

Better noncommunicable disease outcomes: challenges and opportunities for health systems



Country assessment BELARUS

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**World Health
Organization**

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Abstract

Like many countries Belarus is facing a growing noncommunicable disease (NCD) burden. This report examines the opportunities and challenges for Belarus to accelerate improvement in cardiovascular and diabetes outcomes. Belarus has given priority to health, as evidenced by the relatively high public allocations to health and Belarus has managed to maintain good financial protection for its citizens. With NCDs responsible for most of the disease burden and increasing financial pressures, there is a need to strengthen efficiency, seek ways to rationalize service delivery and improve the quality of services. Belarus has achieved good results in scaling up tertiary care and treatment for CVD. There is substantial scope to scale up the most cost-effective interventions in CVD and diabetes control, including control of risk factors, such as smoking, alcohol misuse, poor diets and low physical activity. Hypertension and hyperlipidaemia are still under detected and undermanaged. The implementation of these core interventions will need to go hand in hand with a shift towards more comprehensive and efficient models of primary care and greater patient engagement and empowerment.

Keywords

CHRONIC DISEASE
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Acronyms used in this report

AMI	acute myocardial infarction
BAC	blood alcohol concentration
BMI	body mass index
BYR	Belarusian ruble
CI	confidence interval
CIS	Commonwealth of Independent States
COPD	chronic obstructive pulmonary disease
CVD	cardiovascular disease
DALY	disability-adjusted life year
DRG	diagnosis-related group
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FCTC	Framework Convention on Tobacco Control
FSU	former Soviet Union
GDP	gross domestic product
GMP	good manufacturing practices
GP	general practitioner
HITT	Health Systems in Times of Transition
HSS	health systems strengthening
IDF	International Diabetes Federation
IT	information technology
NCD	noncommunicable disease
NGO	nongovernmental organization
NHA	national health accounts
NRT	nicotine replacement therapy
PEN	package of essential noncommunicable (disease interventions)
PHC	primary health care
SDR	standardized death rate
THE	total health expenditure
UNDAF	United Nations Development Assistance Framework
VAT	value-added tax
YLL	years of life lost

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Introduction and rationale

Like many countries, Belarus faces a growing burden of noncommunicable diseases (NCDs), with cardiovascular diseases (CVDs) now the major cause of mortality. While mortality rates for CVD in Belarus have shown a downward trend over the past 10 years, all-cause mortality in the country is still significantly higher than the European average. This gap is largely attributable to the higher mortality from CVDs and the growing mortality rates of other NCDs. Addressing CVDs and diabetes is a key priority for the Ministry of Health of Belarus.

The assessment reported here was one of a series of country assessments of health systems achievements and challenges for NCD control. It employed the health systems strengthening (HSS) operational approach of the WHO Regional Office for Europe, and was informed by a conceptual framework for country assessments developed by the Division of Health Systems and Public Health and the Division of Noncommunicable Diseases and Life-Course Approaches. The first country assessments were undertaken in 2013; assessments have now been undertaken in eight countries: Belarus, Croatia, Estonia, Hungary, Kyrgyzstan, Republic of Moldova, Tajikistan and Turkey. Further assessments are planned.

The objectives of this country assessment were twofold. First, it aimed to produce pragmatic, contextualized and actionable national policy recommendations for strengthening the health system to support and accelerate improved NCD outcomes. It is envisaged that the assessment report and policy recommendations will feed into the national policy dialogue on health system strengthening and serve as background for future actions addressing NCDs. This particular country assessment will provide input towards development of the "Governmental Programme on the Prevention and Control of NCDs of the Republic of Belarus 2015–2020". Second, as part of a regional project, the assessment will feed into a region-specific platform for sharing knowledge and experience on common health system challenges and good examples of ways of addressing them. In addition, the assessment is expected to build the capacity of national and regional experts in policy analysis, policy development and implementation, through policy dialogue around health systems strengthening for NCDs.

The country assessment was carried out by a multidisciplinary team of regional experts and WHO staff. It was based on a structured guide, and was tailored to the specific situation of Belarus. Online meetings with the national members of the assessment team identified priority areas of the assessment and tailored the guidelines to the Belarus health system context. Each team member was allocated specific responsibilities for data collection and analysis. A multidisciplinary mission took place from 27 May to 3 June 2014. Intensive follow-up work continued after the mission. This assessment reflects the views of the experts participating in the review.

The country assessment team produced a Note on Preliminary Findings of the HSS NCD mission to Belarus, in order to inform the UN Interagency Task Force Mission on NCDs to Belarus, which took place from 14 to 18 July 2014.

The report is structured as follows.

- Section 1 provides an overview of the trends in key NCD outcomes (mainly mortality-based indicators) and inequalities.
- Section 2 assesses the coverage of core interventions for NCDs at population and individual level in Belarus.
- Section 3 discusses health system achievements for, and barriers to, core NCD interventions and services.
- Section 4 presents selected innovations and best practices in Belarus.
- Section 5 contains policy recommendations.



1. Noncommunicable disease outcomes

This section provides information on the current state and dynamics of NCD-related health outcomes in Belarus, especially mortality and inequalities related to NCDs, based on the indicators of the Global Monitoring Framework for NCDs.¹

1.1 Mortality

For many of the countries of the former Soviet Union, independence was accompanied by a sharp decline in health outcomes. In the early 1990s, many of these countries experienced a rise in mortality from non-communicable diseases (NCDs), such as cardiovascular disease (CVD), with rates remaining high until around 2005, when they started to fall (Fig. 1)

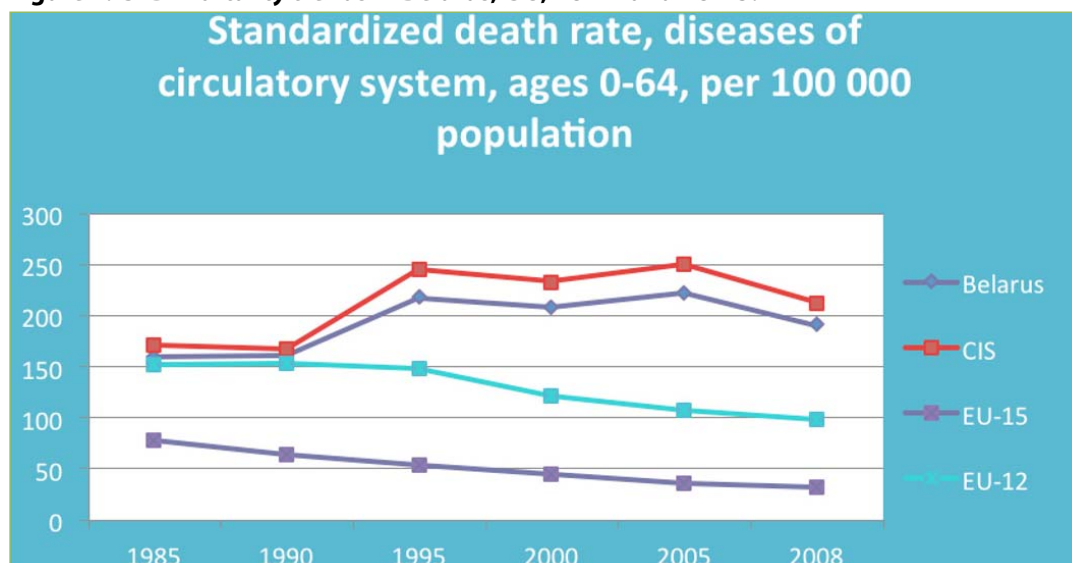
Despite the recent downward trend in some of the main causes of mortality, there remains a significant gap in life expectancy between the countries of the former Commonwealth of Independent States (CIS) and the EU-15 countries. Over half of this gap can be explained by circulatory disease mortality. Improvements in cardiovascular outcomes were responsible for over half the health gains made in the EU-15 in recent decades.²

NCDs are responsible for the large majority (89%) of mortality in Belarus, with CVDs accounting for the largest share (63%), followed by cancer (14%). Other main causes of mortality include injuries (9%) and other NCDs (9%) respiratory disease (2%) and communicable disease, maternal and child health and nutritional conditions (3%).³

Fluctuations in health outcomes since independence have not been as dramatic in Belarus as in many of the other CIS countries e.g. in the neighbouring Russian Federation or Ukraine. However, if no action is taken the overall burden of NCDs in Belarus is likely to grow in the coming decades. Belarus is experiencing a gradual ageing of the population, as a result of low birth rates and growing life expectancy: 23% of the population in Belarus is above retirement age (60 years for men and 55 years for women). As in other European countries, this has resulted in higher morbidity and mortality from NCDs and increasing financial and social demands on the health system of the country. These challenges are expected to increase if the health system does not adjust and respond appropriately.

Since 2005 CVD the largest cause of premature mortality in Belarus has shown a clear downward trend. With the exception of some types of cancer, there is a general downward trend in premature mortality from main NCDs. Specific mortality trends are summarized below (see also Table 1).

Figure 1. CVD mortality trends in Belarus, CIS, EU-12 and EU-15.⁴



Source: European health for all database (HFA-DB)

¹ http://www.who.int/nmh/global_monitoring_framework/en/

² Smith O, Nguyen SN. Getting better: improving health system outcomes in Europe and Central Asia. Europe and Central Asia report. Washington, DC: World Bank; 2013

³ World Health Organization - Noncommunicable Diseases (NCD) Country Profiles, 2014. Belarus

⁴ See annex 3

- **Cardiovascular diseases:** there has been a downward trend in mortality in recent years, from 171.7 per 100 000 population in 2009 to 148.4 per 100 000 in 2013.
- **AMI:** rates decreased from 6.1 per 100 000 population in 2009 to 4.8 per 100 000 in 2013.
- **Stroke:** mortality decreased from 33.9 per 100 000 population in 2009 to 26.0 per 100 000 in 2013.
- **Diabetes:** mortality has shown a downward trend in recent years, from 1.5 per 100 000 population in 2009 to 1.2 per 100 000 in 2013. However, the incidence is gradually increasing.
- **Cancer:** there was a decrease in overall cancer mortality from 84.7 to 80.7 per 100 000 population from 2009 to 2013. However, mortality from cervical cancer increased from 5.0 per 100 000 in 2009 to 5.9 per 100 000 in 2013, possibly associated with late identification of disease.

Table 1. Mortality rates from major NCDs.

Mortality rate per 100 000 population of working age		2009	2010	2011	2012	2013
Cardiovascular diseases	total	171.7	175.4	182.2	153.5	148.4
	males	285.8	291.3	302.0	255.5	245.3
	females	50.3	51.6	53.7	43.6	43.6
AMI	total	6.1	6.6	5.6	5.7	4.8
	males	11.2	12.0	10.2	10	8.8
	females	0.8	0.8	0.6	1.1	0.4
Strokes	total	33.9	32.3	33.8	27.6	26.0
	males	50.9	47.7	50.5	41.5	38.2
	females	15.8	15.9	16	12.8	12.8
Diabetes	total	1.5	1.5	1.3	1.2	1.2
	males	2.1	2.2	1.7	1.5	1.6
	females	0.9	0.9	0.9	0.9	0.8
Cancer	total	84.7	84.1	85.2	83.4	80.7
	males	119.7	115.9	117.1	115.4	110.9
	females	47.4	50.1	51	49	48.0

Source: National Statistical Committee of Belarus, 2014.⁵

With the current trends, the voluntary global targets of the global monitoring framework on NCDs, which include a 25% reduction in premature NCD mortality by 2025,⁶ seem achievable for some areas.

1.2. Inequalities and social determinants of NCDs

The majority of the premature mortality from NCDs in Belarus is among men. There is a significant gender difference in mortality indicators for NCDs, with a standardized death rate (SDR) for all causes twice as high in men as in women: 1728.3 per 100 000 and 790.1 per 100 000, respectively, in 2009⁷ According to the National Statistical Committee of Belarus the premature mortality rate from CVDs is 6 times higher in men than in women (245.3 and 43.6 per 100 000, respectively). However, between 2009 and 2013, there was a decrease in mortality in both women (50.3 to 43.6 per 100 000) and men (285.8 to 245.3 per 100 000). The most significant gender difference in mortality is from AMI – 8.8 per 100 000 for men and 0.4 per 100 000 for women in 2013 (20 times higher for males) (Table 2). This is in part attributable to the greater exposure of the male population to NCD risk factors, especially tobacco use and the harmful use of alcohol (see Section 2).

⁵ Aggregated data from national C51 forms on “Mortality by causes and age-groups”; received from Belarusian Centre for Medical Technologies, Computer Systems, Administration and Management of Health (BelCMT).

⁶ Baseline year 2010.

⁷ European Health for all database (HFA-DB) [online database]. Copenhagen: WHO Regional Office for Europe; 2014 (<http://data.euro.who.int/hfadbf/>, accessed 17 August 2014).

Table 2. AMI mortality per 100 000 population.⁸

	2009	2010	2011	2012	2013
Males	11.2	12	10.2	10	8.8
Females	0.8	0.8	0.6	1.1	0.4

The rural population of Belarus has worse NCD-related mortality indicators and a higher burden of NCDs. There is a geographical gradient in NCD outcomes, with the rural population of Belarus having lower life expectancy and higher premature mortality rates than those living in urban areas. In 2009, the premature mortality rate was 11% among the urban population and 24.2% among the rural population (3, 6). There are also geographical (regional) disparities in premature mortality rates: Minsk, 9.8%; Minsk region, 16%; and Vitebsk region, 16.2%.⁹



⁸ Aggregated data from national C51 forms cit bit pg 11

⁹ ibid

2. Coverage of core NCD interventions and services

This section explores the coverage of a number of core population interventions related to tobacco, alcohol, diet and physical activity, and the individual services related to CVDs and diabetes (Table 3). Core interventions and services are evidence-based, have high impact, and are cost-effective, affordable and feasible to implement in a wide range of health systems. They represent the benchmark for effective and efficient activities for the prevention and control of NCDs and are linked to the Global Action Plan for the Prevention and Control of Noncommunicable diseases 2013–2020. This country assessment uses the same standard of core interventions and services as other country assessments. Each intervention and service was evaluated by the assessment team on a three-point scale as limited, moderate or extensive. Exact criteria for the scoring were developed by WHO and can be found in the assessment guide. Full scoring was not done for individual services as data could not be retrieved for a full assessment.

Table 3. Core population interventions and individual services for NCDs

Core population interventions for NCDs	Individual services
<ul style="list-style-type: none"> • Range of anti-smoking interventions^a <ul style="list-style-type: none"> – Raise tobacco taxes – Smoke-free environments – Warnings of dangers of tobacco and smoke – Bans on advertising, promotion, sponsorship – Quit lines and nicotine replacement therapy (NRT)^b 	<ul style="list-style-type: none"> • CVD and diabetes <ul style="list-style-type: none"> – Risk stratification in primary health care – Effective detection and management of hypertension – Effective primary prevention in high-risk groups – Effective secondary prevention after AMI, including acetylsalicylic acid – Rapid response and secondary care after AMI and stroke^b
<ul style="list-style-type: none"> • Interventions to prevent harmful alcohol use <ul style="list-style-type: none"> – Raise taxes on alcohol^b – Restrictions, bans on advertising and promotion – Restrictions on availability of alcohol in retail sector – Minimum purchase age regulation and enforcement – Allowed blood alcohol level for driving^b 	<ul style="list-style-type: none"> • Diabetes <ul style="list-style-type: none"> – Effective detection and general follow-up^b – Patient education on nutrition and physical activity and glucose management – Hypertension management among diabetes patients – Screening for and management of complications
<ul style="list-style-type: none"> • Interventions to improve diet and physical activity <ul style="list-style-type: none"> – Reduce salt intake and salt content in foods – Virtually eliminate <i>trans</i>-fatty acids from the diet – Reduce free sugar intake^b – Increase intake of fruit and vegetables^b – Reduce marketing pressure of food and non-alcoholic beverages to children^b – Promote awareness about diet and physical activity 	

^a As outlined in the Framework Convention on Tobacco Control (FCTC).

^b Indicates interventions and services additional to those mentioned in the *Global action plan for the prevention and control of noncommunicable diseases*, to allow a more comprehensive assessment

2.1 Core population interventions

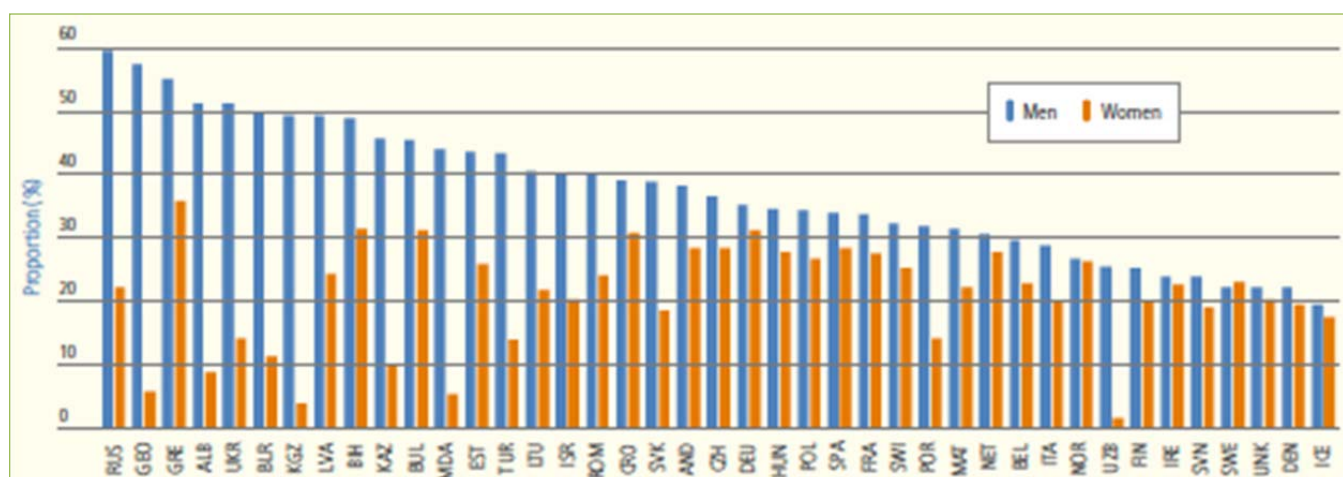
The potential to scale up population-based interventions is one of the biggest opportunities for stronger prevention and control of CVD and diabetes in Belarus.

