Health Targets in the Former Soviet Countries: Responding to the NCD Challenge?

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ABSTRACT

This article examines health target-setting in 12 former Soviet countries: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. We explored which health targets were set out in national health strategies and within the context of the United Nations initiative on the Millennium Development Goals (MDGs). We found that few former Soviet countries embraced health targets in national health strategies that were quantitative and time-bound. In contrast, measurable and time-bound targets were adopted by almost all countries in the region within the MDG initiative. As the MDG initiative failed to reflect the considerable burden of non-communicable disease in the region, and focussed entirely on communicable disease and mother and child health, this meant that health targets were missing for one of the most severe health challenges in the former Soviet countries. The quality of health data that could guide national health policies is another major challenge for the control of both communicable and non-communicable disease, as well as improvements in mother and child health.

Key Words: Health targets, health indicators, Millennium Development Goals, Commonwealth of Independent States, Eastern Europe

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INTRODUCTION

The purpose of health targets is to improve population health through more rational and transparent health policy. Health target-setting is generally a step-by-step process, starting with general principles and values, and leading to long-term goals. Goals can be further specified in objectives, resulting in measurable and time-bound qualitative or quantitative targets.[1] Targets are distinct from health indicators. The latter simply measure current health status, whereas targets imply a political decision to take action and achieve improvements of indicators.[2]

The World Health Organization (WHO) first introduced the concept of health targets in its global 1981 Health for All strategy, adapting the targets in 1984 to the WHO European region.[3] Ideally, health targets should be SMART: specific (setting out the target to be met); measurable (allowing it to be monitored); accurate (ensuring that fulfilment is recognizable); realistic (challenging, but achievable) and time-bound (with a clear time frame).[4] Establishing health targets requires appropriate and accurate health data.

Health targets often depend on routine data reported to international health databases, such as WHO's European Health for All Database (itself an outcome of the Health for All strategy), as well as other regular sources of information, such as annual health surveys. Ideally, data collection is followed by data analysis, continuous monitoring and evaluation of progress. In order to successfully implement health targets, the collaboration of key actors and the development of ownership and accountability are essential.[5] All of this requires adequate funding. Thus, health targets are only useful and achievable if they are SMART, embedded in an overarching, long-term health strategy, accepted by stakeholders at all levels and sufficiently funded.[6]

Health targets have been adopted by many European countries, but with greatly varying degrees of success.[7] The challenges have been especially great for the 12 former Soviet countries of Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.[8] It is the latter countries, by current Western standards characterized by a deficiency of health policy and planning,[9] that are the focus of this article.

In the Soviet period, health targets were vague and unspecific, mostly based on ideological principles and enshrined in successive five-year plans. The focus was on inputs rather than outputs,[10] in particular quantitative measures such as increased numbers of hospital beds and health workers.[11] After the dissolution of the Soviet Union, the newly independent states

gradually started to restructure their health systems and develop new health strategies, often supported by external agencies, such as WHO, the World Bank and a range of bilateral donors.[12]

This article provides a comparative overview of the current state of health targets in the 12 former Soviet countries that have remained outside the European Union. It is based on a review of the academic literature, the Health Systems in Transition (HiT) country profiles produced by the European Observatory on Health Systems and Policies for each of the 12 countries, the WHO health system performance assessments (available for Georgia and Armenia), the United Nations website for Millennium Development Goal (MDG) indicators,[13] as well as national MDG progress reports.

We first explore the Soviet practice of health target-setting prior to the USSR's dissolution in 1991, which helps to understand current challenges in health target-setting. We then examine post-Soviet experiences, providing comparative information on target-setting in each of the 12 countries. This is followed by a discussion of data quality and some concluding observations.

