

*What is Killing Russians?  
It's not (just) what you think*

Poor Governance and Health Outcomes  
in the Post-Communist Era

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*\* The authors are grateful to the FSI Global Underdevelopment Action Fund for seed funding for this research*

DRAFT, NOT FOR CITATION.

October 22, 2012

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## **Part 1. Russia's Mortality Crisis**

Russia's health crisis is nothing short of catastrophic. While the Soviet Union initially increased the state of public health relative to the Tsarist regime, comparatively, most aspects of its healthcare system and health outcomes lagged behind the west. Following the Soviet collapse, however, the population suffered an unprecedented and precipitous decline in life expectancy and sharp increases in adult mortality rates. Middle-age men were hit particularly hard. This situation persisted well into the first decade of the 21<sup>st</sup> century, despite dramatic increases in GDP per capita from 2000-2008 in particular. This paper seeks to understand why adult mortality rates, particularly among Russia men, remain stubbornly high compared to other middle income, and even many lower income countries.

For perspective, between 1988 and 1993 female life expectancy fell by more than three years, from 74.5 to 71.2, while male life expectancy plummeted by more than seven years, from 64.8 to 57.6 years (World Bank 2010). As Eberstadt (2010) has noted, in comparative terms, the life expectancy of the average Russian man during the 1990s and 2000s was the same as his counterpart in developing countries such as Cambodia, Ghana, and Eritrea (72).

Similarly, as seen in Figure 1, adult mortality rates in Russia during the early 1990s rose by over 60%, from 110 to 178 per 100,000 among women and from 287 to 486 per 100,000 among men (Eberstadt). In the 1980s, Soviet mortality levels were roughly 38% higher than Western Europe. However, by 2006, mortality rates had skyrocketed to roughly 135% higher due to both the steady decline in death and mortality rates in Western Europe, as well as the erratic spike in rates in Russia. According to a benchmark of 86 or 87 years of age, the high water standard for life expectancy in Russia, aggregate excess mortality for Russia from 1992 – 2006 would have amounted to a net total of 6.6 million premature deaths. Of these, an estimated 4.9 million – 74 percent -- were men (Eberstadt). Such a dramatic decline in health and survival, particularly among men in the prime of their working lives, while perhaps understandable during wartime, is virtually unprecedented in recent history during peacetime in a middle-income country. To underscore this point, consider that Russia suffered 1.8 million military deaths and 1.5 million civilian deaths during WWII according to Soviet era demographer Boris T. Uralis. The population losses between 1992 and 2006 approach the level of deaths during WWII throughout the Soviet Union as a whole, therefore! Mortality and life expectancy trends were similar in the 1990s in many formerly communist countries, but Russia is unusual in that both rates continue to lag behind other indicators of development, particularly gdp/capita.

Only the number of deaths due to HIV/AIDS in some African countries is comparable in scope. For example, Botswana saw a 61% increase in adult mortality from 1980 to 1997 (a 17 year period) due to HIV/AIDS; but between 1991 and 1994 (just 3 years) in Russia adult mortality increased a comparable 60 percent, and still has not declined to the level it was in 1994. For comparison, in 1994 life expectancy in Botswana was 63.3 years, while

in Russia it was a shocking 57.6 years. (IHME) While the clear culprit in Botswana is HIV/AIDS, the cause in Russia is hotly contested.

Recent work by medical and public health scholars has attempted to explain the increase in adult mortality in the first few years immediately following the collapse of the Soviet Union. The most common explanations for the unprecedented peacetime adult mortality trends in the post-Soviet period include privatization (Stuckler, King and McKee 2009) and the stress of economic and political reforms (Brainerd and Cutler 2004, Shapiro 1995, Garrett 2000), the collapse of the Soviet health system (Ellman 1994), alcohol consumption (Leon et al 1997, Perlman and Bobak 2008, Bhattacharya, Gathmann and Miller 2011), and smoking.

For the most part, however, these studies are unsatisfying. These analyses do not distinguish between the 1990s and 2000s with regard to health outcomes in Russia, for example. Indeed, much of the recent research on the Russian health crisis has focused on the deterioration of health in the early 1990s only. Few, if any, however, have attempted to explain the subsequent ups and downs in life expectancy or dramatic increase in mortality rates toward the end of the 1990s, or the second and subsequent relative decline (or increase in the case of mortality) in the early 2000s and its persistence relative to pre-1994 levels. Russia's high adult mortality rates are also rarely disaggregated by gender in existing studies. Men die at a consistently higher rate in many parts of the world, but in Russia it has been (and remains) disproportionately high relative to women.

Further, we have witnessed comparatively peculiar and unexpected outcomes with respect to the relationship in Russia between health outcomes and economic change. As the Russian economy has grown, adult mortality and life expectancy have failed to improve proportionately or even significantly, in the case of mortality in particular. This defies general expectations, as economic growth is often associated with better health outcomes due to the availability of state and private funding for healthcare. As we will see, while Russia has indeed invested more in the health sector since the collapse of communism, in what could be described as a "mortality paradox" we still do not see proportionate improvement in adult mortality. As a result, the stubborn increase in adult mortality cannot easily be explained by the hypotheses presented elsewhere.