The burden of major diseases, like CVD and diabetes, can be attributed to a large extent to the main categories of risk factors. To address these, action is needed both at the population level and at the level of individual services. The population-based interventions are grouped around three main areas: tobacco control, harmful use of alcohol, and diet and physical activity. While Belarus has made some progress in the areas of tobacco and alcohol control in recent years, especially through regulating the terms of sale and usage, implementation and enforcement of these regulations remain a significant challenge.

Tobacco

Belarus has made progress in tobacco control over the past decade, but efforts need to remain persistent and comprehensive. Tobacco consumption remains a serious health issue in Belarus and the country has one of the highest smoking rates among men in the WHO European Region (Figure 2).

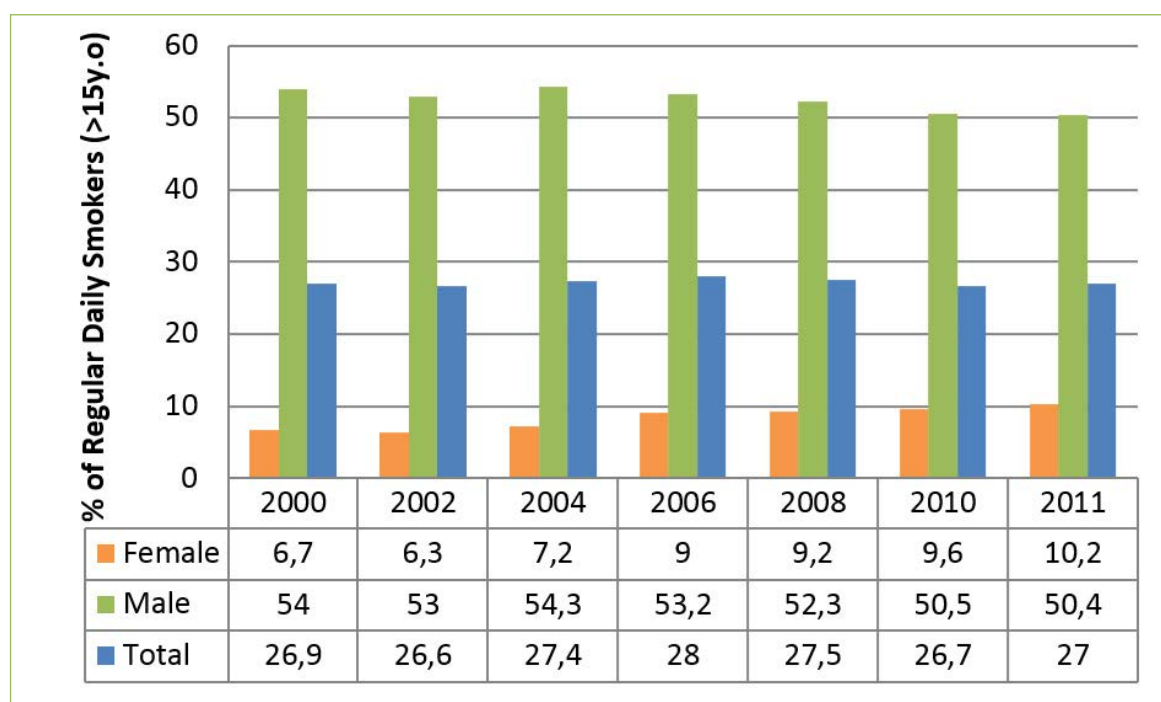
Figure 2. Proportion of regular smokers among the population aged 15 years and over



Source: European Health Report 2015

Overall, smoking prevalence in Belarus has remained stable; this is partly explained by the fact that the reduction in the proportion of male smokers over the past decade has been offset by an increase in the number of women who smoke. This phenomenon has been noted in other countries. While the smoking rate among men declined from 54.9% in 1998 to 50.4% in 2011, the rate among women rose from 3.6% in 1995 to 10.2% in 2011 (Figure 3).

Figure 3. Prevalence of tobacco smoking in Belarus, 2000–2011



Source: European health for all database

The high smoking prevalence among men remains a major contributor to the high rates of premature NCD mortality in men compared with women: 5.5 times higher for CVDs, 20 times higher for AMI and 2.5 times higher for cancer. An important issue is smoking among children and adolescents: according to a national statistical survey, 3.4% of children in grades 1–4 and 18.5% of those in grades 5–9 have tried smoking.¹⁰

In September 2005, Belarus ratified the WHO Framework Convention on Tobacco Control (FCTC), and the convention entered into force in December of the same year. Belarus has a national regulatory base for tobacco control; however, current policies are not in line with legal obligations set by the FCTC. The measures recommended in the WHO MPOWER tool for tobacco control are not fully in place. The main regulatory tobacco legislation, covering the distribution of tobacco products, entered into force in 2002, prior to ratification of the FCTC (Decree on State Regulation of the Production, Turnover and Consumption of Tobacco Raw Material and Tobacco Products). The main regulatory and policy frameworks developed for tobacco control are listed below.

- The Presidential Decree RT28 of 17 December 2002, “On governmental regulation of tobacco production, retail, advertisement and consumption of raw tobacco and tobacco products”, bans indoor smoking in a number of public institutions and public spaces, prohibits tobacco sales to people under 18, and suggests warnings on tobacco packages.
- The law “On advertising”, adopted on 10 May 2007, banned tobacco advertising and promotion.
- The “Governmental policy concept on tobacco control for 2011-2015” and the “Advanced plan of anti-tobacco measures for 2011-2015” both include tobacco control measures which are within the scope of this assessment.
- An administrative fine for offences against the tobacco regulations was introduced in 2010.
- As a member of the Customs Union (together with Armenia, Kazakhstan, Kyrgyzstan and the Russian Federation), Belarus is part of a working group on developing technical regulations on unification of tobacco warnings and packaging and other relevant issues.¹¹

¹⁰ Behavioural risk factors in population of Republic of Belarus. Joint sociological study. Minsk: Republican Centre of hygiene, epidemiology and public health, and Institute of Sociology of National Academy of Science; 2012

¹¹ Decision #526 of the High Commission of the Customs Union from 28 January 2011 and Decision #102 of the Eurasian Economic Council from 23 November 2012.

However, assessment shows that there is considerable scope to step up tobacco control in Belarus, including better implementation of established policies.

Raise tobacco taxes

At present, tax on tobacco products stands at 42.5% of the retail price, of which 25.8% is excise tax and 16.7% is value-added tax (VAT).¹² WHO recommends that the total amount of tax per pack should comprise at least 75% of the retail price and there is thus room for improvement of this tobacco control measure. This population intervention was therefore assessed as **moderate**.

Smoke-free environments

There is a need for a stronger policy, as well as better implementation of the current regulations, on smoke-free environments and decreasing exposure to second-hand smoke. Shortly prior to this assessment, Belarus hosted a Tobacco-Free Ice Hockey World Championship in Minsk. The event served as an advocacy platform for the health benefits related to smoke free status. In October 2013, a new draft law entitled "Protecting people's health from tobacco" was proposed. This proposes a comprehensive smoking ban in all indoor public places, prohibition of advertising and promotion of tobacco products, an increase of taxes, and an introduction of pictograms on tobacco packaging; it is in line with the WHO FCTC requirements.¹³ The law itself has seen a lot of industry lobbying and resistance. Furthermore, the absence of political commitment to the adoption of the law has resulted in stagnation of the process. The absence of a legal basis for enforcement of smoke-free environments means that there is high exposure of the population to second-hand smoke. According to the national statistical survey of Belarus in 2012¹⁴ 60% of families in Belarus are exposed to second-hand smoke. Some 36.4% of the surveyed population were also exposed to second-hand smoke on public transport and in other public places. The problem also persists in the hospitality sector, with a high level of smoking in restaurants, bars and public institutions. According to the Ministry of Internal Affairs of Belarus, in 2013, 3000 people were fined for smoking in public places; the maximum fine for such an offence is 600 000 Belarusian rubles (BYR) (approximately US\$60). It is important to note that, under the current legislation, only the smoker receives a fine and there are no penalties for facility owners. This population intervention was therefore assessed as **limited**.

Warnings of dangers of tobacco smoke

Warnings are in place on cigarette packages, but cover only 30% of the front and back of the package. According to the latest WHO Report on the Global Tobacco Epidemic¹⁵, health warnings on tobacco packages are written in the principal language of the country, but do not include photographs or graphic elements. The health warnings describe the harmful effects of tobacco (six types of health warnings are approved by law), and there is a regulation banning the use of misleading terms, such as "light" or "mild". Nevertheless, such terms do often appear on cigarette packages, giving misleading messages to the public: half of the respondents in the HITT-CIS study¹⁶ thought that "light" meant less harmful. The small size of the health warnings on cigarette packages in Belarus (compared with 65% on both sides of the package in the EU) and the absence of pictorial warnings means that this population intervention can be assessed as **limited**.

¹² WHO report on the global tobacco epidemic 2015. Tobacco control country profiles: Belarus. Geneva: World Health Organization; 2015 (http://www.who.int/tobacco/global_report/2015/en/).

¹³ New anti-tobacco policy proposed in Belarus [website]. Copenhagen: WHO Regional Office for Europe; 2013 <http://www.euro.who.int/en/countries/belarus/news/news/2013/10/new-anti-tobacco-policy-proposed-in-belarus>, accessed 19 August 2014).

¹⁴ Behavioural risk factors in population of Republic of Belarus op. cit. 15.

¹⁵ WHO report on the global tobacco epidemic 2015. Tobacco control country profiles: Belarus. Geneva: World Health Organization; 2015 (http://www.who.int/tobacco/global_report/2015/en/).

¹⁶ Health in Times of Transition: Trends in Population Health and Health Policies in CIS countries. Policy Brief: Tobacco. Strengthening Tobacco Control in Belarus (www.hit-cis.net, accessed 10 June 2014).

Bans on advertising, promotion and sponsorship

After the adoption of the “Law on advertising” in 2007, significant progress was made in the banning of advertising of tobacco products in the mass media. According to the latest WHO profile on tobacco control in Belarus there is a ban on direct advertising of tobacco products in all types of media and press. However, advertising is still allowed at the point of sale. There are also indirect bans on free distribution and promotional discounts of tobacco products. While tobacco vending machines are banned, such machines and tobacco kiosks at bus stops have been introduced in some oblasts. This population intervention was assessed as **moderate**.

Quit lines and nicotine-replacement therapy (NRT)

The availability and affordability of smoking cessation programmes remains a challenge for better treatment of tobacco dependence. Nicotine-replacement therapy is available in the country and NRT drugs are available in pharmacies without prescription. However, the therapy is not subsidized by the government and has to be fully paid by the individual. There is no toll-free quit line for smoking cessation.¹⁷ It is possible that more people would decide to quit smoking if NRT was subsidized from public funds and quit lines were available to the population. This population intervention was assessed as **limited**.

To address some of the above issues, Belarus has developed a new national tobacco control law in line with the WHO FCTC and its guidelines. However, it has not yet been adopted by the Parliament of Belarus and there seems to be no concrete plan for its adoption in the near future. Existing policies need to be better implemented if they are to meet their objectives. Lessons learnt during implementation of these policies should be taken into consideration during the implementation of the “Governmental programme on the prevention and control of NCDs of the Republic of Belarus 2015-2020”.

Alcohol

Alcohol consumption in Belarus is a significant public health problem that has been rising in recent years. There are major differences between men and women in the prevalence of alcohol dependence and disorders, with males having five times higher rates than women. The average annual consumption of alcohol in Belarus is critically high. Between 2008 and 2010, the average alcohol consumption per capita in Belarus was 17.5 litres of pure alcohol, compared with an average of 10.9 litres in the WHO European Region.¹⁸ Of this amount, 14.4 litres are recorded alcohol and an estimated 3.2 litres are unrecorded. Spirits are the most consumed form of alcohol in Belarus and their consumption is growing. Between 2005 and 2011, the consumption of spirits increased substantially (from 37.4% of the total alcohol consumed to 47%). The affordability of alcohol has contributed to an increase in consumption and a subsequent increase in the number of people suffering from alcohol dependence and heavy episodic drinking). According to the latest statistics, for 2014, the number of people officially registered as suffering from alcohol dependence is 174 080.¹⁹ In 2012, Belarus was ranked among the countries with the highest number of years of life lost (YLL) attributable to alcohol.²⁰

¹⁷ WHO report on the Global Tobacco epidemic op. cit page 13.

¹⁸ Global status report on alcohol and health 2014. Country profiles: Belarus. Geneva: WHO; 2014

¹⁹ Razvodovskiy Y. Alcohol situation in Belarus 2005-2010. Organization and informatization of health care 2013; 2:43-49.

²⁰ Global status report on alcohol and health 2014. Op cit pg 17.

Figure 4. Average alcohol consumption per capita, recorded and unrecorded, 2008–2010, men and women

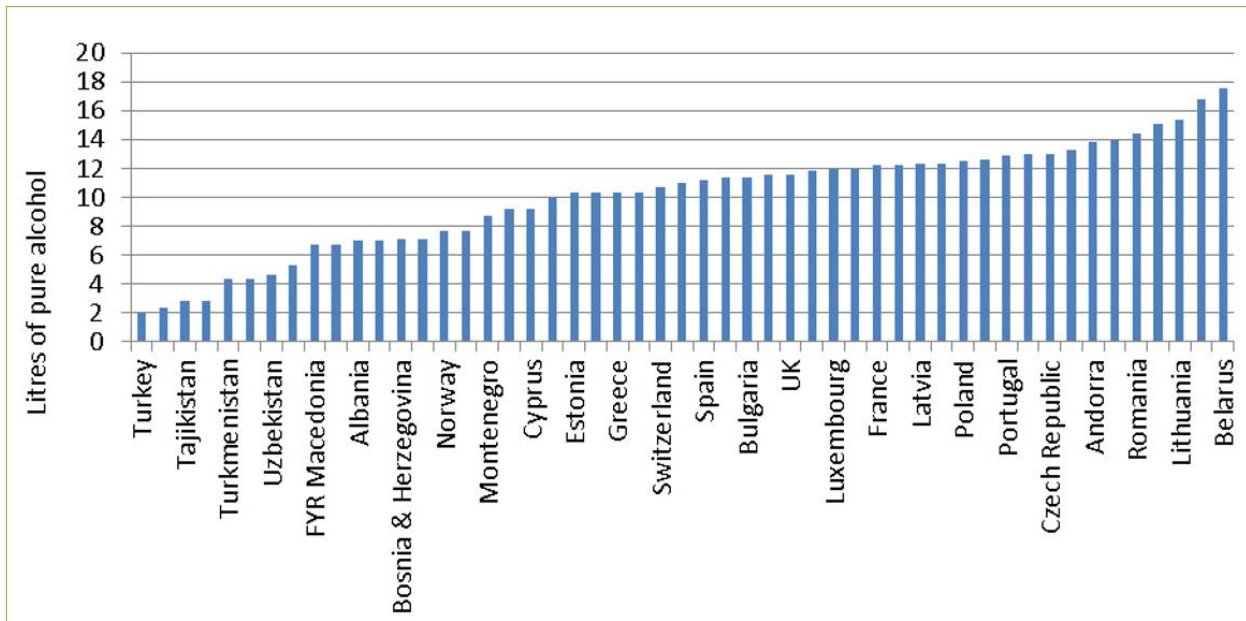
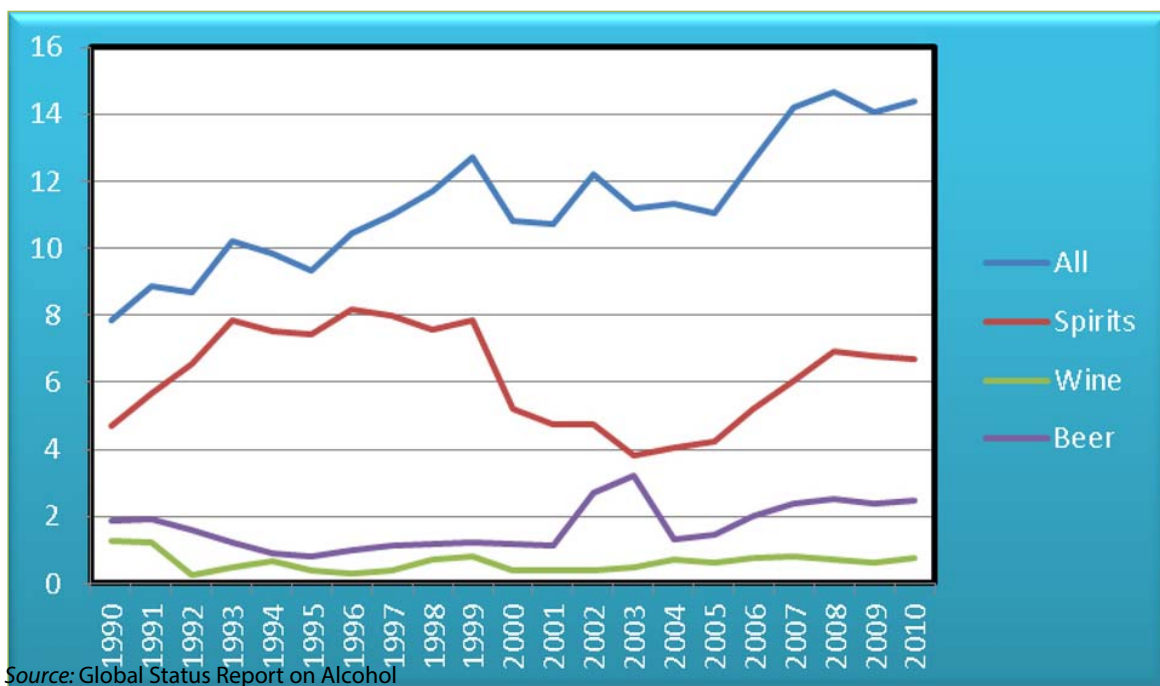


Figure 5. Recorded alcohol consumption per capita among people over 15 years, 1990–2010

Data refer to litres of pure alcohol.