HISTORICAL BACKGROUND: SOVIET PRACTICES PRIOR TO 1991

Lenin's famous remark: "If socialism cannot conquer the lice, then the lice will conquer socialism"[14] referred to the threat that recurrent epidemics of communicable disease—including typhus, dysentery and smallpox—posed to the stability of the newly established Soviet regime.[15] Creating a universal health system geared towards eradicating communicable disease was a priority on the Bolsheviks' agenda.[16] Health care was seen as a public good and every citizen's right; it strived to be egalitarian.[17] Improved population health was also important for an efficient and functioning labour force for the industrialization of the country between the two World Wars.[18] Health care became highly centralized, tax-funded and entirely provided by the state. The way forward to tackle communicable disease was first outlined in 1924 in an article by Nikolai Semashko, the first People's Commissar for Public Health. Semashko presented a mission statement and objectives of the sanitary epidemiological (san-epid) service, giving direction to the development of the Soviet health system in subsequent years. The san-epid service developed into an extensive network of public health centers distributed throughout the entire Soviet Union. It was tasked with gathering and analyzing epidemiological data, with the aim of preventing and

eradicating communicable disease through preventive interventions such as vaccination.[16]

Clinical care was largely provided in hospitals. Primary health care, in urban areas provided by polyclinics and in rural areas by ambulatory facilities and feldsher-midwifery points, had a lower status and offered poorer levels of care.[8,19-21] From the 1930s onwards, medical education was no longer provided by universities, but by institutes established and controlled by the Ministry of Health, undermining the quality of medical education.[22] Furthermore, professional medical associations had been abolished and a quality control system for health care providers was lacking.[23,24] Professionals had no access to the international scientific literature; the small number of domestic journals was obliged to publish in strict conformance with communist ideals and slogans, and censorship was rife.[25]

The responsibility for health target-setting in the Soviet Union was entirely in the hands of the Central Committee of the Communist Party, a small elite group operating from Moscow.[25] In addition, all health-related data, passed onto and processed by the State Committee for Statistics (Goskomstat), were known to be unreliable, partly due to severe punishments if data did not conform to expected outcomes. Targets were non-specific, based on successive five-year plans, and did not take into account existing evidence.[11]

By the 1960s, the Soviet system had brought many communicable diseases under control. This achievement was possible due to the high priority given to communicable disease control, relatively straightforward and easily delivered interventions (such as vaccinations), and the nature of the regime, which facilitated country-wide compliance.[15,25] Subsequently, much less attention was paid to health-related issues, as demonstrated by low levels of government funding to health.[26] In fact, the health status of the population notably worsened from the 1960s onwards.[27] Officially recorded infant mortality increased from 22.9 per 1,000 live births in 1971 to 26 in 1985, even though the Soviet definition of live birth undercounted infant mortality.[28,29] Furthermore, the cardiovascular disease burden increased dramatically after the 1960s and there was also a surge in alcohol consumption.[28] The epidemiologic transition from communicable to non-communicable disease[30] was recognized, but the Soviet health system was poorly positioned to respond to it.[22]

With only 4.5 percent of the state budget allocated to health in 1985, the health system was underfunded and heavily neglected. Although health services were nominally free at the point of use, the underfunding of the

system, characterized by low salaries and lack of medication, had made it impossible to keep health care free in practice, giving rise to informal payments.[24] At the same time, parallel (or "closed") health systems were in place, in which elite government employees, as well as those from certain industries, were entitled to better funded health care of higher quality. This exacerbated inequalities and inefficiencies in health care provision.[28] Staff numbers were high, but health workers lacked sufficient training, sophisticated equipment and adequate working conditions.[31] When Gorbachev came to power in 1985, the shortcomings of the Soviet health system were for the first time openly addressed in public. The policy calling for increased transparency—*Glasnost*—eventually led to restructuring attempts—*Perestroika*.[28]

POST-SOVIET HEALTH TARGET-SETTING

After the Soviet Union broke apart, each of the former federal Ministries of Health became responsible for health policy and planning. They often lacked technical capacity for doing so and were confronted with the Soviet legacy of an oversized network of health facilities, as well as the transitional crisis in which government expenditure for health plummeted. The countries gradually embarked on health reforms in the 1990s, but often retained many features of the Soviet system. All aimed to strengthen primary health care and to downsize the hospital sector, and many introduced health insurance systems.[8] Decentralization was another common element of reforms in several countries, and there are also attempts to reorganize public health services.[32] International agencies, such as the World Bank and WHO, as well as various bilateral partners, assisted in reform efforts.[10]