This paper aims to examine not just economic explanations, but also the possible political variables affecting adult mortality in Russia from the 1980s to the present. In particular, I explore the relationship between political transparency, voice and accountability, and adult mortality over the roughly twenty-five year period since Mikhail Gorbachev first initiated his perestroika reforms in the Soviet Union. I use adult mortality as the dependent variable rather than life expectancy because mortality is a more reliable measure by which to track year on year changes in health outcomes. Life expectancy, on the other hand, may lag political or economic changes by some number of years and is more open to statistical manipulation as a metric of health outcomes.

The genesis of this project is a paper that I co-authored in 2008 with Michael McFaul entitled, *The Myth of the Authoritarian Model: How Putin's Crackdown Holds Russia Back* (*Foreign Affairs*, January/February 2008, vol. 87, no. 1, pp 68-84). Our interest was examining the ways in which the shift from a more liberalized political regime in the 1990s under Boris Yeltsin to a more autocratic regime from 2001 or so onward, under Vladimir Putin, actually produced worse governance outcomes for Russia, despite economic growth under Putin and deep recession under Yeltsin. We used several examples, including variations between the two periods in Russian life expectancy, the murder rate, the number of terrorist attacks, and increases in corruption for example, to argue that, despite Putin's claims to the contrary, "the data simply do not support the popular notion that by erecting autocracy Putin has built an orderly and highly capable state that is addressing and overcoming Russia's rather formidable development problems." (p.77)

The logic of our argument was that Russia would have done better had it retained and further developed pluralistic, transparent, and accountable politics. The decrease in relative accountability of government from 2000 onward meant fewer opportunities to hear and respond to the demands and needs of the population and fewer avenues for the Russian population to protest state failure. State actors, operating in a rentier state environment due to high oil prices during Putin's first two presidencies simply did not worry about providing public goods and services to the population. Real incomes were doubling annually. Elections in these circumstances did not need to provide information or accountability. Corruption could be widespread as long as the economy continued to grow.

In the original article, our evidence for the ways in which Putin's crackdown produced worse governance was merely a set of correlations. A retreat from the liberalization of the Yeltsin years in the 2000s seemed to correspond to increased murder rates, violent death, decreased life expectancy, increased mortality and increased corruption. In this paper, therefore, I develop the argument by using Russia's stubborn negative mortality to look more closely at a possible causal relationship between governance (the provision of public goods and services; in this case, healthcare) and regime type.

The overall study, of which this paper is an initial (early!) product, contributes to several important bodies of research. First, it adds to our current understanding of the "Russian Mortality Crisis" by examining the patterns of Russian adult mortality over time, and focusing on the *entire* post-Soviet period rather than the initial fall in life expectancy during the early 1990s, as most previous studies have done. Second, it contributes to the literature examining the relationship between economic growth and health outcomes, which has often focused on developing countries and child mortality rather than variation in adult mortality in middle and upper income countries (Pritchett and Summers 1996, Casabonne and Kenny 2011). Finally, this work contributes to the growing literature on the relationship between political variables, such as regime type, and health outcomes, such as mortality rates (Lake and Baum 2001, Cutler et al 2006, Franco et al 2004, Besley and Kudamatsu 2006, Ross 2006).

Although there is no single cause of the Russian adult mortality crisis, the findings here offer a few important correctives and suggest a number of previously overlooked variables. First, it is not bad habits alone that account for persistently high Russian adult male mortality rates. Russians have always been heavy smokers, determined drinkers, and nutritionally challenged. We do not see tremendous variation over the first two decades of the post Soviet transition in any of these health-defeating habits. **They cannot, therefore, account for the *changes* in mortality rates that have occurred over time since the mid 1980s.**

Second, it is commonly thought that the Russian health care system simply collapsed in the 1990s during the great economic recession that persisted until 1999. In reality, however, there is little evidence to suggest this is the case.

Third, economic growth has not proportionately reversed the rate at which Russians die. Economic growth in the last decade has meant an increase in spending in Russia's healthcare sector, yet mortality rates remain as high or higher than they were in 1994, when economic growth was negative.

I look then to political variables to try to explain persistently high adult mortality rates. Post-Soviet Russia provides us with a convenient natural experiment by which to test variations in political accountability, transparency, and freedom of organization and expression in two distinct periods when Russia was more free (although by no means a consolidated democracy) in 1992-1999 and 2000-present, when by most measures, Russia became less free along these measures. I find that political variables do seem to matter in explaining the general pattern of mortality rates in Russia, and I end with a preliminary theory of why a return to less free and open government under Putin has contributed to the rising death rate of Russian adult men in particular.

## **Part 2: The Russian Mortality Crisis in Comparative Perspective**

Many of the studies examining the relationship between economic development and health have focused on developing countries, and tend to regard developed (or middle income) countries like Russia as having all gone through similar demographic transitions that resulted in reduced child mortality and increasing life expectancy. These studies often focus on child health and infectious disease as the dependent variables of interest (Pritchett and Summers 1996, World Development Report 1993), rather than adult mortality, as I do here. This is because variation in life expectancy among developing countries is most often a result of variation in child mortality rather than adult mortality, and it is a change in child mortality that has the greatest effect on average life expectancy.