Source: Global Status Report on Alcohol

Belarus has a number of frameworks to regulate alcohol production and sales. In 2011, Belarus revised its national alcohol policy and developed an action plan (13). An intersectoral state programme is in place for national activities for the prevention and control of heavy drinking and alcohol dependence 2011–2015²¹ with the participation of 12 ministries, three committees, the National Academy of Sciences and executive agencies. The programme has dedicated funding

²¹ Ministerial Council of Republic of Belarus Decree # 27 from 11 of January 2011 (version of 11.01.2013)

and work is now under way to develop the next phase for 2016–2020. The targets to be achieved by 2016 are:

- an annual reduction of 2–3% in the prevalence of chronic alcohol dependence;
- an annual reduction of 3–5% in the number of under-age drinkers and related harm;
- an annual reduction of 5–7% in the number of direct alcohol-related deaths;
- an annual reduction of 7–8% in the incidence of alcohol-related psychoses;
- an annual reduction of 1–5% in the number of offences and crimes committed in a state of alcohol intoxication;
- an annual reduction of 4–5% in the number of traffic accidents caused under the influence of alcohol;
- an annual reduction of 5–6% in the number of accidents at work caused under the influence of alcohol.

The Ministry of Health annually monitors the implementation of the programme through agreed key indicators.

Raise taxes on alcohol

Taxes on alcohol remain one of the most cost-effective prevention measures. While there have been positive developments, with the tax on alcohol being increased twice in 2014, there is still scope for stronger action in this area. The excise tax applied to beer, wine and spirits is linked to the consumer price index, but is not related to alcohol content, and there are no special taxes on products attractive to young people, like alcopops.

Since 2014, in the framework of excise tax harmonization across member states of the Eurasian Economic Union and its Customs Union, the following increases in excise taxes have been introduced:²²

- in the first half of 2014, an increase from 14.5% to 36.1% on alcoholic drinks, 14.5% to 15.4% on low-alcohol drinks and 13.8% on beer;
- in the second half of 2014, an increase from 5.6% to 28.7% on alcoholic drinks, 4.8% to 11.1% on low-alcohol drinks and 6.1% on beer.

This population intervention was assessed as **limited**.

Restrictions and bans on advertising and promotion

Belarus law bans direct advertising of alcohol, but enforcement of the law is not satisfactory. The law "On advertising"²³ bans advertising on television and radio and the outdoor advertising of alcohol on the territory of educational, health care, cultural and sports buildings, airports, stations, public transportation stops and metro stations. Although alcohol advertising on television is banned, beer may be advertised between 22h00 and 07h00. There is also a ban on advertising on the first and last pages of newspapers, magazines and other media targeted at people under 18 years of age. Where advertisements are allowed, they should contain health warnings and labels. It is noteworthy that the President of Belarus has the right to impose additional regulatory measures on alcohol advertising.²⁴ There is a national regulation on alcohol sponsorship and sales promotion, but alcohol companies often use indirect marketing to promote their products. This population intervention was assessed as **limited**.

Restrictions on availability of alcohol in the retail sector

There are regulatory measures that address the availability of alcohol in the government and education sector, with specific attention to young people, but they are not fully enforced. In 2008, restrictions were introduced on the retail sale of alcohol products in public institutions, such as schools, hospitals, children's theatres, dormitories, canteens, and children's cafes and shops, but

²² Law of Republic of Belarus # 96-3 "On introduction of changes and additions in some laws of RB concerning entrepreneurship and taxation" from 31 of December 2013.

²³ Ministerial Council of Republic of Belarus Decree # 27 from 11 of January 2011 (version of 11.01.2013)

²⁴ Law of Republic of Belarus #225 "On advertising" from 10 of May 2007

have not been fully enforced. Local municipalities and governing bodies have an obligation to organize events promoting healthy lifestyles, and preventing and controlling alcohol dependence and heavy drinking. They also have a mandate to restrict the sales of alcohol products on their territory on special days (such as school graduation parties). This population intervention was assessed as **limited**.

Minimum purchase age regulation and enforcement

The national legal minimum age for purchase of alcoholic beverages (beer, wine and spirits) is 18 years, and is currently well enforced. However, violation does not result in loss of the licence for the retailer. There are currently considerations towards restricting when alcohol can be sold and increase the minimum purchase age to 21 years.²⁵ This population intervention was assessed as **moderate**.

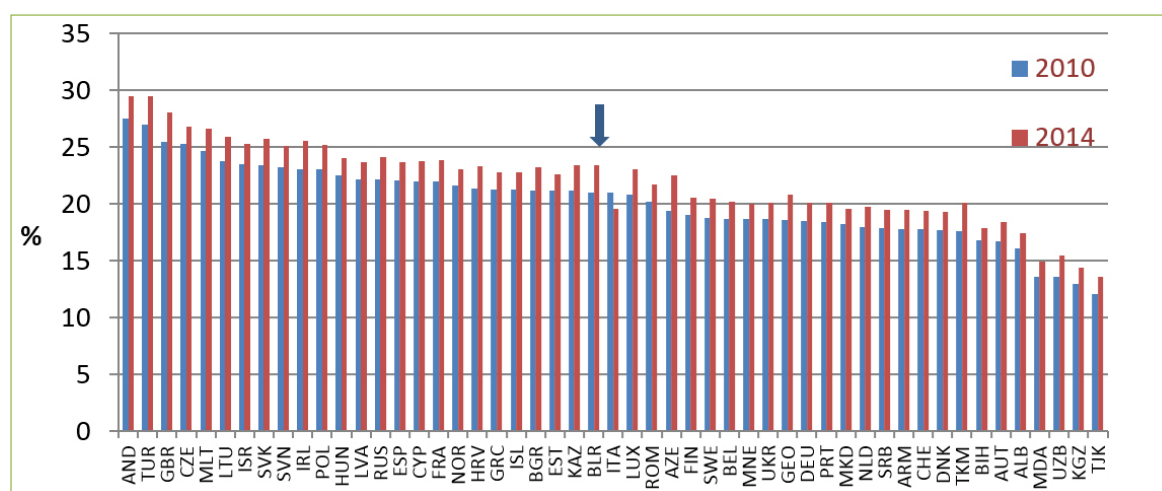
Allowed blood alcohol level for driving

Belarus has made significant progress in addressing the problem of drinking and driving by lowering the maximum allowed blood alcohol concentration (BAC) when driving a vehicle to 0.03%. However, there is no zero tolerance for novice or professional drivers. This population intervention was assessed as **moderate**.

Nutrition and physical activity

In Belarus, a growing proportion of the population is overweight or obese, and there has been little implementation of core interventions to improve nutrition and promote physical activity. Estimates for 2008 indicate that 57.4% of adults (over 20 years old) in Belarus were overweight and 24.3% were obese.²⁶ The prevalence of overweight is slightly less among men than among women (57.2% versus 57.5%). However, there is a larger difference in the proportions of men and women who are obese, at 19.7% and 26.4%, respectively (Figure 6). It is currently predicted that, by 2020, 17% of men and 30% of women will be obese and by 2030, 22% of men and 40% of women.²⁷ In 2009, the Ministry of Health of Belarus issued Clinical guidelines for diagnostics, treatment and medical rehabilitation of adults who are overweight or obese which acknowledged the scale of the growing problem. Addressing the factors that lead to a high prevalence of overweight and obesity is an important, but as yet poorly exploited, area.

Fig. 6. BMI>30 among + 18 year old



Source: Global Health Observatory Data Repository²⁸

²⁵ Charter'97 . Buying alcohol under 21 will become illegal in Belarus [online article]

²⁶ Nutrition, Physical Activity and Obesity. Country Profiles. Belarus. Copenhagen: WHO Regional Office for Europe; 2013 (http://www.euro.who.int/__data/assets/pdf_file/0008/243287/Belarus-WHO-Country-Profile.pdf, accessed 25 August 2014).

²⁷ *ibid*

²⁸ Global Health Observatory Data Repository. Geneva: World Health Organization (<http://apps.who.int/gho/data/view.main.2450A?lang=en>, accessed 1 May 2015)

The Government of Belarus is taking its first steps to address the problem of poor diet and low physical activity.

- In 2010, an Intersectoral Coordination Committee on health promotion was formed.
- In 2011, Belarus adopted the governmental public health strategy which aims to develop a healthy lifestyle culture across the population, and to strengthen public and personal responsibility for health promotion at national, regional and individual levels.
- In 2014, an Intersectoral Coordination Committee on Nutrition (26) was formed, which comprises representatives of the Ministry of Health, the National Academy of Sciences, and the food industry, and is chaired by the President of the National Academy of Sciences. However, the intersectoral plan for health and healthy lifestyle promotion has been adopted only for 2011–2015.

While the effectiveness of implementation of the core population interventions can be determined by measuring trends in specified indicators, the overall surveillance system in this field in Belarus is limited. No data on nutrition and physical activity in Belarus are available from the survey of Health Behaviour in School-Age Children (HBSC)²⁹ or the European Childhood Obesity Surveillance Initiative³⁰ (COSI). Similarly, there are no data on physical inactivity in Belarus from the Global Health Observatory Data Repository or the WHO European Database on Nutrition, Obesity and Physical Activity (NOPA).³¹

Reducing salt intake and salt content of food

No information is available on trends in salt consumption in the population, an important risk factor for CVDs. Furthermore, there are so far no specific policies aimed at reducing salt intake in the Belarusian population. This population intervention was assessed as **limited**.

Virtually eliminating *trans*-fatty acids from the diet

A national regulation requires that products that contain *trans*-fats and saturated fats must be labelled to show the content as a percentage of total fat. Special attention is given to the regulation of *trans*-fats in food products for children. There is a technical regulation to reduce the contents of *trans*-fats by 4–10 times in oil and fat products by 2018,³² but there is as yet no evidence that they have in fact been reduced in the diet. This population intervention was assessed as **limited**.

Reducing free sugar intake

There are specially designated sections in large supermarkets that have low-sugar products; however there is no monitoring framework for sugar intake from sugar-sweetened beverages. This intervention was assessed as **limited**.

Intake of fruit and vegetables

The availability of fruit and vegetables was estimated at 587 g per person per day in 2009. This is below the >400 g per day recommendation of WHO and the Food and Agriculture Organization of the United Nations (FAO), but is higher than that in much of the CIS. Population surveys in 2012 showed that the average daily fruit and vegetable intake among the Belarusian population was 350–450 g. A STEPS survey³³ will be important to improve the evidence base and overview of the current situation. This population intervention was assessed as **moderate**.

Reduce marketing pressure of food and non-alcoholic beverages to children

Regulations appear to be weak when it comes to restricting advertising of food and soda and reducing marketing pressure on children. However, it is important to mention that, since 2007, there is a regulatory ban on advertising of baby formula in the media, with the exception of the specialized medical and pharmaceutical press. This population intervention was assessed as **limited**.

²⁹ Health Behaviour in School-aged children (HBSC)

³⁰ European Childhood Obesity Surveillance Initiative (COSI)

³¹ WHO European Database on Nutrition, Obesity and Physical Activity (NOPA)

³² Taken from a presentation by Fedorenko E on Situation analysis of particular areas of population nutrition in Republic of Belarus, Scientific-practical Centre on Hygiene, Belarus.

³³ <http://www.who.int/chp/steps/reports/en/>

Promote awareness about diet and physical activity

There are positive elements in the nutrition and physical activity profiles of the Belarusian population. Between 2005 and 2012, the percentage of infants being exclusively breastfed for the first six months of life increased from 9% to 19%.³⁴ Although facilities for physical activity and sports are reportedly available in all regions of Belarus, the physical activity levels of the population remain low. Only 10.8% of the total population regularly take part in physical activity. One and a half hours of physical activity is mandatory in primary and secondary schools, and the teacher training curriculum includes physical activity. In addition, there is a specifically designated channel “Belarus-5”, which aims to raise public awareness about healthy diet and physical activity. There is also a policy document on nutrition and physical activity counselling in primary care, which is partially implemented.³⁵ This core population intervention was assessed as **moderate**.

Table 4. Score card for core population interventions

Belarus score card	Score card with comments
Range of anti-smoking interventions	
Raise tobacco taxes	Moderate. Tobacco taxes are 42.5% of retail price, of which 25.8% is excise tax and 16.7% is VAT.
Smoke-free environments	Limited. There are laws on smoke-free environments, but enforcement is quite low. Hospitals, schools, public transportation and workplaces are smoke-free, but smoking is allowed in the hospitality sector.
Warnings of dangers of tobacco and smoke	Moderate. Health warnings cover 30% of the front and back of packages, but there are no pictorial displays.
Bans on advertising, promotion and sponsorship	Moderate. Bans on all tobacco advertising, promotion and sponsorship exist and are moderately enforced.
Quit lines and nicotine replacement therapy	Limited. NRT is recommended by Ministry of Health, but is not subsidized and is subject to full out-of-pocket expenditure.
Interventions to prevent harmful alcohol use	
Raise taxes on alcohol	Limited. Alcohol taxes follow the consumer price index, but there are no taxes to make alcohol products less attractive to young people.
Restrictions and bans on advertising and promotion	Limited. Since 2007 advertising of beer is not allowed between 7h00 and 22h00 and advertising of spirits is not allowed. There is a ban on alcohol advertisements on the first and last pages of printed media. However, indirect marketing remains a challenge.
Restrictions on availability of alcohol in the retail sector	Limited. There is a ban on sale of alcohol in governmental and educational institutions, but it is not well enforced in all government agencies.
Minimum purchase age regulation and enforcement	Moderate. The minimum age limit for purchase of alcohol products is 18 years, which is effectively enforced. The violation of the regulation does not lead to loss of licence.
Allowed blood alcohol level for driving	Moderate. 0.03% was set as the maximum blood alcohol concentration when driving a vehicle, but there is no zero tolerance for novice or professional drivers.
Interventions to improve diet and physical activity	
Reducing salt intake and salt content of foods	Limited. There are no population-level interventions to reduce salt intake, and no population monitoring of salt intake.
Virtually eliminating <i>trans</i> -fatty acids from the diet	Limited. There is no regulatory framework supporting the elimination of trans-fats and no evidence of their reduction in the diet.
Reduce free sugar intake	Limited. There are specially designated sections for low-sugar products in big supermarkets; however there is no monitoring framework for sugar intake from sugar-sweetened beverages.
Increase intake of fruit and vegetables	Moderate. The aim to increase the consumption of fruit and vegetables is in line with WHO and FAO recommendations of at least 400 g a day. Population surveys in 2012 reported average daily fruit and vegetable intake of 350–450 g. However it is unclear what incentives facilitate affordability and availability.
Reduce marketing pressure of food and non-alcoholic beverages to children	Limited. WHO recommendations on marketing to children have been acknowledged, but no specific steps have been taken. The only progressive area is a ban on advertising of milk formulas and other breast milk substitutes in all media (except medical journals).
Promote awareness about diet and activity	Moderate. Nutrition and physical activity counselling is gradually being considered as important element of primary care. There is a policy document on nutrition and physical activity counselling in primary care, which is partially implemented

³⁴ WHO Global Health Observatory Data Repository [online database]. Geneva: World Health Organization; 2013 (<http://apps.who.int/gho/data/view.main>, accessed 19 August 2014).

³⁵ Nutrition, Physical Activity and Obesity. Country Profiles. Belarus op.cit page 18

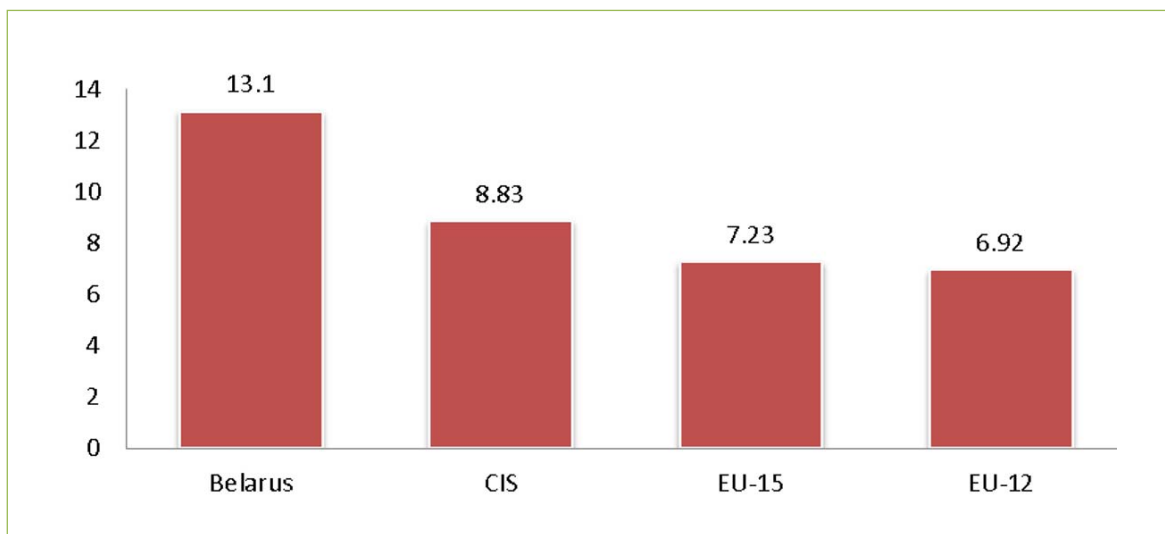
2.2 Individual services

In recent years, Belarus has given priority to development of high-level specialized care and treatment for CVDs and this has probably contributed to improved outcomes for acute events, such as AMI. Given the dominant role of NCDs and CVD in the disease burden, it is important that primary and secondary prevention be strengthened at the individual service level. This means that the primary health care (PHC) model will need to be optimized everywhere, but particularly in urban areas.