Health reform efforts were, to various degrees, guided by national health strategies. However, most strategies failed to have clear health targets. Armenia currently lacks a national health strategy, although a working document has been published. By contrast, Tajikistan's 2002 Health Care Strategy outlined seven clearly defined targets to be achieved within a specified timeframe.[33] Kazakhstan's national health strategy also set out a series of clearly defined and time-bound health targets.[34] Russia's health policy aims to increase life expectancy to 75 years by 2020. In the remaining eight countries, the health targets included in national health strategies were formulated in qualitative terms and often did not have a clear timeframe (Table 1).

Table 1

Health targets or key objectives in national health policies or strategies

Country	National Health Policy or Strategy	Health Targets or Key Objectives
Armenia	A national health strategy is in development since 2011. Existing policy documents are the basis for a new health law and development of concept papers.	Not specified.
Azerbaijan	Concept for Health Care Reform drafted in early 2008 but not yet formally approved.	Strategies and conceptual notes have been developed around specific health care priorities, including a Reproductive Health Strategy, a Mental Health Strategy, and a Tuberculosis Strategy.
Belarus	National Programme on Demographic Security of the Republic of Belarus for 2007-2010	The explicit objectives of the health system are described as being rooted in the Belarusian Constitution, which guarantees citizens universal access to health care services, free at the point of use. Implicit objectives for the health system include: protecting the health of the economically active population and addressing demographic concerns about low birth rates, high mortality rates and the shrinking Belarusian population.
Georgia	Strategic Health Plan for Georgia 2000-2009	The priorities of this health strategy include: 1) health financing by the state as well as through social insurance, while maintaining the principles of solidarity and equity, and 2) a leading role for primary health care, with an emphasis on health promotion and disease prevention.

Table 1 contd.

Kazakhstan	Strategic Development Plan 2020	This health strategy, adopted in 2010, focussed on improving the accessibility and quality of health services. It had a number of clearly specified health targets with a defined timescale, including: increasing life expectancy to 69 years by 2015 and 72 years by 2020; decreasing maternal mortality by 1.5 times by 2015 and by 2 times by 2020; decreasing infant mortality by 1.5 times by 2015 and by 2 times by 2020; decreasing overall mortality by 15% by 2015 and by 30% by 2020; decreasing TB morbidity by 10% by 2015 and by 20% by 2020. Other targets envisaged: increasing physical activity among the general population to 25% by 2015 and to 30% by 2020; and decreasing smoking, drug and alcohol use by 15% by 2015. The health strategy also envisaged structural changes in health financing and management, health care delivery and the accessibility and quality of drugs. Key targets included: introducing free choice of health care providers by 2015; and increasing the share of primary health care services provided by general practitioners to 30% of total outpatient services by 2015.
Kyrgyzstan	Health Reform Programme for 2006-2010 - Manas Taalimi	This health strategy had the following main objectives: 1) solidifying and expanding health financing reforms; 2) building the capacity of feldsher-midwifery points and ambulance services, with the aim of increasing the effectiveness of primary health care; 3) optimizing specialized care and regulating access to specialist health services, including high-technology health services; 4) improving the quality of health services through the introduction of effective internal management, promotion of the principles of evidence-based medicine, rational pharmaceutical management, better laboratory services, reduced hospital infections and improved medical waste management; 5) orienting health services towards achieving the MDGs, based on a strengthened role of public health and the active involvement of communities, NGOs, the mass media and local self-governance bodies; and 6) improving the quality of graduate, postgraduate and continuous education through revised accreditation requirements for educational institutions and programmes and new mechanisms to recruit and retain health personnel, particularly in rural areas. Although these objectives were specified in qualitative terms, a strong monitoring and evaluation system was developed to monitor implementation. Monitoring was based on a series of key indicators, including for example: out-of-pocket payments on health in the two poorest quintiles as a share of total household expenditure; the level of co-payments relative to the official mean salary; regional deviations from the average national per capita expenditure.