In Russia, by contrast, child mortality today is relatively low, at about 14.5 deaths per 1000 births, approximately the same rate as Jordan or Saudi Arabia, a rate that would be predicted based on Russia's income per capita. Meanwhile, adult mortality in Russia has increased since the early 1990s. Standard accounts, then, of the relationship between

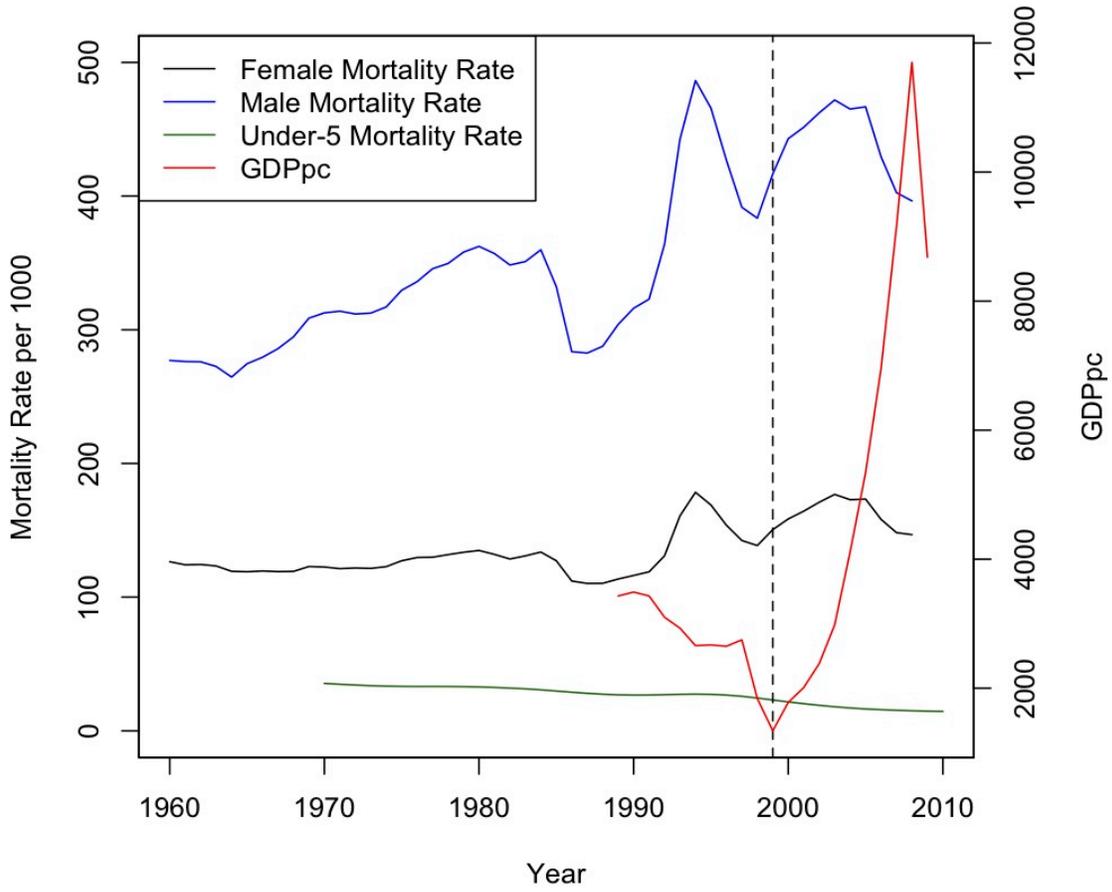
income and health, do not well account for the discrepancy in mortality trends between adults and children in Russia despite occurring in the same economic environment.

Figure 1, below, shows adult mortality by gender, under-5 (child) mortality and income per capita (at current prices) from 1960 to 2010. Child mortality has fallen at a more or less constant rate, regardless of economic fluctuations, while adult mortality has been far more variable during this period. It is also useful to note that after an initial increase in the early 1990s, adult mortality rates began falling several years before the turnaround in Russia's economic fortunes beginning in 1999. In fact, by the time income per capita hit its lowest level, in 1998 (indicated by a dashed vertical line in Figure 1), adult mortality had already fallen significantly and was beginning its second period of increasing rates.

Even more surprising is the subsequent rise in mortality (for both men and women) in the face of rapidly increases in income per capita in the early 2000s. There are few other countries that have seen a decline in health outcomes like adult mortality simultaneously with such an increase in income per capita. The relationship between income per capita and health, therefore, needs to be explored more carefully.

Further, any explanation for Russia's pattern of adult mortality must take into account not only the first period of increasing mortality rates, that began in the mid-1980s and peaked around 1993, but also the second increase, beginning from 1998 to 2003, when the economy had clearly begun growing. Economically, the early years of post-Soviet Russia were a time of great turmoil, with GDP per capita falling from around \$3400 in 1989 to \$1300 in 1999 (WDI). Between 1999 and 2008, however, income per capita increased quickly and steadily, climbing to \$11,800. While rapid declines in Russian's economic fortunes might have explained high mortality in the early stages of transition, therefore, they do not explain similarly sharp increases in mortality when the economy was growing an average of 7 percent year on year.