Cardiovascular diseases and diabetes

Detection of hypertension and risk stratification for CVDs is done at primary care level through a wide network of polyclinics and general practitioners (GPs) and the procedure of *dispanserizatsiya*.³⁶ However, both detection and follow-up need to be strengthened. Belarus has one of the highest number of outpatient contacts per person per year in the region (Figure 7). Data from field visits indicate that a large proportion of the catchment population in facilities is seen each year by district physicians and family doctors; however, the detection rate of hypertension is low (8–10%)³⁷ compared with the estimated prevalence of hypertension in the population of 41.8%.³⁸ District physicians and GPs are mandated to record blood pressure, cholesterol, blood glucose and exposure to risk factors. However, partly because of high workloads in PHC, in practice work in the *dispanserizatsiya* system often has a nominal function only and identification and follow-up of risk groups needs to be strengthened.

Figure 7. Outpatient contacts per person per year, 2011



Source: European health for all database

The apparent limited contribution of primary health care to management of patients at risk for cardiovascular events is supported by field interviews. All four patients interviewed in the intensive care department after myocardial infarction had not been seen by their primary health care physician or nurse for the past 2–4 years. Patients usually go directly to a specialist if they have a problem; the specialist may deal with the immediate problems but may not assess risk factors or detect other diseases.

³⁶ The term *dispanserizatsiyas* system refers to one of the main approaches used for health promotion and prevention of NCDs in Belarus. This involves categorizing the population into three main groups: (1) people with no known risk factors for NCDs; (2) people with one or more risk factors for NCD; and (3) individuals with NCD. A specific list of services is defined for each of the three categories including frequency of visits and levels of specialists seen as well as entitlements to reimbursement of costs

³⁷ Data collected from polyclinic and rural family medicine practice field visits.

³⁸ Noncommunicable diseases (NCD) country profiles 2014. Belarus op.cit page 9

Hypertension medication given as a preventive measure is not routinely reimbursed, which results in missed opportunities for primary prevention of CVDs, including in people with diabetes. Hypertension medication is provided free of charge after acute events, e.g. for up to six months after myocardial infarction, or in case of disability. Patients with hypertension or ischaemic heart disease who are not appraised as disabled have to buy medicines at full price. Effective treatment of hypertension is one of the first-line individual interventions and has proven efficiency and cost-effectiveness. Reimbursement or free provision of medicines should be considered as a priority. Insulin and other medications for diabetes are fully reimbursed for people who have been diagnosed as having diabetes.

Management of CVD and diabetes requires significant behavioural changes and adherence to long-term treatment. Strengthening of patient empowerment and a patient-centred approach are needed. The team heard that patients do not feel responsible for their own health; rather, they see this as the doctors' responsibility. Low compliance with treatment results in a high prevalence of complications and disabilities. A paradigm shift is necessary, as prevention and treatment of major NCDs like CVD and diabetes cannot be sustained in a paternalistic system of care delivery. Physicians and other health professionals need to be trained and provided with tools that allow better patient empowerment and patient-centred care.

The age-standardized prevalence of diabetes in adults aged 18 years and over in Belarus is estimated to be 8.2% (confidence interval (CI) 4.7–11.6%).³⁹ Schools for patients with type 2 diabetes have existed throughout the country since 1987, and 227 schools are now operational. This has been an important initiative and has led to reduced rates of diabetes-induced coma and related mortality. Reductions in perinatal mortality, amputations, blindness and renal failure have also been attributed in part to this initiative.⁴⁰ However, there continues to be an identified need⁴¹ to strengthen diabetes education, in particular health staff skills.

In Belarus, coordination of care for diabetes is facilitated by the use of a population-based disease registry, which includes both outcomes and quality indicators (see section 4). Care of diabetes similar to many other NCDs requires multiple visits to various levels of expertise, and the database helps prevent duplication of procedures, resulting in better use of resources.

Acute events – myocardial infarction and stroke

Belarus has defined strategies for ensuring good access to highly specialized cardiology centres countrywide, and site visits indicated that there is indeed good access to well-staffed advanced tertiary level facilities for management of acute cardiovascular events. Hospital beds for treatment of cardiovascular events seem to be accessible in all regions of Belarus, with an average of 7.1 beds per 10 000 inhabitants (ranging from 7.9 per 10 000 in Minsk region to 5.5 per 10 000 in Vitebsk region). All regional centres have angiography facilities permanently available; in Minsk there are five such centres.

High and increasing rates of invasive interventions for acute myocardial infarction have contributed to reduced CVD mortality in Belarus (Table 7). Nationwide six hospitals at oblast and republican level, provide invasive treatment for AMI.

Table 5. Number of invasive interventions for acute myocardial infarction, 2009 and 2013

Intervention	2009	2013
Surgical revascularization	319	2556
Thrombolysis	4249	4066
No intervention	5976	3518

Source: Ministry of Health

³⁹ Global status report on noncommunicable diseases 2014. Geneva: World Health Organization, 2014. Based on country estimates and includes wide confidence intervals.

⁴⁰ Kholadav A, Bourko I. Teaching system of self-control in endocrinology. Presented at 16th European Congress of Endocrinology, Wroclaw, Poland. *Endocrine Abstracts*, 2014, 35: 485.

⁴¹ European Coalition for Diabetes, 2014 Diabetes in Europe. Policy puzzle. The state we are in, 4th ed. (http://www.idf.org/sites/default/files/youngleaders/ECD-PP4finalweb_march2015.pdf).

Belarus has an extensive system of ambulance-centred emergency care, comprising 24 stations, 29 substations, 117 departments and 90 emergency care posts. There has been considerable investment in, and upgrading of, the system; all ambulances are equipped with defibrillators and some have the means to start thrombolytic therapy. The reported average response time from call to patient is 30 minutes throughout the country, and 15–20 minutes in Minsk. There are specialized “acute” ambulances, meant for very acute cardiac cases, and two ambulances are specialized for acute neurological calls. Some of the vehicles have equipment for remote ECG analysis and there are plans to extend this in the next year. Triage of calls takes place at a call centre, which assigns a classification of red, green or low. However, challenges remain related, in particular, to overuse of ambulances by the population.

Table 6. Overview of core individual interventions

Belarus	Core individual services for CVD and diabetes control
CVD and diabetes	
Risk stratification in primary health care	Risk stratification in primary health care was evaluated as moderate. General practitioners, district physicians and doctors’ assistants make risk stratification using a score card and patient records of hypertension, cholesterol level, diabetes, smoking and other CVD risk factors.
Effective detection and management of hypertension	There appears to be very low detection of hypertension; accessibility to multidrug therapy based on risk stratification is low; prevalence of hypertension reported in polyclinics and rural practices was 8–10%, i.e. lower than the estimated rate of 30%. Antihypertensive medicines are not routinely reimbursed, unless there are complications, such as MI or disability.
Effective primary prevention in high-risk groups	Prescribers are not aware of indications for primary prophylaxis. High-risk patients are not prescribed statins. Acetylsalicylic acid is prescribed indiscriminately to all hypertensive patients.
Effective secondary prevention after AMI, including acetylsalicylic acid	Patients who have AMI receive reimbursement for beta blockers and statins for up to six months. There is no reimbursement after six months. There is a risk that people will drop out of treatment when reimbursement ends.
Rapid response and secondary care after AMI	The acute response for AMI seems to be well developed, with a focus on ensuring fast access to needed interventions. Efforts have been put into strengthening the quality of acute treatment. There is a strong network of ambulances and emergency facilities, including some with facilities for prehospital thrombolysis. Data on call to needle time were not examined.
Diabetes	
Effective detection and general follow-up*	Estimated age-adjusted diabetes prevalence in adults is 8.2% (CI 4.7-11.6%). ⁴² It was difficult to find comparative data of registered diabetes cases over 18 years to estimate detection rate. Findings indicate that the effectiveness of the current system for finding new diabetes cases (<i>dispanserizatsiya</i>) needs further assessment.
Patient education on nutrition, physical activity and glucose management	Diabetes schools have been run for a number of years and have been credited with partial responsibility for the observed reduction in complications. Trained therapeutic nurse educators play a role in education. However challenges persist with regard to staff skills and testing equipment, and there are some reports of access difficulties. According to reports from the diabetes registry, 25% of those registered with diabetes have well controlled disease (i.e. glycated haemoglobin <7%).
Hypertension management among diabetes patients	Not assessed
Preventing complications	Not assessed. However the national diabetes register records information about complications. The data are actively used to improve diabetes management and reduced rates of complications been partly attributed to this. Despite this, there is room for improvement, since according to interviews the registry indicates that only 25% of people diagnosed with diabetes have well controlled disease (i.e. have HbA1c<7%).

* Indicates criteria additional to those mentioned in the Global action plan for the prevention and control of *noncommunicable* diseases 2013-2020 (Geneva: World Health Organization; 2013).

⁴² Global Status Report on NCDs 2014 op cit. page 25 .

3. Health system challenges and opportunities to scale up core NCD interventions and services

For many countries, it is challenging to scale up the core interventions and services outlined in section 2, despite evidence of their cost-effectiveness and significant population health impact. At the same time, inspiring experiences are emerging, providing opportunities for cross-country learning and adaptation of successful initiatives. This section reviews the health system challenges that may undermine delivery of core interventions and services and prevent progress towards the targets of the Global Monitoring Framework on NCDs. It also highlights opportunities to scale up selected interventions and services.

Figure 8 lists 15 health system features that can represent a challenge or an opportunity for improved delivery of core NCD interventions and services. The accompanying background paper⁴³ provides further information on the content of each feature.

Figure 8. Fifteen health system challenges and opportunities to improve NCD outcomes

Political commitment to NCDs	Explicit priority-setting approaches	Interagency cooperation	Population empowerment
Effective model of service delivery	Coordination among providers	Regionalization	Incentive systems
Integration of evidence into practice	Distribution and mix of human resources	Access to quality medicines	Effective management
Adequate information solutions	Managing change	Ensuring access and financial protection	

Source: Roberts MJ, Stevenson MA. Better Noncommunicable Disease Outcomes: Fifteen Challenges and Opportunities for Health Systems. Copenhagen: WHO Regional Office for Europe, 2014 (forthcoming)

Challenge 1. Developing political commitment to better NCD prevention and control

Political commitment to, and support for, the NCD agenda have an important influence on NCD control. Translation of this commitment into action to keep NCDs high on the agenda for what are often politically difficult reforms (e.g. anti-tobacco policies, reform of medical education) is critical.

Allocation of a high percentage of the government budget to health confirms the political commitment to health. Belarus provides universal and extensive health coverage to the population, free at the point of use. Incremental changes to the health system since the country's independence have led to improvements in accessibility to high-technology services and essential medicines. However, policies that have supported specialized care have resulted in a system that continues to be characterized by excess hospital capacity. Moreover, the system remains oriented towards acute care and treatment of complications rather than primary prevention, early detection and good management of NCDs.⁴⁴

⁴³ Roberts MJ, Stevenson MA. Better Noncommunicable Disease Outcomes: Fifteen Challenges and Opportunities for Health Systems. Copenhagen: WHO Regional Office for Europe, 2014.

⁴⁴ Richardson E, Malakhova I, Novik I, Famenka A. Belarus: health system review. Health Systems in Transition. Copenhagen: WHO Regional Office for Europe; 2013; 15(5):1-118.

Overall, there is political commitment to NCD prevention and control in Belarus, but incremental changes and lingering political discussions over critical health system reforms are a significant barrier to further implementation of important NCD control interventions. Many NCDs, including CVD and diabetes, are chronic in nature, requiring continued engagement and follow-up. Multimorbidity is increasing, calling for more cost-effective, comprehensive care and a shift towards a model that facilitates greater patient engagement and empowerment. Proposed changes and reforms are discussed at the central level, sometimes for long periods, and as a result the momentum for change may sometimes be lost.⁴⁵ At other times, agreed changes are not fully implemented.

Belarus has shown political commitment to the adoption of core population interventions for the prevention and control of NCDs, but overall progress is slow, mainly because the interventions are not widely implemented. Belarus was one of the first countries in the European Region to ratify the WHO Framework Convention on Tobacco Control. The country has adopted a number of regulations concerning tobacco and alcohol, including taxation, bans on advertising, and age limits at the point of sale. The political commitment to another core population intervention area – restrictions on alcohol – can be followed through implementation of the *Governmental programme of national actions for prevention and overcoming of heavy drinking and alcoholism for 2011–2015*.⁴⁶ Despite some successes, the overall implementation of the interventions is not satisfactory, mainly as a result of low enforcement by authorities

Core individual services, such as early detection and management of CVD risk factors and diabetes detection and management, are implemented under the *National programme of demographic safety of Republic of Belarus for 2011-2015*. The system of “dispenserization” aims for extensive population coverage with prevention and early detection of NCDs. For example, opportunistic screening for hypertension and breast cancer is part of the routine physical examination done by all PHC physicians, regardless of the reason for the clinical encounter.⁴⁷ Challenges remain to improve the efficiency of these efforts, as detection and management of CVD risk factors are still low. In recent years, improved access to high-technology facilities for AMI and stroke have contributed to reduced CVD mortality.

Belarus is currently developing a new *Governmental programme on the demographic safety and health of people of the Republic of Belarus in 2015-2020*. NCDs are acknowledged as a major threat to the socioeconomic wellbeing of the Belarusian population, both in this programme and in the Ministry of Health’s concept paper *On the realization of governmental policy on fostering healthy lifestyles for the period till 2020*. These and other policies related to the core population interventions and individual services for the prevention and control of NCDs are planned to be synchronized with the European Health 2020 strategies, employing the values of whole-of-society and whole-of-government approaches, and will be linked to the work of other UN agencies in the country through the UN Development Assistance Framework (UNDAF).

Challenge 2. Creating explicit processes for setting priorities and limits

In every health system, priorities need to be set to determine the allocation of scarce resources. How this process is organized, including the level of transparency and criteria for prioritization, is an important health system feature influencing NCD control.

The health sector is a priority sector for the Government of Belarus, and minimum health care is universally guaranteed by the Law on state-guaranteed minimal social standards. In recent years, public expenditures have contracted, but health has largely been protected from the financial

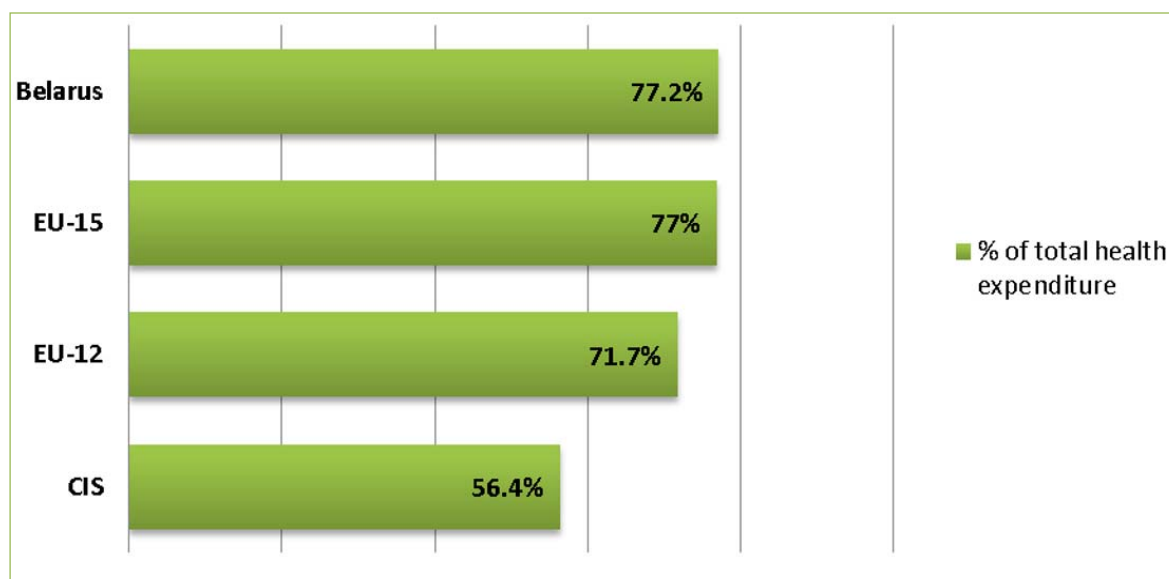
⁴⁵ *ibid.*

⁴⁶ Ministry of Health of the Republic of Belarus [website]. Governmental Programmes. Minsk: Ministry of Health of the Republic of Belarus; 2014. (http://minzdrav.gov.by/ru/static/activities/gosudarstvennyye_programmy, accessed 10 September 2014).