Table 1 contd.

Moldova	National Health Policy 2007-2021; Health System Development Strategy 2008-2017	These two documents include the following key objectives: 1) continuous improvement of population health; 2) financial risk protection; 3) reducing inequalities in the use and distribution of health care services; 4) enhancing user satisfaction; and 5) restructuring the health system to improve performance and population health regardless of the limited resources available.
Russia	National Health Concept to the year 2020	This policy document set ambitious targets to be achieved by 2020, including increasing average life expectancy to 75 years and increasing government expenditure on health to 5.2 % of GDP. Further goals are: increasing the Russian population to 145 million, and reducing the mortality rate to 10 deaths per 1000 population by 2020. Major areas of development include health promotion, provision of high-quality medical care, improving outpatient drug supply, improving the provision with human resources, stepping up biochemical research, and improving the use of IT in health care. In the area of health promotion, the aim is to drastically reduce risk factors for non-communicable disease through improving health education, installing an efficient system of measures to combat harmful behaviours, providing healthy food, developing mass physical activity, mitigating the risks associated with adverse environmental factors, enhancing the motivation of secondary educational establishments to shape healthy lifestyles among students, encouraging citizens to lead healthy lifestyles and getting employers to participate in the protection of their workers' health.
Tajikistan	2002 Health Care Strategy	This national health strategy, which covered the period up to 2010, built on the WHO Health for All strategy. Its aims were to: 1) ensure access to medical and preventive services of high quality; 2) decrease maternal mortality by 25-30% between 2002 and 2010; 3) decrease the abortion rate by 30%; 4) decrease infant mortality to 20 per 1000 live births; 5) decrease most prevalent causes of maternal and child morbidity; 6) ensure access to information about healthy lifestyles; and 7) improve strategies to protect children.
Turkmenistan	Socioeconomic Reform Strategy 2000-2010	This strategy had the following main objectives: improving mother and child health; improving the prevention and control of tuberculosis, sexually transmitted infections, viral hepatitis and HIV/AIDS; and rationalizing hospital care and strengthening primary health care.

Table 1 contd.

Ukraine	2007 National Plan for the Development of the Health System up to 2010	This national health strategy identified the following key strategies: 1) Strengthening the financial basis of the health system; 2) increasing efficiency; 3) linking government commitments with available financial resources; 4) reorganizing health service provision, based on the development of primary health care; 5) setting up an effective quality management and control system; 6) renovating health facilities; 7) implementing rational pharmaceutical policies; and 8) improving personnel management.
Uzbekistan	1998 Presidential Decree on reforming the Uzbek health system	This document identified a number of priority areas in the health system, including: maternal and child health, the development of the private sector, quality of care and a state-guaranteed package of medical services free at the point of delivery. In addition to identifying priority areas, the document also set clear targets to be achieved in the form of structural indicators. Examples include: transformation of the sanitary-epidemiological services into a single organizational structure within the Ministry of Health by 2000; and transition to a country-wide two-tiered primary care system by 2005.

Source: Authors' compilation

HEALTH TARGETS WITHIN THE MDG INITIATIVE

In striking contrast, almost all of the 12 countries have been involved in setting quantitative and time-bound health targets as a result of the MDG initiative, originating from the UN Millennium Declaration, signed in 2000 by 189 countries.[35] Three of eight development goals (Goals 4, 5 and 6) are directly concerned with health, targeting child mortality, maternal health, and HIV/AIDS, malaria and "other diseases". They are further specified in seven health targets and 19 corresponding indicators, with a further disaggregation expected by sex and locality.

Relevant data are collected nationally and submitted through progress reports to the UN, which processes and publishes the data. The UN website specifies whether data have been produced and reported by the country, estimated by the agency (in case of lack of reporting, when country data are not available, where there are multiple sources or issues with data quality), or produced by the country and adjusted by the agency for international comparability.[36]

Table 2 illustrates whether countries have adopted the original MDG targets and indicators and shows the baseline health indicators that have been used. Due to missing UN estimates, Moldova is not presented in the table. We also excluded targets on malaria, as it is not a major health concern for most of the countries discussed here.

