care decreased dramatically during the 1990s as a result of the general economic crisis. Furthermore, the scale of prevention activities has declined: access to quality health-care is low: more health services are being provided on a fee-for-service basis, and informal payments for services have become commonplace. The introduction of mandatory health insurance is still incomplete. Federal authorities implemented the program very poorly and not in full. As a result the mandatory health insurance system has not led to a more rational use of available resources. Furthermore, there is not enough money coming into the system to pay for the services to which the policyholders are entitled.

The new Government should aggressively pursue health care financing reform. The gap between government guaranteed health benefits and available public financial resources needs to be closed. The failures to date of mandatory health insurance system need to be assessed and the reform completed in line with modifications found to be necessary. In order to make more efficient use of available resources, the loss-based approaches to health-care provider management should be ended.

Concluding comment

The proposal for this project stated succinctly “The timing of this conference is excellent” and went on to describe how health care reform is emerging as a key Russian reform issue. This has been borne out as the new Putin government has made health care reform, along with other social issues such as pension reform, a priority. This reform includes a complete reorganization of Ministries, with health issues being merged with pension and social security reforms (family assistance, unemployment benefits, disability and long term care, etc.). This presages a broader and more heuristic approach to health in the Russian Federation, an approach less oriented to care and more in tune with the needs of the population.

Such an approach is entirely consistent with the ideas developed and insights gained during the course of the project "Policy Pathways to Health in the Russian Federation." The new emphasis on health emerging at the highest political level provides an excellent opportunity for moving forward policy actions such as those described above. However, data problems must be addressed and there is need to build capacity in the form of researchers and policy experts able to prioritize health interventions. International linkages to learn of best practice elsewhere in the world and to exchange insights with those experiencing similar health system transitions elsewhere in the region will be especially fruitful at this stage. Members of the network formed through this project are presently discussing ways of addressing these needs and considering possibly fruitful future collaboration.

5. Annexes

Annex 1: Program

Annex 2: List of Participants

Annex 1. Program

"Policy Pathways to Health in the Russian Federation"
International Institute for Applied Systems Analysis (IIASA)
Schlossplatz 1, A-2361 Laxenburg

Wodak Room

September 19-20, 2003

Agenda

Friday, 19 September

07:45	Bus leaves from Hotel Prinz Eugen Wiedner Gürtel 14, A-1040 Vienna, Austria Tel: (+43-1) 505 17 41 Fax: (+43-1) 505 17 41-19 to IIASA	
08:30-09:00	Welcome	L. Hordijk, G. Zieger, L. MacKellar, N. Rimashevskaya
09:00-09:45	Paper 1	L. MacKellar: "Overview"
09:45-10:30	Paper 2	S. Surinov: "Some aspects of the demographic development of the Russian Federation" / N. Rimashevskaya discussant
10:30-11:00	*Coffee Break*	
11:00-11:45	Paper 3	D. Leon "Russian mortality since the mid-1980s" / E. Andryuchina discussant
11:45-12:30	Paper 4	S. Shishkin: "Health Care Financing in the Russian Federation" / D. Horlacher discussant
12:30-14:00	*Lunch*	*IIASA Schloss Restaurant, Green Coffee Room*
14:00-14:45	Paper 5	A. Nemtsov "Alcohol Situation in Russia, 1980-2002" / Y. Andrienko discussant
14:45-15:30	Paper 6	D. Rotman: "Prevalence of Smoking in Eight Countries of the Former Soviet Union " / D. Leon discussant
15:30-16:00	*Coffee Break*	
16:00-17:30	Panel 1 and floor	Panel (J. Shapiro, chair): Policy priorities and plans Panel participants: E. Kakorina, A. Nemtsov, N. Rimashevskaya, S. Shishkin, S. Surinov
17:30	Bus leaves from IIASA to Hotel Prinz Eugen	

Saturday, 20 September

08:15	Bus leaves from Hotel Prinz Eugen to IIASA	
09:00-09:45	Paper 7	Y. Andrienko "Crime and Violence in Russia" / L. Willmore discussant
09:45-10:30	Paper 8	S. Stephenson "Homelessness in Russia" / S. Sourkov discussant
10:30-11:00	*Coffee Break*	
11:00-11:45	Paper 9	V. Fuller "HIV/AIDS in Russia" / I. Katkova discussant
11:45-12:30	Paper 10	I. Mäkinen "Suicide Mortality in Contemporary Russia" / L. MacKellar discussant
12:30-14:00	*Lunch*	*IIASA Schloss Restaurant, Green Coffee Room*
14:00-14:45	Paper 11	C. Haerpfer "The health crisis in Russia and some CIS countries" / J. Shapiro discussant
14:45-15:30	Paper 12	L. Willmore "Health, hopelessness, and social norms in Russia" / I. Mäkinen discussant
15:30-16:00	*Coffee Break*	
16:00-16:45	Paper 13	J. Shapiro: "Setting Health Priorities in Russia", S. Shishkin, discussant
16:45-17:45	Floor	L. MacKellar, chair: Research priorities and plans, "Where do we go from here?", any other business
~ 18:00	Bus leaves from IIASA to Hotel Prinz Eugen	
Evening	*Social event*	
19:30	Bus leaves from Hotel Prinz Eugen to Social Event, dinner at: Wiener Rathauskeller, Salon Zierer Rathausplatz 1, 1010 Vienna	
22:30	Bus leaves from Rathauskeller to the Hotel Prinz Eugen	

Annex 2. List of Participants

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IIASA, September 19-20, 2003

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Estonian Association for Systems Analysis

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