⁴⁷ Richardson et al. *op cit.* page 29.

consolidation efforts.⁴⁸ While total health expenditure as a percentage of gross domestic product (GDP) declined from 6.9% in 2005 to 5.7% in 2013,⁴⁹ public expenditure on health as a percentage of government budget increased from 10.5% in 2005 to 13.2% in 2012.⁵⁰ Public health is predominantly financed from taxation, and the share of the public sector in total health expenditure is among the highest in the subregion, at 77.2% (Figure 9).

Figure 9. Public share of total health expenditure



Source: European Health for All Database .

Local governments serve as the main collection agencies for taxes from enterprises in the regions. Resources for health are pooled at the national level and redistributed on the basis of population numbers by region. Provider budget formation payment and accounting are, however, based on historical line items. The capacities of hospitals and other inpatient facilities in Belarus are the highest in the region, but there has been a gradual shift towards increased allocations to outpatient care and primary health care. Polyclinics are the main providers of outpatient care, while family medicine is underdeveloped and largely present only in rural areas. Despite the absence of major reforms in the health system, since independence there has been a shift of both structural capacity and financial flows towards primary care services.⁵¹ The proportion of health spending devoted to primary care (including polyclinics) increased from 31.4% in 2008 to 38% in 2011. The proportion of total health expenditure on inpatient services fell from 60% in 2000 to 43% in 2011.⁵² However, the persistence of the historical patterns of service delivery, such as annual population check-ups (*dispanserizatsiya*), with no proven cost-effectiveness and a significant workload⁵³ remain a strong barrier to efficient use of general practice in prevention and control of NCDs. Furthermore, the gatekeeping functions in primary care introduced for a period were rather nominal and have not worked in practice, especially in urban areas.

The explicit process used to decide the level of health budget allocated to population interventions versus individual services was not clear to the assessment team. Expenditure on preventive services in Belarus, including public health, comprised 2.5% of total health spending in 2010 – lower than the average of the countries of the Organisation for Economic Co-operation and Development of 3.2%.⁵⁴ A large part of this was spent on immunization, family planning and reproductive services. While funds for primary and secondary care come from the local budgets, public health services and tertiary care are funded through the national health budget. Although there is no explicit list of services covered under the Belarusian Constitution, primary, secondary

⁴⁸ World Bank 2013 *Belarus Public Expenditure Review; Enhancing Public Services in Times of Austerity*.

⁴⁹ Richardson et al. op. cit. page 29.

⁵⁰ World Development Indicators.

<http://databank.worldbank.org/data/reports.aspx?source=2&country=BLR&series=&period>.

⁵¹ Rusovich V, Richardson E. Belarus: developments in primary care. *Eurohealth* 2009; 15(2):15-16.

⁵² Richardson et al. op. cit. page 29.

⁵³ Shmargun A and Tkacheva E . Analysis of health system financing in Republic of Belarus in 2012-2013. *Voprosi organizatsii i informatizatsii zdravooohraneniya* 2014; 2:16-24.

⁵⁴ World Bank 2013 *Belarus Public Expenditure Review* op cit pg 29.

and tertiary care costs are de facto covered by the state and there is no explicit rationing of services in the state sector.⁵⁵

The demographic and epidemiological transition of the Belarusian population is creating new priorities for the Government. The Belarusian population is ageing, with an accompanying increase in demand for health care. Belarus funds its health sector mainly from general taxation, as opposed to a payroll tax. This is likely to mitigate the effects of a reduced labour force on availability of resources for health, but the demand for services will increase. There is a need to develop more efficient models of care, reduce hospital capacity, consolidate primary care models and strengthen referral systems. The ageing population and widespread co-morbidities call for more patient-centred and individualized services, including palliative care. In 2013, financing of facilities for long-term and palliative care was increased 2.5-fold⁵⁶ Budgetary allocations for this sector of care are shared with the Ministry of Labour and Social Protection Since 2008, a number of facilities have been established to provide rehabilitation services and hospital beds for social and long-term care. However, more facilities are needed in this sector, as well as more facilities that can be nurse-led and thus cheaper to run.

Challenge 3. Strengthening interagency cooperation

The success of NCD control is highly influenced by the level of government commitment to health in general, and how well this translates to multisectoral action in areas such as tobacco, alcohol, diet and healthy lifestyles.

Within the broad area of NCD control, there are many fields where interagency cooperation is critical. The most obvious include the control of risk factors, such as tobacco use, alcohol misuse, and unhealthy diets and lifestyles. However, cooperation between agencies and departments is also critical for coordinating public health messages and incentives between individual and population-based services, e.g. for CVD and diabetes. The close cooperation of many actors is also needed to strengthen the role of basic services, such as PHC, in early detection and management of CVD and diabetes.

In general, the enabling factors for effective collaboration across sectors include: national leadership from the highest level (Prime Minister, Deputy Prime Minister or similar); a well articulated, jointly owned plan of action, with division of tasks, and benchmarks or progress indicators; clear coordination and review mechanisms to allow discussion of progress; and, ideally, joint or shared resources. A balance must also be struck between the number of intersectoral mechanisms or committees and the available resources. When one or more of these enabling factors is missing, there is a risk that commitments and plans will be difficult to implement.

There are three levels of interagency cooperation in the public sector in Belarus:

1. governmental cooperation (interdepartmental commissions);
2. cooperation between ministries;
3. cooperation between different public institutions within the same territory.

Belarus was among the first countries to ratify the WHO Framework Convention on Tobacco Control in 2005, thereby taking on legal obligations to implement the articles of the convention and report regularly on progress. Article 5 of the Convention outlines the need for development and implementation of comprehensive multisectoral national tobacco control strategies and plans, together with corresponding national multisectoral coordinating mechanisms.

The *Governmental Policy on Tobacco Control 2011–2015* is implemented through intersectoral cooperation that involves a number of ministries, including the Ministry of Health, Ministry of Education, Trade Ministry, Ministry of Emergency Situations, Ministry of Finance and Ministry of Internal Affairs, as well as the tax service, civil society and the private sector (not associated with tobacco companies).

Implementation and enforcement of the normative acts on the prevention and control of tobacco use are supported by intersectoral cooperation, as are the implementation of the *Tobacco*

⁵⁵ Richardson et al. op. cit. page 27.

⁵⁶ Shmargun A. op. cit. page 31.

Regulation Decree (2002), ratification of the WHO FCTC (2005), and adoption of the law *On advertisement* (2007). Cooperation involves the private sector (with the exception of the tobacco industry), the media, governmental agencies and civil society.

The Interagency Council⁵⁷ is an instrument for intersectoral communication focusing on alcohol and drug misuse. The activities of the Council include:

- coordinating the activities of the republican (national) executive bodies and agencies and local authorities, with the aim of having a unified governmental policy on the prevention and control of alcohol dependence;
- defining the priority areas of governmental policies in these fields;
- developing actions for the implementation of practical and regulatory measures in the prevention and control of alcohol, drugs and tobacco use;
- evaluating plans and project proposals of target programmes.

The meetings of the Council are convened as needed, but at least every six months. The executive body of the Council is formed by a subdivision of the executive branch of the Ministry of Health. This body is responsible for intersectoral communications and for implementing the recommendations of the Council. Decisions of the Council are binding on all relevant governmental agencies and organizations. Some nongovernmental organizations (NGOs), e.g. Positive Action and Sobriety-Optimalist, also work on prevention of harmful use of alcohol. The Interagency Council has a self-regulatory role for the implementation of its own recommendations.

The *Interagency Action Plan for Health Promotion and Disease Prevention in Belarus for 2011–2015* involves intersectoral cooperation on NCDs, including in the area of diet and healthy lifestyle. Examples of areas of collaboration are shown in Table 7.

Table 7. Examples of interagency coordination for health promotion and disease prevention in Belarus

Activity	Agencies involved	Outcome
"Healthy wave" radio	<ul style="list-style-type: none"> – Ministry of Health – Ministry of Education – National television-radio company 	Media products for health promotion and disease prevention
Health promotion on television	<ul style="list-style-type: none"> – Government channel "Belarus-5" – Ministry of Health – Ministry of Education 	Media products (social advertising) for health promotion and disease prevention; scientific and educational TV programmes on healthy living
National dietary guidelines	<ul style="list-style-type: none"> – Ministry of Health – Scientific and practical centre of Belarusian National Academy of Food Sciences 	Healthy nutrition guidelines for various population groups

Challenge 4. Enhancing population empowerment

Many NCDs are chronic, which means that citizen empowerment and the active involvement of patients in the management of their condition are essential for NCD control.

Paternalistic approaches and low population involvement are historical features of the Semashko system that still persist to some extent in the Belarusian health system. The health care system demonstrates many features of the Semashko model, with a hierarchic and paternalistic approach to health, together with a widespread belief that health care professionals are the only responsible actors for health and health care. Health professionals often communicate with patients in a directive, paternalistic way, and there is limited involvement of patients in decision-making and the development of care plans. As a consequence, compliance with prescribed care plans is poor. Feedback from interviews indicated that at least 20% of people with hypertension do not comply with their long-term treatment plan. None of the health facility staff interviewed reported that they had learned and applied patient-centred communication or behavioural change communication

⁵⁷ Ministerial Council of Belarus Decree #1691 from 26.12.2003 (in version of 30.06.2012 #603).

tools. However, some health care professionals mentioned that there should be some kind of incentive for patients to comply with the treatment regime (although some suggested this could include some form of negative incentive or punishment). Confidentiality is often not ensured in consulting rooms of district internists and general practitioners, with nurses being present and sometimes working on other things during the consultations between doctor and patient.

In rural areas, the newly introduced cadre of doctor assistant has the potential to improve patient education at PHC facilities, with the aim of modifying the behaviour of patients and enhancing self-management. In CVD and diabetes control, their role is to provide counselling to patients independently from doctors, and to visit elderly patients at home. In order to ensure the quality of their work, doctor assistants will need to be competent in behavioural communication and patient-centred care, in addition to having biomedical knowledge about diseases. Health education is currently mainly organized by sanitary-epidemiological centres, whose responsibilities include supervision of health education work in health care facilities and provision of health information to individuals and the public. Patient education leaflets and posters, as well as patient education schools (for diabetes and hypertension) are available in many PHC centres. There are more than 227 diabetes education schools throughout the country, with specialized diabetes nurses who teach patients how to manage their disease.

The paternalistic approaches affect NCD control at all levels, from population to providers and the policy setting. On the population side, in addition to poor compliance, the team heard reports of unnecessary use of the system, e.g. overuse of ambulances and specialized services, with consequent reduced efficiency. This is partly driven by regulations, such as the requirement for a sick-leave certificate signed by a doctor from the first day of illness. Regulation changes to address this have been suggested by the Ministry of Health in cabinet, but were met with resistance from other ministries. NCD guidelines used in PHC are developed by specialists, are very diagnosis-oriented, and give limited emphasis to the role of patients in managing their own condition. There is no training or incentives to help general practitioners and district internists facilitate this.

The low health literacy of the Belarusian population is reflected in poor awareness of potential health risks associated with smoking, alcohol consumption, unhealthy diet and physical inactivity. An HITT-CIS⁵⁸ study in Belarus in 2013 reported that public knowledge on the harmfulness of tobacco and related diseases is low. The expanding role of government-run internet portals, with quality information on health-related issues, can be an area of possible improvement for population outreach. It is also important to tailor health promotion and health education to specific groups. An evaluation of both diabetes and hypertension schools would be beneficial, to share and compare experiences and good practices. This area could also be included in patient satisfaction surveys.

The population and civil society do not actively participate in priority-setting and policy-making in health. There is a limited number of patient organizations for specific disease groups in Belarus, and some of them have links with professional specialist associations. There are few, if any, organizations working in the area of patients' rights independently from providers, and little tradition of active disease-based patient advocacy groups that provide peer education and support.

Challenge 5. Establishing effective models of service delivery.

The organization of service delivery remains one of the most important health system challenges for NCD control. Despite decades of efforts, health systems in many countries remain hospital-centred and specialist-driven. Yet, the delivery of core services to control NCDs requires strong primary health care with a broad task profile. Ideally, primary health care would provide core services for people with CVD and diabetes, with handover to specialized care levels for acute and complex events, and an engaged and proactive re-transfer to the primary level for disease management. Effective primary health care is also central to peer-to-peer patient education programmes, support groups and health promotion

⁵⁸ HITT- Health Systems in Times of Transition Project. (2013). Policy Brief: Tobacco control in Belarus op.cit. page 15.

outreach activities. Primary health care needs to become the hub of care, with empowered patients at the frontline and with information technology facilitating coordination and transfer of information.

Belarus is highly urbanized with more than 70% of the population living in cities. The model of services, particularly in urban areas, is considered a significant barrier to the primary and secondary prevention of CVD and diabetes. There is a marked difference in organization of the first level of care between the rural and urban parts of the country. In urban areas, the traditional polyclinic system (staffed by district internists and narrow specialists) still prevails, while in rural areas outpatient clinics (ambulatorii) and FAPs staffed by general practitioners or family doctors are the main first-level providers. In urban areas, there is also a distinction between adult and paediatric physicians. The primary care provider is primarily determined by the patient's residence and is organized by catchment area. According to centrally established norms, every rural general practitioner has a catchment area with a mixed population of 1300 (both children and adults); a district paediatrician should cover 800 children up to 18 years of age and district internist 1800 adults. However, the PHC level is always understaffed, the number of people in the catchment area is usually higher than the norm. Furthermore, the current practice is to divide the salary of vacant posts among remaining staff, which provides an incentive to maintain the vacancy. In polyclinics and rural outpatient clinics, a district nurse traditionally works together with the doctor during consulting hours. This lack of confidentiality during the consultation may be considered a barrier to optimal cooperation and effective communication. Most polyclinics have working hours from 08h00 to 18h00 from Monday to Saturday; out-of-hours coverage is provided by ambulance services.

Primary care providers use the *dispanserizatsiyas* system to categorize the population into three main groups: (1) people with no known risk factors for NCDs; (2) people with one or more risk factors for NCD; and (3) individuals with NCD. The effectiveness of the *dispanserizatsiyas* system, as a core population intervention for health promotion and prevention, should be carefully assessed. Existing guidelines for *dispanserizatsiya* are diagnosis-oriented, and do not indicate how PHC teams should assess NCD risk for individuals or apply more patient-centred care. Such care would be agreed with the patient and based on specific individual needs or risk factors. The current guidelines further promote the use of specialist services, by defining the kind of specialist and frequency of visits appropriate for a particular diagnosis. While *dispanserizatsiya* focuses on preventive measures and identification of so-called "*dispanserizatsiya* groups", in practice physicians generally do not have sufficient time for health promotion and lifestyle counselling during the first visit. Patients who are not diagnosed as having a disease may not be motivated to return to the facility for health promotion or lifestyle change sessions, even if they have some risk factors (e.g. smoking). However, the Ministry of Health is taking action to address some of the above issues and a revised version of the guidelines is expected to be approved within the next few months. The new guidelines no longer include strict rules on referral of patients with NCDs. General practitioners and district internists will be able to decide themselves whether patients should be referred to specialists.

One of the main challenges in Belarus for early diagnosis and management of CVDs at primary care level is the preponderance of specialized outpatient services. Specialists in polyclinics and dispensaries are the first point of contact for many patients and the proportion of primary health care providers is too low. Furthermore, hospitalization rates are among the highest in the region; they increased from 28.39 to 31.2 inpatient discharges per 100 inhabitant by year between 2006 and 2012.⁵⁹ Strategies to introduce general practice in urban areas were not successful and in Minsk there is only one place where primary health care is provided, by four general practitioners. The reporting system is extensive, creating a burden of paperwork for district internists and general practitioners. However, much of the reporting is used not at all or only to a limited extent, and is not relevant to the monitoring of the quality of performance. Premiums payments of up to 50% on top of the regular salary have been introduced for staff, but are not generally based on quality of performance. The task profile of a typical primary health care provider includes preventive services such as *dispanserizatsiya*, including annual check-ups, patient education and health promotion, and opportunistic screening for several groups of NCDs. It also includes

⁵⁹ WHO health for all database.

many administrative tasks, which take time from clinical work. Recent organizational reforms at PHC level have allowed some simplification of the patient pathways and reduced waiting times. At polyclinics, these include online booking and better telephone systems, as well as simpler mechanisms for filling prescriptions for chronic conditions (the duration of prescription was changed from three to six months, reducing the number of patient visits for prescriptions). PHC doctors have little autonomy in decision-making regarding care of patients with NCDs; clinical guidelines are developed by specialists and are not fully relevant to primary health care practice.

Important opportunities lie in increasing the role of nurses and mid-level workers in health promotion and prevention for CVD and diabetes control. The role of nurses is currently limited to acting as doctors' assistants and fulfilling tasks directed by the doctors. PHC nurses have a very limited role in leading the process of care for patients with CVDs at the community level. They lack the competence needed for leadership and teamwork and are not able to coordinate the process of care for patients, to obtain needed contributions from professionals outside the health sector and from members of the family and community. As part of efforts to implement the 1989 St Vincent Declaration on Diabetes Care and Research a special category of nurses—so-called therapeutic patient educators—was created to work closely with diabetes patients on the management of their disease. For unclear reasons, the training programme for these nurses has been discontinued. However, the experience may have been a good example of better use of human resources and it would be useful to consider such initiatives further in efforts to improve NCD outcomes in Belarus.