We found that most countries had adapted all or some MDG targets and their associated progress measurement indicators. Armenia, Kazakhstan and Kyrgyzstan are exceptions, in that they adopted the majority of MDG targets and indicators in their original form.[37-39] Several countries adopted a baseline year different from 1990, ranging from 1995 to 2006, in view of political instability and lack of reliable data during the early years of transition. This was the case for Azerbaijan, Georgia, Moldova, Turkmenistan, Ukraine and Uzbekistan.[40-45]

Significant discrepancies emerge between data reported by national authorities as compared to those reported by international agencies. For example, the Armenian MDG progress report noted that infant mortality was 23.8 in 1990; however, the official UN site for the MDG indicators indicates that it was 47.2, allegedly based on country-level data. High discrepancies can also be observed in maternal mortality (e.g., for Kazakhstan, Russia and Turkmenistan). Interestingly, in the case of countries that have adopted the MDGs with minimal or no modification (Armenia, Kazakhstan and Kyrgyzstan), discrepancies are among the highest.

Table 2

MDG goals and indicators adopted by former Soviet countries

Selected MDG Goals and Indicators	Armenia			Azerbaijan		
	Target adapted	Country data (1990)*	UN estimate (1990)	Target adapted	Country data (1990)	UN estimate (1990)
Reduce Child mortality						
Under-5 mortality rate per 1,000 live births	No	23.8	47.2	Yes	Not available	94.5
Infant mortality rate per 1,000 live births		18.3	40.4		22.91	75.4
Proportion of 1-yr old children immunised against measles		95.2	93 (1992)		Not available	52 (1992)
Improve Maternal Health						
Maternal mortality ratio per 100,000 live births	No	32.6	46 (modelled)	Yes	Not available	56.0 (modelled)
HIV/AIDS						
People living with HIV (15-49) (%)	No	<0.01 (2000)	0.00	Yes	0.01	<0.01
HIV incidence rate (15-49)		Not available	0.01 (1995)		0.01	<0.01
Incidence per 100,000		16.6	33.0		37.38	110
Prevalence		Not available	56.0		Not available	222.0
Tuberculosis						
Mortality rate (cases per 100,000)	No	Not available	5.6	No	Not available	17.0
Proportion of cases detected and cured under directly observed treatment short course (%)		18.5 (1995)	55 (1995 country data)		Not available	33 (1990)

Table 2 contd.

Selected MDG Goals and Indicators		Belarus			Georgia		
		Target adapted	*Country data (2000)*	*UN estimate (2000)*	*Target adapted*	*Country data (2000)*	*UN estimate (2000)*
Reduce Child mortality	Under-5 mortality rate per 1,000 live births	Yes	11.6 (2001)	13.7	Yes	24.9	32.6
	Infant mortality rate per 1,000 live births		9.31	10.9		21.1	28.6
	Proportion of 1-yr old children immunised against measles		98.2	98		94.8	73
Improve Maternal Health	Maternal mortality ratio per 100,000 live births	Yes	21	31.0	Yes	49.2	58.0 (modelled)
HIV/AIDS	People living with HIV (15-49) (%)	Yes	0.2 - 0.3 (2009)	0.1	Yes	Not available	0.00
	HIV incidence rate (15-49)		11.1 (2009)	0.01 (1997)		3.4	0.01 (2003)
	Incidence per 100,000		61.6	74.0		84	107.0
	Prevalence		201	94.0		Not available	137.0
Tuberculosis	Mortality rate (cases per 100,000)	Yes	8.3	8.5	Yes	7.6	20.0
	Proportion of cases detected and cured under directly observed treatment short course (%)		85 (1996)	91.0		63	87

Table 2 contd.