Figure 1: Russia's Mortality Rates and Changes in GDP Per Capita 1960-2010



(Source: World Bank, 2011)

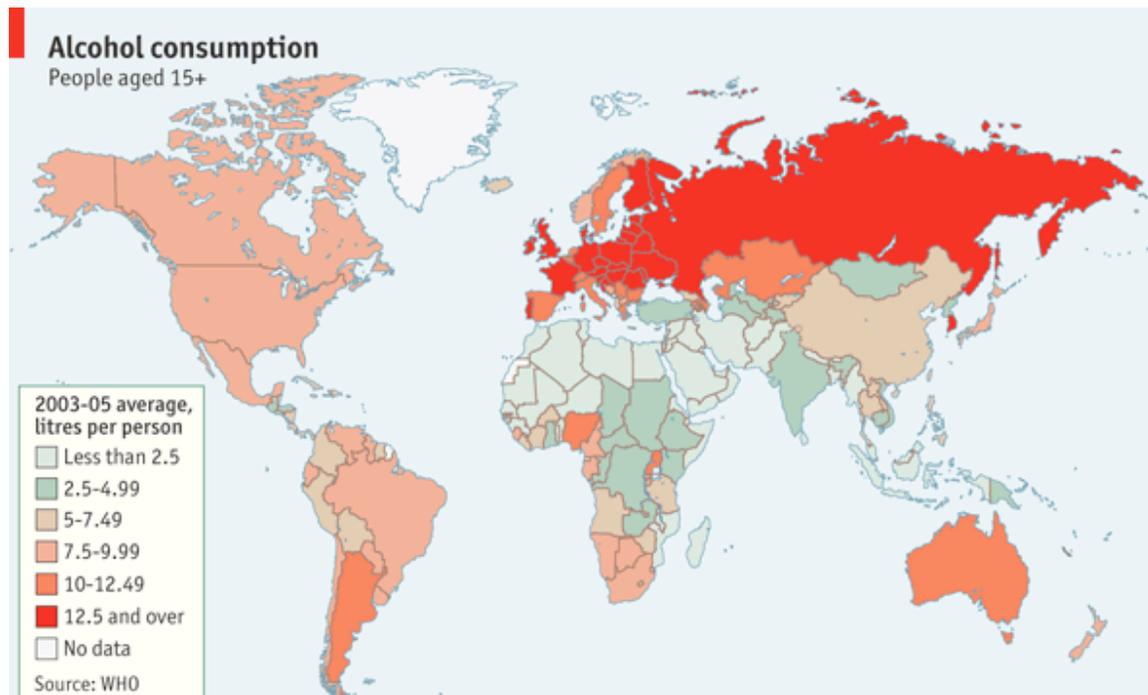
### Part 3: Dominant Explanations of Russia's Mortality Crisis

Why then, despite rapid and steady economic growth, has Russian adult mortality not improved significantly since 1994? In sum, what is killing Russians?

#### Bad Habits?

Russians have always had some bad health habits. The first candidate explanation for the high death rate in Russia in most minds is automatically *high alcohol consumption*. Indeed, Russian alcohol consumption has always been and remains comparatively high, as Figure 2 demonstrates. But note that parts of northern Europe, Eastern and Western Europe are also home to some heavy drinkers. The difference though, is that Russians aged 15 and older not only have the highest alcohol consumption in the world at 13.9-15.2 Liters of pure ethanol, but that it is consumed predominantly as spirits as opposed to wine or beer. It is the binge drinking of spirits – vodka in particular – that is especially harmful to Russian adults. Alcohol poisoning, for example is about 100 times higher than in the United States. Alcohol is cheap and easily accessible in Russia: the price of a liter of vodka in Russia remains cheaper than the price of a liter of milk. Alcohol consumption also so contributes to accidental/violent deaths, but even so, it is not the leading cause of adult death in Russia. Further, there has not been a significant fluctuation in the rate of alcohol consumption over time, so it cannot account for changes in adult mortality rates as a result.

Figure 2: Global Alcohol Consumption 2003-2005



Smoking is another tremendously bad health habit for adult Russian men in particular. The World Health Organization reports that over 60 percent of men over age 15 are smokers. The Russian government has recently drafted a bill to increase restrictions on tobacco sales and where citizens may smoke, but this law will not go into force until February 2013. Further, as with alcohol, there have not been significant fluctuations in the rate of tobacco smoking over the last 20 or so years, and while it is strongly linked to various cancers and lung disease, smoking alone cannot be the central cause of fluctuations in adult mortality over time. (Eberstadt ,2010)

#### Poor Nutrition

It could be that adult mortality rates are driven by poor eating habits or lack of access to nutritious food. There have certainly been extended periods in Soviet history (the 1930's, during WWII), when food was scarce. The Russian diet, comparatively, is lower today than other comparable countries in terms of fruits and vegetable consumption, and this too could contribute to poor health outcomes. But in order to explain changes in adult mortality, we should see changes in caloric consumption or changes in the quality of Russian diets. This, however, does not seem to be the case and therefore is an unsatisfying explanation of variations in adult mortality.

#### Communicable Diseases (HIV/AIDS or TB)?

Since the collapse of communism, Russia has certainly suffered an almost epidemic level of HIV/AIDS. The disease transmission is caused not just by the post communist proliferation of prostitution and the human trafficking boom this has fostered, but also through the boom in the use of illegal intravenous drugs. Yet, as a cause of death, HIV/AIDS is not a leader in Russia. As Table 1, below, indicates, HIV/AIDS and infectious diseases like tuberculosis, while accounting for over 1% of deaths in the population (and therefore at epidemic proportions definitionally in the case of HIV/AIDS), are not the leading cause of adult deaths.

#### The Culprit: Non-Communicable Disease and CVD in Particular.

By far, the leading causes of death in Russians over 15 years of age are *non-communicable diseases* like cardiovascular disease, diabetes, cancer, asthma and the like. Some of these are certainly exacerbated by bad habits like smoking or heavy drinking, but they are not caused by bad habits alone.