Emergency care and ambulance services are considered part of primary health care, but are overused by patients, increasing the cost of service delivery. The ambulance services are sometimes used as free transportation to the point of care, and are frequently used unnecessarily, such as for minor fractures or uncomplicated wounds. The actual hospitalization rate of all ambulance calls is approximately 16%; costs to the system of ambulance calls were estimated to be quite high. A change of population attitude towards free ambulance services and replacement by services at PHC level should be a priority. The Ministry of Health has discussed changes to the current ambulance policies with other parts of Government but has so far met with resistance.

Evidence indicates that continuous and effective doctor–patient communication at the first level of contact is one of the most important determinants for improving outcomes of primary health care, such as fewer complications, better control of blood pressure and blood sugar level, improved emotional status of the patients, and increased satisfaction with health care.⁶⁰ The number of GPs rose from 36 in 1996 to 640 in 2012, mostly as a result of the retraining of practising rural district internists and district paediatricians as GPs. A national survey found that GPs spend longer in consultations than district internists and are much more involved in the treatment and follow-up of diseases.^{61,62} However, the same survey found that, overall, patients were satisfied with the accessibility of primary care services and their primary care doctors – irrespective of whether they were district internists or GPs. The satisfaction with primary care services was notably higher in rural than in urban areas, and rural respondents were much more positive than urban respondents about both the doctors and the nurses providing their primary care.⁶³

Belarus has recently given priority to the financing and development of high-technology and specialized medical care for CVDs. This has, in turn, contributed to improved outcomes for related acute events, such as AMI, and reduced CVD mortality. However, if these and other achievements are to be preserved and improved further, a shift towards stronger primary and secondary prevention of CVD and diabetes, through stronger PHC and enhanced population-level risk factor management, is critical.

⁶⁰ Jurgutis A., Juknevičiute V. (2012). Role of PHC for NCD management. *Besikeičiantis sveikatos priežiūros vaidmuo valdant lėtines neinfekcines ligas. Visuomenės sveikata; priedas Nr. 1: 5-13.*

⁶¹ Richardson et al. *op cit.* page 29.

⁶² Rusovich V and Richardson E. (2009). Belarus: developments in primary care. *Eurohealth*, 15(2): 15-16.

⁶³ Egorov K, Boerma W, Rusovich V, Schellevis F, Abrahamse H. (2006). How do Belarusian citizens see primary care? Results from a national survey in 2005. Utrecht: NIVEL.

Challenge 6. Improving coordination across providers

Care for people with CVD and diabetes typically involves coordination among multiple providers. Primary care physicians treating chronic patients need to be able to refer them to specialists when complications develop. They also need to collaborate with non-physician partners (e.g. health educators, dieticians and physiotherapists) if they are to provide optimal care, whether before and after acute events.

As outlined above, significant barriers to better coordination across providers for NCD management are the current free access to specialists, and the fragmentation and extent of the specialized services. The Belarus health care system has a long history of expanded secondary outpatient care. Traditionally, patients prefer to go directly to a specialist when they have health problems. If family physicians were the first contact, they could not only guide the patient through the system, but could also provide more comprehensive consultations, address NCD risk factors and identify NCDs at an early stage. The need for well qualified family physicians who can provide patient-centred comprehensive care is even more urgent for patients with multiple chronic conditions. In urban areas, such patients are not able to consult general practitioners with adequate comprehensive knowledge related to their needs.

The flow of patients is not coordinated by level of care. In theory, the PHC level should serve as a gatekeeping mechanism for patients but in practice there is free access to secondary and specialist care. General practitioners and district internists play a very limited role in coordination of care and do not fulfil the gatekeeping function. In 2007, attempts were made to introduce a gatekeeping function in the new PHC development programme, but the resulting increased flow of patients to district internists (up to 60 consultations per day) far exceeded the limited capacity of the service. Soon the district internists began to serve only as a direct referral facility to specialists. Following growing dissatisfaction among both the public and the medical society, the gatekeeping function was abandoned in 2012.

The team heard that an estimated 20% of patients who are seen in the admissions department of the emergency hospital in Minsk are self-referred (50% are transported by ambulance and 30% are referred from polyclinics). Around 40% of patients seen in the admissions department are not hospitalized. An email system has been developed for sending information back to the first level of care. However, in some facilities, the absence of e-health tools and databases, and the wide use of paper for health records further complicates the coordination of services. This also leads to duplication of laboratory and diagnostic procedures at each level of care, wasting financial resources and making follow-up after acute episodes less than optimal.

Better coordination is needed between different actors involved in preventive activities. Currently, medical professionals do not have a defined role and there is no guidance on how they should cooperate with each other and with others involved, e.g. public health professionals. For example, the clinical protocol on diagnosis and treatment of hypertension describes what clinical diagnostic procedures and laboratory tests should be performed and how often, and how often different specialists should be visited. There is no reference to: what should be the role of nurses in counselling patients with hypertension; peer groups; schools of hypertension and who should be responsible for them; actors outside the health care sector; and the role of patients in identifying and managing disease.

There are some examples of good progress in strengthening community-oriented PHC. In some practices, such as that in Gomel region,⁶⁴ PHC nurses, doctors and social workers have received PHC teamwork training, with the aim of starting joint plans for home care and better addressing the comprehensive needs of patients with NCD. With the support of local authorities, this has resulted in improved home care for patients with NCD, under the leadership of PHC nurses, and more cooperation and synergy with social workers. During one year of this pilot project, health authorities reported the number of ambulance calls fell by 12.4%, hospitalizations by 22.4%, and home visits by doctors by 14.8%.

⁶⁴ In the framework of the ImPrim project, implemented under the EU Baltic Sea Region Program.

Within the polyclinics,⁶⁵ there are examples of the use of comprehensive electronic records (the so-called electronic patient's card) to improve internal coordination. All information about visits to any physician in the polyclinic is collected on the patient's e-card. District internists and nurses can check what kind of health care has been received by patients with CVDs from different specialists in the polyclinic and can make an appointment with the PHC doctor when needed. This system also allows data to be extracted for the patient or other health care providers, when referral to another health care level is needed.

Coordination for acute events, such as AMI, appears to be good, with defined roles for the different levels of care. However, for primary and secondary prevention, coordination appears weaker, contributing to poor prevention of acute episodes and complications. Pathways of medical care for stroke management are clearly defined. There are plans to establish neurological departments (in Minsk there are currently six departments with a total of 298 beds and intensive care units), rehabilitation departments (total of 977 beds), specialized ambulance teams for strokes in cities with over 200 000 people (in Minsk there are two such teams), and overall increased capacity of ambulance teams for emergency care of patients who have had a stroke. Simultaneously, the Belorussian Medical Academy has started training programmes for physiotherapists and speech-voice disorder specialists for rehabilitation of stroke patients.

Challenge 7. Taking advantage of regionalization, economies of scale and specialization

When it comes to management of acute events connected to chronic NCDs, or cancer care, some health care systems support too many institutions performing highly complex procedures. There are two disadvantages to this. One is connected to "economies of scale", whereby the average cost of a unit of output is lower in a large-volume facility than a small-volume one. The second aspect is related to the well demonstrated relationship between volume and outcome; centres that deal with a large number of cases have significantly better outcomes than those with small numbers.

The health system of Belarus is organized according to the six regions, with a special region status for the city of Minsk. Within each region, different levels of care are defined: primary care (district polyclinics, ambulatories and FAAs), secondary care (specialist inpatient and outpatient care), and highly specialized tertiary-level hospitals. Hospitals include those operating at rayon or subrayon level (serving several rayons), city hospitals, oblast hospitals, and scientific and practice centres, which offer the most advanced tertiary care. Protocols define what services should be available at each level. More than 4000 clinical algorithms have been adopted, containing basic guidelines for the treatment of different diseases and conditions. Generally, decisions on decentralization or centralization of NCD health services need to take many factors into account, including the underlying epidemiological profile, population density, volume of services to be provided (e.g. cervical cancer screening would be high volume while AMI interventions would be lower), the cost and technical expertise required (e.g. administering thrombolytics is not technically demanding or high cost whereas coronary angiography and stenting are), the availability of human resources and the feasibility of transporting patients to higher-level establishments with the needed technical expertise. During the visit, the team was unable to assess whether the protocols have been developed on the basis of an analysis of epidemiological needs or how quality standards for a minimum number of procedures for different types of operation were considered.

There are opportunities to reduce costs and improve quality through clearer division of tasks, including avoiding overlapping roles in specialized outpatient services. As highlighted, access to and quality of acute care for AMI seem to be fairly good. Invasive AMI treatment is available in several hospitals in each city, as well as in oblast hospitals and in the scientific centres. However, the team heard that further efforts are needed at the pre-hospital level to improve prevention, management of risk factors, health promotion and awareness of symptoms of an acute episode, as ambulances are often called too late. Urban polyclinics employ numerous specialists (e.g. surgeons, neurologists, endocrinologists, and ear, nose and throat specialists) in parallel delivery

⁶⁵ Visit to polyclinic no 29.

systems for adults and children. Similar types of specialists are also employed in other outpatient clinics, both stand-alone and in hospitals. The inefficiency is compounded by poor communication and a lack of trust between different levels of providers, with the result that many diagnostic procedures carried out at the primary care level are repeated at the hospital level.

Belarus has an extensive system of ambulance emergency care, comprising 24 stations, 29 substations, 117 departments and 90 emergency care posts. The system has seen considerable investment and upgrading during the past decade and many stations and substations have ambulances with sophisticated equipment and are staffed by specialized, physician-led teams. All ambulances are equipped with defibrillators, and some have the means to start thrombolytic therapy for AMI. There are specialized “acute” ambulances, meant for very acute cardiac cases, and two ambulances are specialized for acute neurological calls. Some of the ambulances have equipment for remote ECG analysis and there are plans to extend this widely within the next year. Triage of calls takes place at a call centre, which classifies calls as red, green or low. The team did not have the opportunity to review data, but the quoted response time from call to arrival of the ambulance was 30 minutes throughout the country and 15–20 minutes in Minsk. The reported time from admission of a suspected AMI case to intervention (“door to needle”) was 15 minutes. Challenges remain however. Many buildings and vehicles remain substandard, particularly in poor rural areas, which find it difficult to meet the social standards because of an inadequate tax base. The ambulance service is considered as patients’ first point of contact with the health service outside the regular hours of operation of polyclinics and GPs, and as such are part of primary health care. Patients make frequent use of this service, often for non-emergency purposes. There are reports of widespread abuse of ambulance services, for example as free transportation for intoxicated persons, leading to very high utilization rates (339 call-outs per 1000 population per year).

Challenge 8. Creating the right incentive system

To ensure delivery of core interventions and services for CVD and diabetes, incentive systems need to be aligned across the different levels of care in the health system, outside the health system and on the demand side.

In 2012, total health expenditure in Belarus was 5% of GDP and health expenditure accounted for 13.2% of total government spending.⁶⁶ More than 77% of total health expenditures are from the state budget, while out-of-pocket expenditures comprise 23% – mostly co-payments for outpatient pharmaceuticals.⁶⁷ The relatively low out-of-pocket expenditure – considerably lower than in most other CIS countries – indicates that there is fairly good financial protection.

In the Belarus health system, the incentive structure is not particularly well suited to population prevention or to finding those at highest risk for CVD and diabetes and managing their risk appropriately.

Demand-side incentives and incentives for public health

There are no designated “sin taxes” or other funds earmarked for health promotion or disease prevention, as all public financing for health is derived from income tax, corporate taxes or directly from publicly owned enterprises and rental income. Approximately 2.5% of the health care budget is reportedly spent on public health activities and programmes.⁶⁸ Funding of population-based NCD prevention is based on budget allocations to specialized vertical programmes and public health institutions, which were established during Soviet times as part of the Semashko public health system – a system oriented towards preventing communicable diseases and ensuring appropriate hygiene. There are no direct incentives in place to strengthen the public health and demand side for healthier lifestyles, including in relation to tobacco, alcohol and diet.

⁶⁶ World Development Indicators.

<http://databank.worldbank.org/data/reports.aspx?source=2&country=BLR&series=&period=>

⁶⁷ *ibid.*

⁶⁸ World Bank 2013 Public Expenditure review op cit pg 30.

Incentives in primary health care

Access to core CVD and diabetes interventions and services is ensured through the system of polyclinics in urban areas and GPs in rural areas, which are free at the point of service. Funding for primary care is linked to regional population numbers but provider budget formation, payment and accounting are based on historical line-item budgets. A recent directive allocated 40% of all publicly funded health expenditures to PHC. However, this earmarked funding for primary care in Belarus includes both specialists employed in polyclinics and ambulance services, making it difficult to determine exact allocations to primary health care versus specialist services.

There is no payment incentive linked to NCD-related performance for staff or managers. The current system provides very little flexibility and creates no incentive for early diagnosis and management of patients with NCD at the institutional level. Similarly, salaried doctors and nurses, whose potential bonuses are independent of NCD performance measures, have no financial incentive to emphasize early detection and good management of NCDs, although myriad clinical protocols do mandate testing for and outreach to NCD patients.

A special position of “doctor assistant”, educated to university level, has been established at primary care level throughout the country, in part to help monitor and follow up priority conditions including NCDs; however, there is no additional funding for these activities. District internists and GPs are overloaded with patients, including those who need first-day certification of illness-related absences from work, and they have limited time to counsel, motivate and guide people on lifestyle changes needed to manage CVD and diabetes. On the positive side, general practice internships were introduced in 2008 and the salaries of GPs are higher than those of district internists, although the difference is not substantial. Other motivational incentives need to be strengthened.

The absence of any financial incentive for overloaded primary care providers (GPs and district internists), combined with strictly enforced protocols to refer NCD patients who are not well controlled to specialists, has created a system that emphasizes treatment of complications at the secondary or tertiary care level rather than prevention at the primary care level. Other challenges related to the incentive systems include the lack of reimbursement for certain medications that are important for the management and prevention of CVDs. Statins, for example, are only reimbursed for six months after an acute myocardial infarction and not for prevention. This, unfortunately, creates incentives for patients not to obtain important medications needed for optimal management of their diseases.

Incentives in hospital care

The proportion of total health expenditure spent on inpatient services has fallen gradually – from 60% in 2000–01 to 43% in 2011 – as a result of a deliberate effort to strengthen the primary care level.^{69,70} The allocation of budgets to inpatient care is based on line-item budgets that are developed prospectively, based on analysis of expenditures for the previous year. The line-item budgets do not allow finances to be reallocated to other items if needed. In 2000, capitation-based payment was introduced, which allows the costing of prices (within the framework of national health accounts (NHA)). This is considered as a transitional step towards the introduction of provider payments on the basis of diagnosis-related groups (DRGs).⁷¹ Some facilities are currently pilot-testing the use of global budgets (without line items); however, hospital managers still need to develop capacity in this budgeting approach. Moreover, a set of quality indicators needs to be developed and introduced.

Challenge 9. Integrating evidence into practice

Over the past 30 years, a number of studies have demonstrated that physicians' patterns of practice vary greatly. Many physicians do not follow evidence-based guidelines for clinical practice, including

⁶⁹ PHC includes polyclinics and emergency services.

⁷⁰ Richardson et al. op cit. page 29.

⁷¹ Richardson et al. op cit. page 29.

for key NCDs. Strengthening evidence-based medicine is therefore an important health system challenge for NCD control.

Strengthening systems of evidence-based practice is one of the declared priorities in national policy documents in Belarus and adherence to clinical guidelines or algorithms is monitored. As outlined above, protocols define what services should be available at each level of care, while more than 4000 clinical algorithms set standards for the treatment of various diseases and conditions, including NCDs.

The National Research and Practice Centre on Health Technologies, Information, Management and Economy is the government body responsible for developing the clinical algorithms and for revising them every five years.

A ministerial decree defines the process for the development of clinical algorithms, through the establishment of a working group, which consists of 5–6 professionals representing several institutions, including the Governmental Research and Practice Centre Cardiology, and Bel MAPO (Belarus Medical Academy of Postgraduate Education). There is no tradition of including family doctors or nurses. Clinical protocols on arterial hypertension are limited to description of biomedical diagnostic procedures and recommended medicines for the treatment of different clinical forms. There are recommendations defining when planned or emergency hospitalization is needed. On the other hand, there is no discussion or guidance on what should be the roles and responsibilities of different health care providers in the management of arterial hypertension (e.g. patients, PHC nurses, general practitioners, specialists in polyclinics, specialists in dispensaries). Such guidance is included in some of the other clinical protocols for cardiovascular diseases, which include a clearer distinction of roles and responsibilities at different levels of care.

In addition to clinical protocols for hypertension, there are clinical recommendations for the prevention, diagnosis and treatment of hypertension, developed by the Research and Practice Centre Cardiology in cooperation with the Scientific Society of Cardiologists in Belarus. They were developed in 2010 and are based on: (1) an older version (from 2007) of recommendations of the European Association of Hypertension, (2) national recommendations for hypertension in the Russian Federation (2008) and European hypertension guidelines update (2009). These recommendations are in line with widely accepted international arterial hypertension guidelines.

There are opportunities to improve the recommendations on diagnosis and treatment of hypertension in Belarus. Consideration should be given to including the latest changes, found in the most recent (2013) hypertension management guidelines developed by European associations of hypertension or in the protocols for management of hypertension presented in the WHO Package of Essential Noncommunicable (PEN) disease interventions for primary health care in low-resource settings.⁷²

- The roles of patients in the self-management of hypertension should be more clearly defined.
- The role of PHC nurses should be defined, and tools developed on how to educate patients and counsel on healthy behaviour (WHO PEN protocol 2).⁷³
- The role of peer groups should be considered and more emphasis given to the roles of schools of hypertension.
- Risk assessment methodology should be presented. More emphasis should be given to the importance of non-medical treatment (with specific advice related to smoking, alcohol, diet and physical activity).
- More attention should be given to recommendations for patients over 60 years with comorbidities (e.g. with diabetes, cerebrovascular disorders or kidney failure).
- Clear recommendations are needed on indications for monotherapy and combination therapy.