Selected MDG Goals and Indicators	Kazakhstan			Kyrgyzstan		
	Target adapted	Country data (1990)	UN estimate (1990)	Target adapted	Country data (1990)	UN estimate (1990)
Reduce Child mortality						
Under-5 mortality rate per 1,000 live births		34	57.0		41.3	70.3
Infant mortality rate per 1,000 live births	No	24	48.0	No	30	57.9
Proportion of 1-yr old children immunised against measles		95 (1995)	89 (1992)		95	94 (1992)
Improve Maternal Health						
Maternal mortality ratio per 100,000 live births	No	55	92.0	No	62.9	73.0 (modelled)
HIV/AIDS						
People living with HIV (15-49) (%)	No	Not available	<0.01	No	Not available	0.00
HIV incidence rate (15-49)		<100 (1996)	0.02 (2001)		0.07	0.01 (2001)
Incidence per 100,000		65.8	139.0		52.1	143.0
Prevalence		Not available	255.0		52.1	280.0
Tuberculosis **Mortality rate (cases per 100,000)**	No	13.53	41.0	No	6.7	36.0
Proportion of cases detected and cured under directly observed treatment short course (%)		74 (1997)	75 (1997)		85.4 (1998)	37

Table 2 contd.

Selected MDG Goals and Indicators	Russian Federation			Tajikistan		
	Target adapted	*Country data (1990)*	*UN estimate (1990)*	*Target adapted*	*Country data (1990)*	*UN estimate (1990)*
Reduce Child mortality						
Under-5 mortality rate per 1,000 live births	No	21.5	27.3	Yes	119.7	114.3
Infant mortality rate per 1,000 live births		17.4	23.0		88.8	89.1
Proportion of 1-yr old children immunised against measles		<90	83 (1992)		Not available	68.0 (1992)
Improve Maternal Health						
Maternal mortality ratio per 100,000 live births	No	47.4	74.0	No	90	94.0 (modelled)
HIV/AIDS						
People living with HIV (15-49) (%)	No	Not available	0.00	Yes	0	<0.01
HIV incidence rate (15-49)		0.07	Not available		0.04	0.01 (1994)
Tuberculosis						
Incidence per 100,000	No	Not available	107.0	No	46.39	93.0
Prevalence		Not available	220.0		Not available	172.0
Mortality rate (cases per 100,000)		Not available	46.0		Not available	18.0
Proportion of cases detected and cured under directly observed treatment short course (%)		65.0 (1995)	Not available		88 (1995)	Not available

Table 2 contd.

Selected MDG Goals and Indicators	Turkmenistan			Ukraine		
	Target adapted	*Country data (2000)*	*UN estimate (2000)*	*Target adapted*	*Country data (2001)*	*UN estimate (2001)*
Reduce Child mortality **Under-5 mortality rate per 1,000 live births**	Yes	Not available	71.4	No	14.9	17.6
Infant mortality rate per 1,000 live births		21.3	58.7		11.3	15.1
Proportion of 1-yr old children immunised against measles		Not available	96		Not available	99.0
Improve Maternal Health **Maternal mortality ratio per 100,000 live births**	Yes	52	91.0 (modelled)	Yes	23.9	35.0 (2000)
HIV/AIDS **People living with HIV (15-49) (%)**	Yes	0	Not available	Yes	Not available	0.9
HIV incidence rate (15-49)		0	Not available		14.2	0.05
Incidence per 100,000		82.3	92		83.72 (2002)	84
Prevalence		Not available	105		Not available	113
Tuberculosis **Mortality rate (cases per 100,000)**	Yes	Not available	18.0	No	22.4	12.0
Proportion of cases detected and cured under directly observed treatment short course (%)		81.0	97		43 (1996)	84

Table 2 contd.

Selected MDG Goals and Indicators		Target adapted	Uzbekistan	
			Country data (2002)	UN estimate (2002)
Reduce Child mortality	Under-5 mortality rate per 1,000 live births	Yes	73.3	58
	Infant mortality rate per 1,000 live births		26 (1995)	48.8
	Proportion of 1-yr old children immunised against measles		98.5 (2004)	97
Improve Maternal Health	Maternal mortality ratio per 100,000 live births	Yes	34 (2001)	33 (2000)
HIV/AIDS	People living with HIV (15-49) (%)	Yes	230	0.00
	HIV incidence rate (15-49)		3.88	0.00
Tuberculosis	Incidence per 100,000	No	43	128.0
	Prevalence		Not available	211
	Mortality rate (cases per 100,000)		Not available	24.0
	Proportion of cases detected and cured under directly observed treatment short course (%)		80	Not available