Table 1, below, indicates that cardiovascular disease (CVD) is a huge part of the Russian disease burden. It accounts for about 57% of deaths, and CVD rates are higher than the European averages in all age groups and across genders. CVD is about 3.5 times more frequently the cause of death in Russia than in European countries on average. Indeed, adult mortality in Russia from CVD alone was 30% higher than deaths in Western Europe from all causes combined. (NBR, Eberstadt 2010, p. 102)

Further, there has been a dramatic increase in the number of Russians actually dying from CVD since the collapse of the Soviet Union, but significantly, over the last ten years in particular. Cardiovascular mortality has increased in Russia between 1980 and 2008 from a low of 240 per 100,000 population to 308 per 100,000 for all ages. Significantly, from

2000 to present, CVD mortality increased from 290 to 310 deaths per 100,000 population.

Table 1: The Russian Disease Burden:

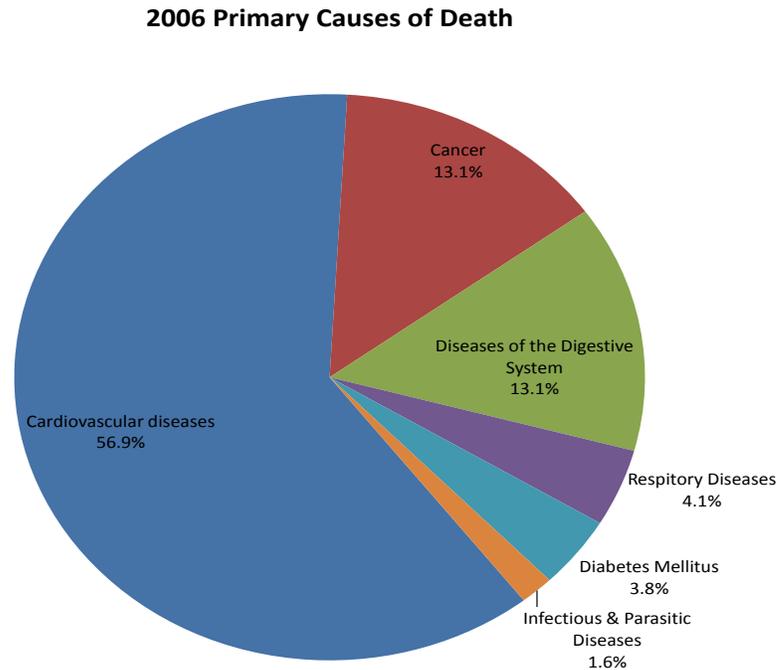
Cause of Death	Percentage of total Deaths
Cardiovascular Disease (CVD)	56.9
Cancer	13.1
Digestive System	13.1
Respiratory System	4.1
Diabetes	3.8
<i>Subtotal – non-communicable disease</i>	<i>91.0%</i>
Infectious/Parasitic Diseases (HIV/AIDs, TB etc.)	1.6
External Causes (violent death)	7.4

(Yellow Highlighting indicates non-communicable diseases)

Environmental factors, lack of access to good public healthcare, lack of education about good health habits and genetics can all play a role in making up this configuration of non-communicable disease. Except for genetics, these are issues that governments can affect. Cardiovascular disease, for example, is also the leading cause of death in the United States. Russians, however, are sicker sooner, and longer. The difference, however, is that American men (and women) die later in life from it perhaps due to better health education, preventative and palliative treatment. According to the World Health Organization, *CVD mortality can be reduced through preventive care delivered through a country’s primary care system.* (WHO Highlights on Health in the RF, 2004.) It is

reasonable, therefore, to look inside Russia’s healthcare system and investigate to what degree its ability to affect adult mortality has or has not varied over time.

Figure 3: Primary Causes of Death in Russian Adults 2006



Sharpening our question, now that our killer has been identified as cardiovascular disease, why is the Russian **mortality** rate due to cardiovascular disease so high? The habits of average Russians – and men in particular – are not conducive to heart health, but again, they have not varied significantly, so those bad habits alone would not explain variations in cardiovascular disease mortality. Certainly, it would be helpful if tobacco and alcohol consumption decreased, and high salt diets were replaced by ones rich in fruits and vegetables, but other forms of preventative treatment require going to a hospital or clinic and getting a diagnosis of CVD. Cholesterol control, for example, is the greatest documented success for treating CVD. But in order to access cholesterol reducing drugs, or know to alter one’s diet to reduce cholesterol, you would have to have been diagnosed by a physician, which in Russia means accessing a polyclinic or hospital.

This suggests that the CVD mortality crisis in Russia could be driven by insufficient access to healthcare.

### **PART III Explaining the Mortality Crisis**

There are two general areas to investigate in trying to explain why CVD appears to be driving mortality rates – state behavior (policy) and individual behavior and the possible interaction between the two.