There also appears to be room for strengthening the systems to ensure that population-based messages, e.g. in hypertension schools, are evidence-based, as well as to coordinate the different actors involved in giving population-based prevention and promotion messages.

⁷² http://www.who.int/nmh/publications/essential_ncd_interventions_lr_settings.pdf.

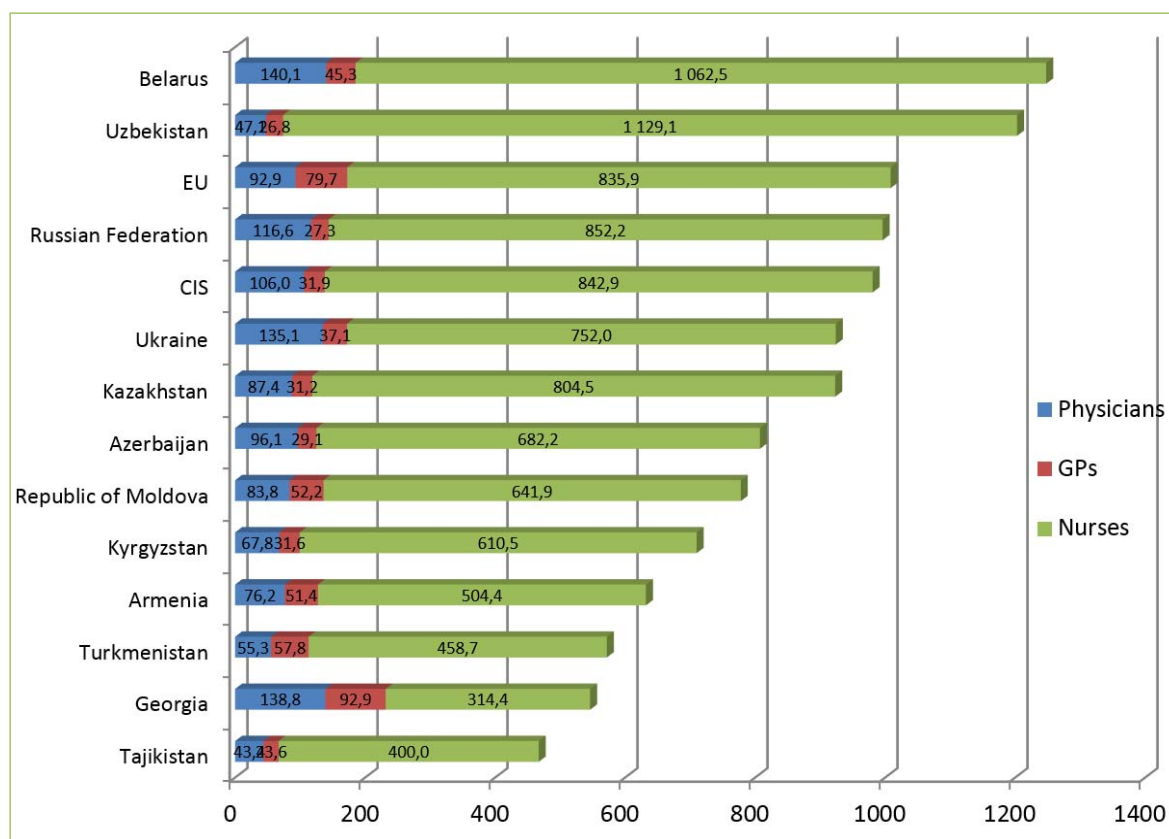
⁷³ *ibid.*

Challenge 10. Addressing human resource challenges

Management of human resources in the health sector, including recruitment and retention of health workers, their education, geographical distribution and skill mix, is an important health system feature influencing CVD and diabetes control.

The number of physicians and nurses in Belarus is among the highest of the former Soviet countries (Figure 10).⁷⁴ In 2012, 70% of all physicians trained were working in public hospitals under the Ministry of Health. The same year, there were 6010 registered primary health care physicians, comprising 640 general practitioners (10.6%), 3376 district internists (56.2%), and 1994 district paediatricians (33.2%). PHC physicians accounted for only 14% of all physicians (total 43 288 in 2012).⁷⁵ Planning of human resources for the health sector is highly regulated, and is coordinated by the Human Resource Department of the Ministry of Health. Managers of health care facilities in districts and cities report their respective need for medical specialists (following the norms defined by the Ministry) to the regional health care administrations, which in turn report to the Ministry of Health. The human resource department of the Ministry of Health provides universities with information about vacancies for different specialities.

Figure 10. Number of physicians, GPs (includes general practitioners, district internists and paediatric internists) and nurses per 100 000 populations, various countries and regions



Source: WHO health for all database, 2012 or latest

While there is a large workforce in the health sector, human resources are unevenly distributed, both geographically and in terms of skills. In rural areas, PHC is based on a family medicine model, while in urban areas the polyclinic system continues to be the main provider at primary level. Primary health care staff (general practitioners and district internists) make up a small part of the workforce, and are in demand in both rural and urban areas. There is concern about internal migration of staff from rural to urban areas.⁷⁶

⁷⁴ Rechel B et al ; 2014 Trends in health systems in the former Soviet Union Countries European Observatory on health systems and policies.

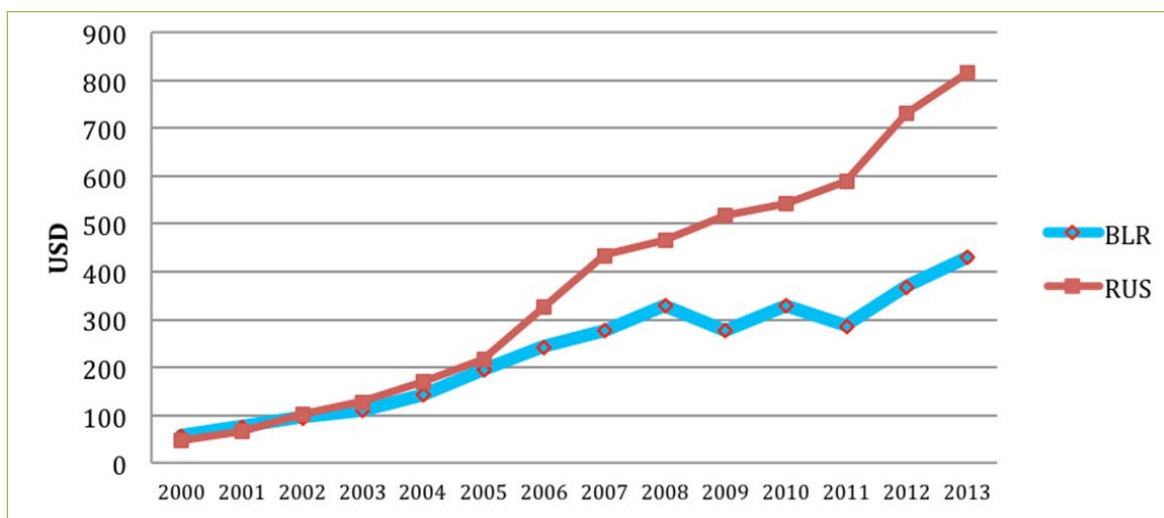
⁷⁵ Public health in the Republic of Belarus. An official statistics collection, 2012 (in Russian). Minsk, Public Health Ministry of the Republic of Belarus, Division of Methodology and Medical Statistics, 2013.

⁷⁶ Rechel B et al. Trends in health systems in the former Soviet countries.op cit pg 44.

In 2014, the average health worker compensation in Belarus was approximately 77.5% of the average gross wage in the country.⁷⁷ This is below the levels in other countries, where compensation of highly qualified health staff is often higher than the average wage. This appears to be one of the factors contributing to the fiscal affordability of the system, given the high number of staff and the acknowledged need to improve efficiency. The wage gap is also conducive to increased migration, given the easy access to other labour markets, e.g. in the Russian Federation. The wage gap between Belarus and the Russian Federation has been growing, and the average health worker in Belarus now earns approximately half of what he or she would earn in the Russian Federation (Figure 11).

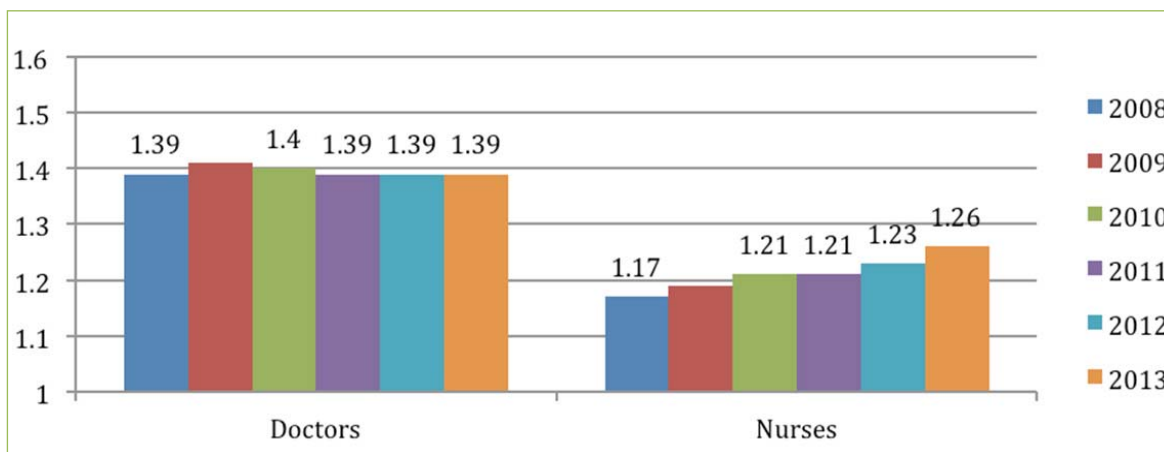
Salary increases are likely to be difficult in the current economic climate, further underlining the importance of workforce rationing through service delivery reform, linked with improvement in working conditions.

Figure 11. Average monthly wages of health care workers in Belarus and Russian Federation, in US dollars



Source: Grankov V ⁷⁸

Figure 12. Ratio of posts to existing staff



Source: Ministry of Health data.

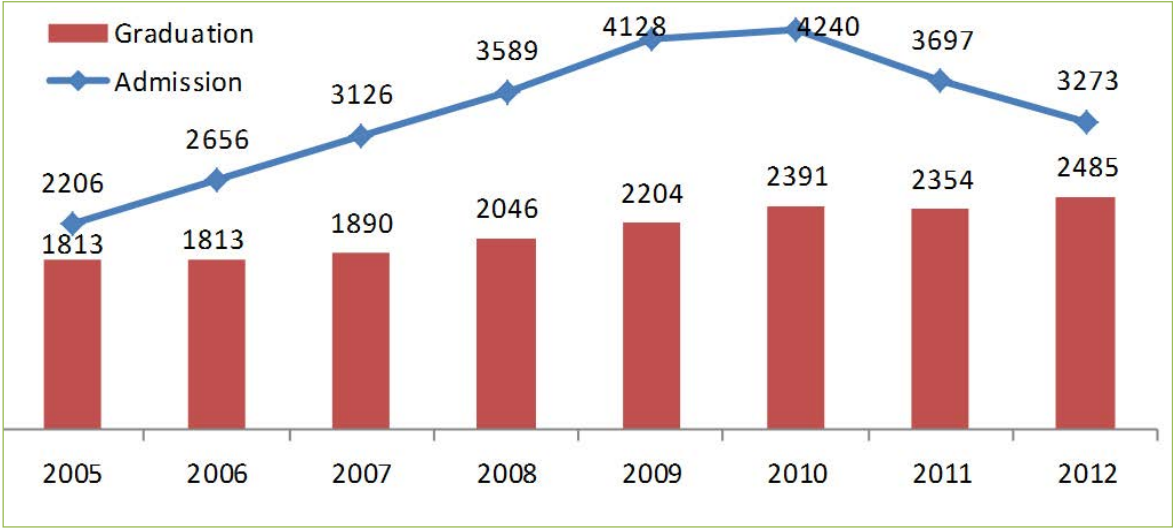
The relatively low wages help maintain the common practice of distributing the salary of vacant posts among existing staff, resulting in a post ratio above 100% for many health workers, with potential repercussions on performance. This practice is common for both doctors and nurses and has been increasing in recent years for the latter (Figure 12).

⁷⁷ The Belarusian trade union of healthcare workers, unpublished reports.

⁷⁸ Grankov V. Social partnership as a factor of preservation and development of human resources in health. Belarusian Trade Union of Healthcare Workers Presentation.

To respond to a perceived shortage of doctors, the Ministry of Health significantly increased admissions to medical universities, almost doubling the admission rates between 2006 and 2010 (Figure 13). However, there has been no analysis of where newly graduated doctors work or how many are migrating to other countries, e.g. the Russian Federation. Further policy analysis is needed and possible amendments to the current registration system for doctors.

Figure 13. Numbers of admissions and graduations in medical universities.



Source: Ministry of Health

In addition to increasing production of medical graduates, two policies have been adopted in Belarus to tackle the problem of unevenly distributed human resources and their shortage in primary care: a compulsory two-year work placement after graduation and so-called “target training” of doctors. The first measure mitigates the problem, but does not solve it: more than a third of doctors leave their work placement immediately after the two-year period. The second measure targets graduates of secondary schools in rural areas, who are entitled to enter the university to study for free, provided that after graduation they work for 5 years in health care facilities in rural areas. Changes in legislation introduced in 2014 (Presidential Decree of 20 March 2014 number 130) allowed any organization with staff shortages, regardless of location (rural or urban), to conclude an agreement on target training of both doctors and nurses. Simultaneously, the proportion of applicants for target training in the general admission was increased to 40%.

A good step towards strengthening general practice was the introduction of one-year general practice internships in universities in 2012. However, the general practice speciality is still short and not well recognized by undergraduate medical students and university teachers. As a consequence there is little motivation for students to choose the one-year internships to become specialists in general practice and family medicine.

In addition to the policies described above aimed at increasing the number of staff in primary health care, there is an easier option to become a specialist in general practice. A three-month course on general practice is offered by the Belarusian Medical Academy of Post-Graduate Education (BelMAPO). Since 2012, strict rules have prevented health care institutions from employing secondary-level health care specialists when there is a vacancy for a PHC professional (district internist or general practitioner). Resources may not be moved from PHC to specialized levels.

A package of motivational elements has been introduced to help attract staff to rural areas in Belarus, including housing and transport benefits, additional allowances and salary top-ups.

The tight regulation of staff mobility and training has both advantages and disadvantages. On the positive side, vacancies and GP posts in remote areas are filled, ensuring a certain minimum coverage. On the other hand, there are few factors motivating doctors to continue their practice in remote areas after their years of compulsory employment, and there is very high staff rotation in rural areas.

The Ministry of Health has introduced the post of “doctor’s assistant” in rural areas, to help GPs and strengthen management of NCDs. There is a need to reconsider the functional responsibilities of physicians and nurses, widening the responsibilities of nurses and doctor’s assistants, in particular with regard to CVD and diabetes prevention.

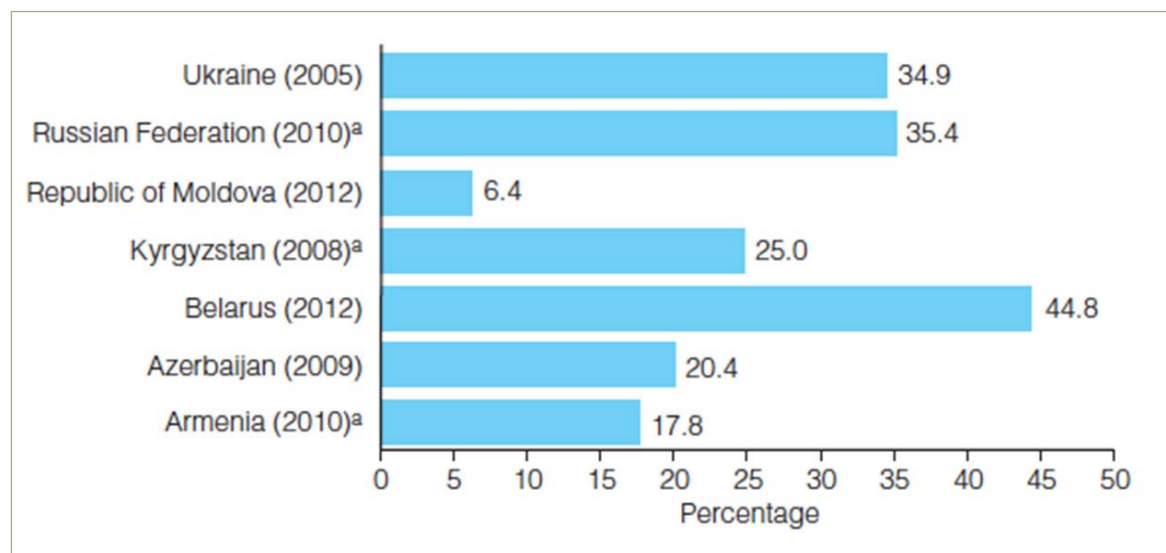
There is a demand for more human resources in the field of healthy nutrition and promotion of physical activity. Since 2009, the country has established a special 48-week internship for training dietician specialists. However, the majority of dieticians are employed in the private sector. Nutrition and food production specialists are trained (or retrained) by the Scientific Centre for Food under the National Academy of Sciences of Belarus.⁷⁹ The number of staff specialized in alcohol dependence and addictions has been declining – by 16% between 2012 and 2013 (from 189 to 159); there was also a 27% decrease in specialists with alcoholic anonymous services. The number of dependence specialists is only 60% of the planned level.