Source: Authors' compilation, based on United Nations website for MDG indicators[13]

Belarus stands in sharp contrast to most other countries of the region, as it has adopted significantly different targets for child and maternal mortality. The country's child mortality is the lowest among the former Soviet countries (Table 3) and close to rates in Western European countries, so that the related MDG goals are not relevant to Belarus. Instead, the country modified them to: 1) reduce infant morbidity; and 2) reduce under-5 disability prevalence rate. However, no new indicators were introduced to measure these targets.

Russia adopted the MDGs, but clarified that they did not constitute a formal basis for development planning.[46,47] It aimed to reduce maternal and under-5 mortality by half between 1990 and 2015, rather than by three-quarters, as envisaged in the MDGs.[46] Russia also recognized that premature mortality among the working-age population is the main challenge for national health policy.[46]

A MAJOR CHALLENGE: DATA QUALITY

As our overview of health-related baselines, goals and indicators within the MDG initiative illustrates, the quality of health data in the former Soviet countries is a major challenge for any meaningful health target-setting. There are significant discrepancies between officially reported data and nationally representative surveys, such as the series of Demographic and Health Surveys and UNICEF's Multiple Indicator Cluster Surveys. Consequently, official data on health indicators vary greatly from estimates by international agencies. Table 3 illustrates these differences with regard to life expectancy, and maternal and infant mortality.

Assuming that international estimates better capture the state of population health, official rates overestimate life expectancy by 5.8 years in Azerbaijan, 5.7 years in Tajikistan and 4.7 years in Kazakhstan. Official data on maternal mortality undercount true rates by 60.1 maternal deaths per 100,000 live births in Turkmenistan, 46.2 maternal deaths in Georgia and 28.2 maternal deaths in Kazakhstan. For infant mortality, official rates undercount actual rates by 37.9 infant deaths per 1000 live births in Tajikistan, 29.2 infant deaths in Azerbaijan and 29.4 infant deaths in Uzbekistan. It is noteworthy that Belarus has the least discrepancies among all three indicators.

What are the reasons behind these discrepancies? Although international reporting criteria, such as the live birth definition of WHO and the International Classification of Diseases, have been adopted by all former Soviet countries, in practice these are not uniformly implemented and the Soviet definition is still often used, leading to an underestimation of infant mortality.[33,47,48]

Table 3

Official rates and WHO estimates of key health indicators

Country	Life expectancy			Maternal mortality			Infant mortality		
	Official data	WHO estimate 2009	Difference	Official data	WHO estimate 2010	Difference	Official data	WHO estimate 2010	Difference
Armenia	73.50 (2009)	70	-3.50	8.92 (2010)	30	21.08	11.42 (2010)	18	6.92
Azerbaijan	73.78 (2007)	68	-5.78	15.70 (2010)	43	27.30	9.82 (2007)	39	29.18
Belarus	70.62 (2009)	70	-0.62	0.93 (2010)	4	3.07	4.68 (2009)	4	-0.68
Georgia	73.77 (2009)	71	-2.77	20.77 (2010)	67	46.23	11.20 (2010)	20	8.80
Kazakhstan	68.67 (2009)	64	-4.67	22.84 (2010)	51	28.16	16.48 (2010)	29	12.52
Kyrgyzstan	69.13 (2009)	66	-3.13	50.13 (2010)	71	20.87	22.30 (2010)	33	10.70
Moldova	69.44 (2009)	69	-0.44	44.47 (2010)	41	-3.47	11.76 (2010)	16	4.24
Russia	68.76 (2009)	68	-0.76	16.92 (2010)	34	17.08	7.61 (2010)	9	1.39
Tajikistan	73.72 (2005)	68	-5.72	46.54 (2009)	65	18.46	14.10 (2005)	52	37.90
Turkmenistan	66.10 (1998)	63	-3.10	6.92 (2010)	67	60.08	32.78 (1998)	47	14.22
Ukraine	69.70 (2009)	68	-1.70	23.31 (2010)	32	8.69	9.17 (2010)	11	1.83
Uzbekistan	70.54 (2005)	69	-1.54	20.95 (2010)	28	7.05	14.96 (2005)	44	29.04