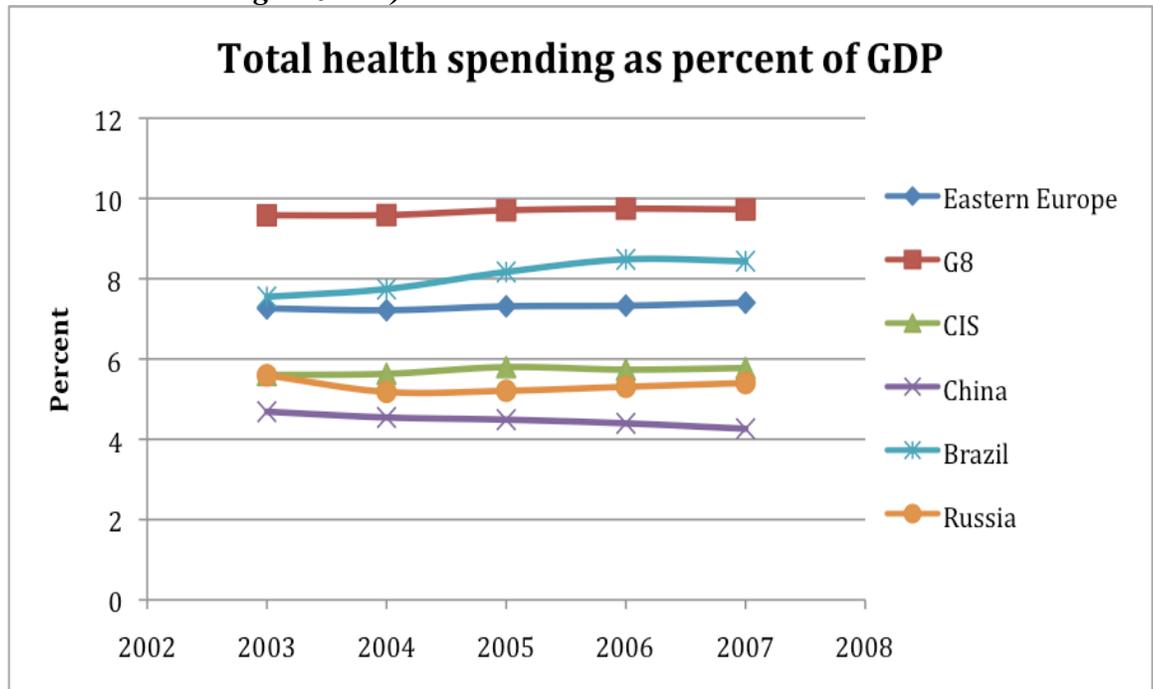
#### *The Russian Healthcare System:*

The Russian healthcare system borrows heavily from its Soviet legacy even two decades after the collapse of the communist system. The Russian state has a national health system and is supposed to guarantee a basket of health services to citizens. This includes childhood vaccinations, for example, and access to neighborhood polyclinics, which serve as the main point of access to state healthcare. In the Soviet period, citizens regularly referred to the state system as “free, bad healthcare,” however. Doctors were generally not well-trained by international standards, or well paid and medicine was considered a low status profession. This meant that often Soviet citizens had low trust in the healthcare system. (Garrett)

Given the increase in economic growth since 1999 in particular, both President Putin and especially former President Medvedev have recognized the need for increased investment in modernizing Russian infrastructure, including in the health sector (these were Medvedev’s “national projects”).

Figure 4, below, compares Russia’s total spending as a percentage of GDP to other groups of countries. Since 2002, spending has remained fairly steady at between 5 and 5.5 percent, which is about the same as it was in the 1990s. In terms of gross amount spent, however, since there was a steady increase in Russia’s GDP, this meant more actual rubles spent on healthcare per year from 1999 (the first year of positive growth since the collapse of the Soviet Union) onward. Despite this, however, we know mortality rates did not improve proportionately.

**Figure 4: Comparison of total health spending as percentage of GDP 2002-2008**  
 (Source: World Health Organization)



Further, as a percentage of GDP, Russia’s health sector spending is significantly lower than G-8 countries, Eastern European (and also formerly communist) countries, and other former Soviet countries that are members of the Commonwealth of Independent States. Compared to Brazil and China (two other BRICs), Russian spending is lower than Brazil’s, but higher than China’s.

Naturally, higher healthcare spending might not mean better healthcare outcomes, but it is at least an initial indicator of what Russia spends, how this has changed in the last decade, and its spending relative to other countries as a percentage of GDP. (further versions of this paper will look at spending per citizen, etc.) In terms of adult mortality, however, Russia’s rate has remained high as gross spending has increased. Russian adult mortality is higher than all countries of comparison in figure 1. This suggests, therefore, that spending in Russia may or may not be adequate, but it is evidently not stemming the tide of mortality, and may be less efficient than other countries.

We look next, then, at an initial measure of relative efficiency in spending. Figure 5 below, compares the efficiency of private and public health spending and standardized mortality rates due to non-communicable disease in East European, CIS and select European and North African countries. Figure 5 indicates that Russian spending is relatively inefficient – relative to Tunisia for example, Russia is spending about the same amount as percentage of GDP, but produces a higher rate of death from non-



Given that Russia's spending has gone up in absolute terms as GDP has risen, but not as a percentage of GDP (Figure 4). Spending relative to mortality due to non-communicable disease is evidently inefficient (Figure 5). It is reasonable, therefore, to look further into how resources are distributed in the Russian public health system over time. It could be that the Russian state is simply spending on the wrong kinds of interventions and therefore are not bringing down the mortality rate as a result.

Table 2 (below) shows us some basic indicators of the Russian public health system from 1992-2009, which should be somewhat reflective of Russian health care priorities. There have been some notable changes in the number of physicians (big increases), number of hospitals and hospital beds (big decreases), and a slight increase in the capacity of polyclinics to see patients.

**Table 2: Distribution of Resources in Russian Public Health System 1992-2009**

9.1. BASIC INDICATORS OF PUBLIC HEALTH

(end of year)

	1992	1995	2000	2005	2006	2007	2008	2009
<b>Number of physicians, persons:</b>								
total, thou.	637	654	680	690	702	707	704	711
per 10 000 population <sup>1)</sup>	42.9	44.4	46.8	48.8	49.4	49.8	49.6	50.1
<b>Number of medium-level medical personnel, persons:</b>								
total, thou.	1709	1629	1564	1530	1545	1542	1511	1518
per 10 000 population <sup>1)</sup>	115	111	108	108	109	109	106	107
<b>Number of hospitals, thou.</b>	12.6	12.1	10.7	9.5	7.5	6.8	6.5	6.5
<b>Number of hospital beds <sup>2)</sup>:</b>								
total, thou.	1940	1851	1672	1575	1554	1522	1398	1373
per 10 000 population <sup>1)</sup>	131	126	115	111	109	107	99	97
<b>Number of medical institutions rendering out-patient services to population, thou.</b>	20.7	21.1	21.3	21.8	18.8	18.3	15.6	15.3
<b>Capacity of polyclinics, number of patients' visits per shift</b>								
total, thou.	3321	3458	3534	3638	3646	3673	3651	3658
per 10 000 population <sup>1)</sup>	224	235	243	257	256	259	257	258
<b>Number of maternity consultation offices, children's polyclinics, out-patient departments (independent), number of medical institutions with maternity centers and children's sections, thou.</b>	14.1	15.6	16	15	13.5	11.5	11.7	11.7
<b>Number of beds for pregnant women and women after confinement, thou.</b>	113	105	91	82	83	82	81	81
<b>Number of medical and obstrical stations, thou.</b>	46.8	45.8	44.6	43.1	42.3	39.8	39.8	38.9

*(Source: Russian Federal State Statistical Services, 2010)*

Notable in table 2 is that the number of physicians per 10000 population has increased significantly from 1992 to 2009, yet adult mortality due to non-communicable diseases like CVD did not decrease proportionately. Further, the patient capacity of polyclinics and their numbers also increased significantly in this period, yet also had no significant

positive effect on mortality. Indeed, it would seem that the more doctors trained, and the higher the capacity of polyclinics, the higher is adult mortality by 2006! This could be a result of inefficiency of spending or low educational levels of physicians, or the behavior of individual Russians in interaction with these other variables. Regardless, we are left with the following puzzle: *As spending has increased in the Russian healthcare sector, adult mortality due to non-communicable disease (CVD in particular) has increased or held steady above the level it was at in 1994 – a time of great economic turmoil.* The problem then, does not appear to be lack of spending on healthcare. We turn instead to look at some initial indicators of governance to see whether these might have some impact on health care outcomes (mortality) over time.

#### ***Part IV. Political Variables and the Russian Mortality Paradox***

The crux of Russia's mortality paradox is this: Why has cardio vascular mortality increased even as the economy has improved? We know the explanation is not any significant increase in Russian's individual smoking or drinking habits. Similarly, health spending increased from 2000 to 2010 relative to the 1990s, yet mortality has remained stubbornly high. The problem, therefore, is not a lack of money, although it may have something to do with the efficiency of the healthcare system. It may also have to do with political factors.

To date, we have a very weak understanding of how variables like relative levels of government accountability, political rights and freedoms, and corruption may impact the provision of public goods and services (governance). We know from other contexts that corruption is a drag on growth and is inefficient in many contexts. Could increased corruption, and a decline in political accountability, political rights and freedoms between the 1990's and 2000's have a negative impact on the provision of healthcare services and or on health outcomes like adult mortality?

The intuition for this theory is that the one big thing – beyond rapid economic improvement -- that has changed in Russia when comparing the 1990s and 2000s is the quality of open governance. In 2011, Russia ranked 146<sup>th</sup> on Transparency International's comparative corruption rating (down from 82<sup>nd</sup> in 2000); voice and accountability has declined drastically according to Freedom House and Polity IV such that Russia was ranked “not free” from 2004 through present. In addition, President Putin has repeatedly cracked down on civil society organizations, some of which are health related or that provided patches in Russia's state healthcare system. Could these variables affect adult mortality? If so, then how?

Recent work on “spontaneous privatization” in Russian healthcare by Linda Cook provides some initial clues.(Cook, 2011) Cook argues that the legacy of the Soviet healthcare system was resistance to privatization and neo-liberal reform. As with other sectors of the post-Soviet Russian economy, political struggles of the 1990s left Russia with a semi-reformed healthcare system that gave rise to system of side payments for services within the Russian healthcare sector. Cook adds,

Efforts by the Putin administration to strengthen state regulation and

equity produced limited results. The burden of household health expenditures remained strongly income-regressive, most patients paid for access to the minimum state “Guaranteed Package” of medical services, and a market-like system of informal payment requirements became institutionalized. Evidence from multiple national and regional surveys over the past two decades shows that non-state provision has failed to produce more equality, efficiency, or accountability. NSP [non-state provision] does have profound distributive and political consequences: formal privatization has benefited mainly the wealthy; inequality of access among socio-economic strata and regions has worsened over time; and levels of exclusion and abstention from medical care have become substantial. Spontaneous privatization has produce vested interests that undermine state efforts to enhance equality and performance. “Grassroots corruption” in health care has created an inescapable ‘corruption risk’ for citizens as they engage with the public sector to meet everyday basic needs. (p. 1)

This type of corruption in health care provision might hit Russian men harder because they start off in worse position in terms of health. Russian men have more bad habits, so their rate of mortality is higher relative to women to begin with. Couple this with not getting reliable access to medical care to prevent or treat cardiovascular disease and this may result in their increased mortality rates.