Source: World Health Organization European Health for All Database.[56]

Several more challenges can be identified. First, there is a lack of resources and technical capacity. This is partly due to a lack of training and inadequate access to coding manuals. A more general lack of analytical and statistical training for researchers and decision-makers limits the usefulness of collected data.[50] Epidemiology and statistical analysis skills are still scarce.[50] Furthermore, in some countries, in particular in Central Asia and the Caucasus, health care facilities in rural regions still lack basic computing IT facilities, leading to the use of error-prone handwritten records.[33,51]

Second, health information systems are often characterized by fragmentation, duplication and other inefficiencies, making it difficult to link data and extract meaningful results. The various data-collection systems and agencies tend to work independently, and fail to coordinate or pool data effectively.[33,52] The lack of disaggregated epidemiological data is another concern.[48]

Third, anonymity is often not guaranteed. Communicable diseases such as tuberculosis, HIV/AIDS and sexually transmitted infections (STIs) are generally underreported, due to often non-anonymous data collection practices, leading to stigmatization.[33,48,53]

Fourth, the privatization of health care facilities is an issue, as it has not been accompanied by sufficient regulatory measures and the enforcement of mandatory data reporting. In almost all countries of the region, much data collection is limited to the public sector, leading to overall underreporting of a number of indicators.

Finally, there is outright data manipulation. Some facility managers exert pressure to comply with expected outcomes, particularly in infant and maternal health indicators, reminiscent of similar practices during the Soviet period, when failure to meet expectations led to severe punishment.[11] Concerns with regard to such practices were noted in Azerbaijan and Uzbekistan; in the latter country maternal deaths are considered to have arisen from a criminal offence.[48,54]

CONCLUSION

This article reviewed two areas of health target-setting in the former Soviet countries: national health strategies and the national targets and indicators used in the context of the UN's MDG initiative. We found that the health targets set out in the majority of national health strategies were not SMART. Only a few countries had embraced quantitative and time-bound health targets. In contrast, measurable and time-bound targets were adopted by almost all countries of the region within the MDG initiative. However, the

original targets were often adapted and different baselines for indicators used. Furthermore, there were significant discrepancies between officially reported national rates and estimates by international agencies.

National health strategies and national targets embraced within the MDG initiative seemed to be poorly coordinated and aligned. It appears that the setting up of MDG targets was largely externally driven and that there was a lack of coordination between national authorities and international agencies. This is one of the possible explanations for the significant discrepancies between officially reported national rates and estimates by international agencies.

Although the original targets were adapted by almost all countries of the region within the MDG initiative and different baselines for indicators were used, they were still of limited use for guiding national health policies. This is not surprising, as the MDGs failed to reflect the considerable burden of non-communicable disease in the former Soviet countries and were thus of limited use for guiding national health policies. It is abundantly clear that health policies in this region should include a major focus on non-communicable diseases, such as cardiovascular diseases and external causes of death.[55]

After the identification of health targets based on actual population needs and appropriate indicators to measure progress, it is indispensable to ensure a flawless collection of high-quality data. Yet, data quality emerged as another crucial challenge for meaningful health target-setting in the region. Setting and achieving health targets relies on high quality data and rigorous data management. Systematic collection of accurate, internationally comparable data for subsequent analysis by trained staff is a prerequisite for meaningful evaluation and informed decision making. While this article focussed on population health indicators, other areas of health system governance are also affected. One of these areas is health financing, where widespread informal out-of-pocket payments undermine many health system goals, but are extremely difficult to capture or to eradicate.[8]

Finally, the discrepancies between official country data and those collected or estimated by external agencies are a major cause for concern. Inaccurate data trivialize the scale of health problems and reduce the incentive to invest in health.

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