We test this set of propositions through an initial, simple model that takes the log of male mortality rates from 1996-2009 as our dependent variable and World Bank Governance Indicators from the same period as our independent variables.<sup>1</sup>

Results appear in table 3 below:

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<sup>1</sup> The World Bank Governance data from 1996-2009 has measures ranging from -2.5 to +2.5; closer to +2.5 the better governance. We had a missing data problem in 1997, 1999 and 2001 in the World Bank data. To correct this problem an average the year before and after the missing year was done.

There are two significant results in table 3, below. First, voice and accountability appear to matter in explaining increases in Russian male mortality. For every 1 unit increase in voice and accountability measures, we see a 12.2 percent decrease (i.e. mortality improves) in mortality. Second, control of corruption seems to decrease mortality rates: for every one unit increase in corruption control, we see a 7.8 percent decrease in mortality.

It could be then, that weak state regulation of healthcare provision by regional hospital administrators, and individual doctors and nurses, has effectively corrupted the system such that fewer Russian men are accessing the healthcare system to prevent cardiovascular disease or at least get a diagnosis. Rather than pay what is effectively a bribe for care, it could be that Russians simply avoid going to the doctor. Since men in Russia have more bad habits than women, they could be disproportionately affected by corruption in the healthcare system. Further, the lack of any avenue to voice complaints to the state regarding corruption or lack of access or provision of public goods and services, like health care, could further exacerbate the adult male mortality crisis, despite more money being spent by the state in the health sector.

**Table 3: World Bank Governance Indicators and Russian Adult Male Mortality 1996-2009**

Independent variable	Coefficient	Significance	Interpretation
<b>Voice/acctblty</b>	0.12238	<b>0.00426 (0,1%)</b>	1 unit increase in voice and acct decrease on mortality rate in 12%
Political_stability	-0.023587	Not significant	
Gov_effectiveness	0.06022	Not significant	
Regulatory_quality	0.05133	Not significant	
Rule_of law	-0.025332	Not significant	
<b>Corruption Control</b>	0.078733	<b>0.0398 (1%)</b>	1 unit increase in control corruption, decrease of mortality rate in 7.8%

Given Cook's description of the system of private health payments by patients to providers, it is worth looking further to see if certain parts of the Russian male population could be affected more than other. Besides becoming less free since the 1990's, Russia has become more socio-economically unequal. In the models below, therefore, we regress income inequality on male mortality rates from 1991-2009.

**Table x: Socio Economic Inequality and Russian Male Mortality, 1991-2009**

Independent variable	Coefficient	Significance	Interpretation
Model 1:gini (No Control Var)	0.58465	0.00019 (0%)	1 unit increase in gini, 58% increase in mortality rate
Model 2:gini (cv: log of gdp per cap)	0.66217	=0 (0%)	1 unit increase in gini, increase in 66% increase in mortality rate
<b>Model 3: gini(cv: log of the population)</b>	<b>0.6788</b>	<b>0.000127</b>	<b>1 unit increase in gini, increase in 67% increase in mortality rate</b>

(source: [http://www.gks.ru/bgd/regl/b11\\_13\\_p/Main.htm](http://www.gks.ru/bgd/regl/b11_13_p/Main.htm))

Regardless of whether we use a control variable or control variables in models 2 or 3, increases in socio-economic inequality, as measured by gini coefficients, increases male mortality rates significantly. In short, increased inequality in Russian society, means that more men die. Initial evidence indicates that it is men at the lower income scale who die disproportionately more (more about this in successive drafts). This could be because they are less able to pay the required "private" side payments to get access to healthcare that is supposed to be publically provided. (Cook, 2011)

Future research should test whether male mortality is disproportionately higher among lower income earners and/or among poor as opposed to wealthier regions of Russia. Further, it could be that there are some regions that have effectively ended the system of side payments. If this is the case, then we would want to investigate whether mortality rates are lower and whether there is freer access to what is supposed to be publically provided health care that could prevent, or treat cardio vascular disease earlier.

### **Conclusion**

What does all of this tell us about governance in Russia?

When we look to answer the question "what is killing Russians?" we have narrowed down the possibilities. It is not at all clear that the cause is bad habits alone, or a lack of funding in the healthcare system. Rather, it appears that it could be weak state capacity in regulating healthcare providers, and pervasive corruption, that fuels a deadly epidemic of cardiovascular disease.

Russia is an increasingly wealthy country that clearly has the financial ability and political interest in improving adult mortality rates, particularly among men. Russia's paramount leader, Vladimir Putin, has expressed grave concern regarding Russian healthcare and his predecessor, Dmitry Medvedev poured resources into the healthcare system. But the problem of high adult mortality rates in Russia is not a technical medical problem that doctors alone can fix with more resources. Rather, it appears to be a product of weak governance and a state that simply cannot regulate access to healthcare provision. Bad governance then, is literally bad for Russian health.