Challenge 11. Improving access to quality medicines for NCDs

An important health system feature for NCD control is access to quality medicines. Patients with chronic conditions have to take the appropriate medicines on a regular basis, often for their entire life. This requires well functioning health and supply systems, rational selection, prescribing, dispensing and use of drugs, affordable prices and sustainable financing.

Total per capita expenditure on pharmaceuticals in Belarus is high compared with other former Soviet Union countries.⁸⁰ Almost half of this expenditure (44.8%) comes from public sources (Figure 14).

Figure 14. Public expenditure on pharmaceuticals as percentage of total pharmaceutical expenditure



Source: Rechel B et al. 2014 ⁸¹

Compared with most other countries in Eastern Europe, Belarus produces a high proportion of its pharmaceuticals locally (see Figure 15). Many of these are generic drugs, which accounts for the relatively low overall value of local production. Significant reforms in pharmaceutical production have been undertaken, including moving towards stronger compliance with good manufacturing practices (GMP) standards and ensuring competitiveness of locally produced drugs. Belfarmacija is the government agency that coordinates pharmaceutical procurement and distribution in the health sector, while the Ministry of Trade leads on the bidding processes. Each year, a procurement

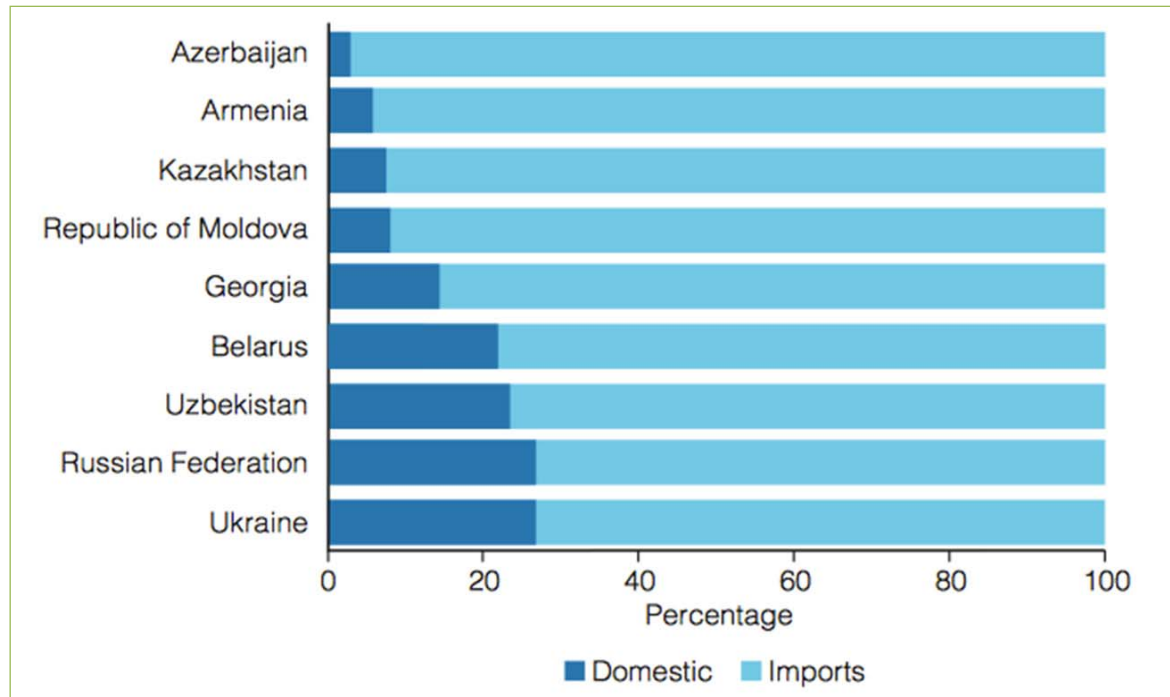
⁷⁹ Organized under presidential decree 242 on 18 April 2006.

⁸⁰ Rechel B et al., 2014 op cit pg 44.

⁸¹ *ibid.*

plan is prepared and posted on the Ministry website. Local production is preferentially positioned in the tender process through the 15 % rule (local producers' will win a tender even if their price is up to 15% higher than that of international companies). Medicines produced in Belarus account for 50% of those bought using the central budget, 40% bought with the local budget and 30% of those sold in pharmacies. The Belfarmacija main office is located in Minsk, and there are six oblast-level centres. There are also seven testing laboratories. All medicines are controlled, and no counterfeits have been discovered in the market since 2004.

Figure 15. Source of pharmaceuticals consumed, by volume, various countries



Source: Rechel B et al. 2014 ⁸²

The Belarus list of around 200 essential medicines was approved by the Ministry of Health in 2007 (decree no. 65, 16 July 2007), and is updated annually by a special commission, chaired by the head of the Department of Medicine Supply of the Ministry. On average 10–15 items are added or removed annually. Different clinical specialties, including GPs, are represented in the commission, but patients' associations are not involved. After tender procedures, a final list of medicines (a so-called formulary) is approved by the Ministry of Health. The current list of medicines was approved on 22 January 2014. This list includes 70 medicines for treatment of cardiovascular diseases. Simvastatin, atorvastatin, enalapril, lisinopril, metformin, nifedipine and loratidine are all included in the list.

Availability

Belarus has an extensive network of 2900 pharmacies, of which 1600 are governmental and 1300 private. Belfarmacija has the most extensive network of pharmacies. Only public pharmacies are authorized to administer price reimbursements. The pharmacies are obliged to guarantee the availability of essential drugs and at least once every two weeks medicines are delivered to every pharmacy. To increase the accessibility of medicines in rural areas, feldshers are allowed to sell medicines in the rural feldsher-midwife stations. They receive only ad hoc training, and there are no requirements for a formal education as a seller of medicines. This is an exception that is applicable only in rural areas. All other drug retailers in pharmacies need to have had specialist education as a pharmacist.

Some of the visited pharmacies of Belfarmacija had advanced information technology (IT) systems. Anyone visiting can investigate what medicines are available in generic or brand-name forms in the visited pharmacy or others nearby. Patients can see all brand names of a particular generic medicine, with prices in the specific pharmacy and others nearby.

⁸² Rechel B et al. 2014 op cit pg 44.

All medicines for inpatients are free of charge by law. If there is a need for a special medicine not included in the formulary, the hospital is allowed to initiate an additional purchasing procedure. The budget for reimbursed medicines is included in the budget of the PHC facility, for reimbursement of the pharmacies. As an example, one visited pharmacy sold medicines for cardiovascular diseases (ATX code C01–C10) in April for 265.8 million BYR. Of this, 133.4 million BYR should be reimbursed by the PHC facility.

Affordability

Belarus has had some success with direct price controls on pharmaceuticals⁸³ and out-of-pocket expenditures have remained relatively low at around 20%. The out-of-pocket expenditure reflects mostly spending on pharmaceuticals for outpatients, including antihypertensive drugs, cholesterol-reducing drugs and antibiotics.⁸⁴

Essential medicines for effective prevention and control of CVDs are widely available, but reimbursement of these medicines is in most cases only partial or non-existent. Patients with CVDs who are prescribed medicines have to pay the full price, unless they belong to one of the exemption groups, which include veterans, pensioners, and patients with limited functional ability, i.e. the so-called invalidity or disability groups. Patients with the most severe forms of invalidity (groups I and II) pay 10% of the price of the medicine, while those in group III pay 50%. No reimbursement of medicines is available for the working population with hypertension or ischaemic heart disease. Compensation starts only when patients have developed disease with complications. In addition, medicines are reimbursed for only the first six months after AMI (ICD-10 codes I21 and I22), stroke or other cerebrovascular event (ICD-10 codes I60–I64). During this eligible period, they can be reimbursed for all needed medicines that are included in the formulary. However, after this period there is no reimbursement if they recover well and do not have any functional disability.

Patients with diabetes (ICD-10 codes E10–E14, P70, O24, E89, have better conditions for reimbursement – they can get any medicine for diabetes free of charge. Patients are reimbursed only for the brand medicines included in the formulary, i.e. medicines produced by the companies that have won the tender procedure. This means that most of the medicines that are eligible for compensation are produced in Belarus.

Extending coverage to include certain outpatient drugs could not only increase treatment coverage but also strengthen use of prescription-based medication and improve cost-effectiveness. In other countries, pilot-tests in which patients benefited from reimbursement of the cost of antihypertensive drugs resulted in better adherence to treatment and more consultations.⁸⁵

Rational use of medicines

In Belarus, some drugs require prescription, while others – including many antihypertension and antibiotic medicines – can be bought over the counter. There is need to strengthen pharmaceutical regulations inspection and enforcement, as over-the-counter availability contributes to irrational drug use, including for some NCD medications.

Interviews with family doctors indicated that poly-pharmacy is an issue of serious concern in Belarus. This reflects the model of care, which allows patients to go directly to a specialist. In the case of multimorbidity, patients may be prescribed a number of different medicines for different specific problems, without any control for compatibility of drugs. There is a system for registering adverse reactions to drugs, but family doctors traditionally do not see themselves as coordinators of care and often prefer not to change the recommendations or prescriptions of the specialists. There is also a marked difference between urban and rural areas, with a reported 10 times higher per capita consumption of medicines in urban areas than in rural areas.⁸⁶ Prescription practices are further reported to be influenced in part by doctor preference for certain brand names that they have been exposed to during their training.⁸⁷

⁸³ *ibid.*

⁸⁴ *ibid.*

⁸⁵ *ibid.*

⁸⁶ *ibid.*

⁸⁷ *ibid.*

Challenge 12. Strengthening health system management

A number of health system challenges (medicine supply issues, poor information systems, lack of coordination among providers) reflect the fact that, at both the institutional and the system level, many health systems require better management.

In Belarus, the President and the Council of Ministers are responsible for policy formulation, while the role of the Ministry of Health is to implement policies; the Ministry is also held responsible for health system performance. Hospitals and polyclinics at oblast and rayon level are managerially overseen by local government, through for example oblast committees, but have to report to the Ministry on issues of regulation, standards, etc.

While specific definitions vary management generally deals with quality and performance, whereas administration focuses on whether norms, standards and rules are being adhered to. In many health systems, including that of Belarus, the balance between the two is weighted towards the latter. There is a need to strengthen management as a tool for improving quality and outcomes, and ensuring that administration requirements do not encroach on the time needed for quality management. Effective quality management generally relies on the willingness of providers to disclose shortcomings; such transparency can only exist in a system that is focused on finding and correcting weaknesses in the system as opposed to blaming individuals.

Since 2001, all health care facilities have been formally licensed by a special committee in the Ministry of Health, with the aim of ensuring a certain standard of quality.⁸⁸ The sanitary epidemiological services also act as a public health and safety inspectorate, ensuring that certain standards, e.g. in hygiene, are being adhered to.

Hospital managers are seen as administrators, rather than leaders and decision-makers. Almost all health care facilities in Belarus (feldshers, GP practices, polyclinics and hospitals) are publicly run and financed. Facilities are managed in a hierarchical manner, with strong top-down control. Some decision-making power (e.g. on resources or number of dispensaries) is devolved to the regional (oblast) or district (rayon) level. The number of doctors and nurses, and the services offered, are determined according to centrally established norms and standards (the so-called demographic security and territorial norms) and the level of pay is determined centrally. As a result, managerial authority at the facility level is – with a few exceptions – quite limited. Individual hospitals, polyclinics, outpatient clinics and FAPs generally have little meaningful decision-making power over the financial resources, staffing levels, payment or types of service provided. While the number of specialists employed at a polyclinic is dictated by the size of the population in its catchment area (according to the above-mentioned norms), the chief doctor has some flexibility to change the composition (but not the number) of specialists to best serve the needs of the population. If, for example, there are many patients with diabetes, he or she may increase the number of endocrinologists on staff, while reducing the number of another type of specialist.

The chief doctor is also responsible for the allocation of institutional performance bonuses to staff members. He or she also manages the “over-the-counter” revenues obtained from the sale of services and items not covered by the benefit package, e.g. diagnostic services, personal care supplies, over-the-counter medications, and elective surgery, such as cosmetic surgery. These revenues may be used to pay bonuses to staff, hire additional doctors or procure some items of equipment and consumables.

Challenge 13. Creating adequate information solutions

In many countries, health systems have weak information systems, which are both a cause and a consequence of managerial weakness. This impedes performance management and monitoring at all levels. Information is needed on both quality and cost of services.

⁸⁸ Richardson E et al, op cit pg 29.

The Belarusian health system is characterized by extensive reporting systems that are used to monitor different parameters, leading to a corresponding high related workload at facility level. Data are collected at the institutional level and aggregated into regional and statistical reports, to ensure that state programmes and minimum social standards are met. While the statistical reporting systems are increasingly computerized, electronic patient record systems have yet to be developed; this is on the agenda of the Ministry of Health. The reporting system is fragmented; each speciality has its own system, and there is limited coordination between them, resulting in a high workload at facility level. This reduces the time available for clinical work. Respondents mentioned a high workload related to entitlements, employment and occupational issues, as well as the *dispanserizatsiya*, compounded by the system being paper-based at facility level.

Within the polyclinics, there are examples of efforts to streamline information, e.g. the use of comprehensive electronic patient records (so-called electronic patient's card) to improve coordination within the facility. All information about visits to any physician in the polyclinic is collected in the patient's e-card. District internists and nurses can check what kind of health care their NCD patients have received from different specialists in the polyclinic and initiate a visit to a PHC doctor when needed. This system also allows electronic information to be extracted for the patient or health care provider, when referral to other health care levels is needed. However, it was not clear if this practice has been systematized.

There are a number of centralized medical registers for different diseases, including cancer and diabetes. The diabetes registry is particularly noteworthy, because it contains population-based information on clinical outcomes, such as glycated haemoglobin levels, and complications (e.g. retinopathy, end-stage renal failure, amputations), for 96% of all those diagnosed with diabetes. Few other countries can match this. The data in this electronic registry are analysed and discussed with providers on an annual basis, and the results form the basis for recommendations to the Ministry of Health regarding the need for change, for example, to existing treatment protocols. To improve this even further, consideration may be given to analysing provider performance for factors that contribute to better outcomes; this information can be used to strengthen performance among providers with less favourable outcomes. Streamlined information systems can be an important enabler of success for health reforms, and the diabetes registry has probably been an important contributor to the relatively good diabetes outcomes in Belarus.

There is a clear need to give priority to information-gathering and analyses that will strengthen the quality and efficiency of the services, and to discontinue collection of data that are not used or are not strategically important. Belarus has some examples of good practice, such as the diabetes registry. The information system should facilitate increased coverage and strategic use of tools, such as cardiometabolic risk assessment. The system should also support the analysis of the consumption of different medicines by people with particular epidemiological profiles, in order to inform efforts to improve quality and efficiency. The country has completed national health accounts, which is an important step in strengthening information on health financing. Belarus has moved to payment methods based on capitation and has pilot-tested global budgets at regional level. In order to support these and further innovations, the information system needs to be developed to include adequate quality indicators.

Challenge 14. Overcoming resistance to change

In all areas, overcoming obstacles requires changes in the way health care organizations function. All organizations are resistant to change and the management of change is therefore an important challenge for the health system in NCD prevention and control.

Resistance to change in the Belarus health system is strong. While many countries have carried out major reforms, the Belarus health system has remained true to its Semashko roots. Having undergone only incremental changes, the system remains hierarchical, with changes dictated by senior levels of the Ministry of Health, the Council of Ministers or the President. A strong

monitoring and evaluation system ensures adherence to clinical guidelines. Health care providers therefore consider that one of their key roles is to follow guidelines; there are few incentives to ensure that guidelines are evidence-based so as to ensure good clinical outcomes.

Policy-makers in Belarus remain dedicated to the principle of free, universal access to health care for all citizens, but they recognize that changes are needed to improve the efficiency of the delivery systems. Resistance to changes to the health system is not confined to the health sector. The Ministry of Health has, for example, tried to amend the regulations that require employees to obtain a certificate from a health care facility from the first day of illness, but met with resistance in the Cabinet of Ministers. Effective advocacy is needed, both at senior levels of government and with other sectors. Efforts to rationalize ambulance use, for example, have been met with resistance from the population, who expect free and frequent access to ambulance services, which are considered part of primary health care. Both providers and Ministry of Health officials are acutely aware of the need to change people's attitude towards health and health care, and to find ways of ensuring greater compliance with medications as well as disease-prevention and health-promotion messages.

If the high burden of NCDs in Belarus is to be reduced, major aspects of the health system will need to undergo a paradigm shift. Policy-makers, health care providers, patients and the population at large will need to make difficult changes. Healthier lifestyles and improved health literacy are needed and people have to become more engaged in the management of their own disease and take greater responsibility for their own health. Providers need to develop new skills and adjust to a role of helping patients manage their diseases over long periods. Policy-makers need to identify, oversee, facilitate and incentivize the changes, including strengthening models of cost-effective, comprehensive care and recognize that the behaviour changes that are required of health care providers, patients and the population in general cannot simply be imposed.

Challenge 15. Ensuring access to care and reducing financial burden

Total health expenditure in 2012 accounted for 5% of GDP – slightly lower than the average in CIS countries and considerably lower than the average in EU countries. The majority of health expenditure in Belarus is covered by the state. Household out-of-pocket expenditure on health is quite low, at around 23% of total health expenditure (THE). This represents 1.1% of GDP and around 1.8% of household expenditure.⁸⁹ In 2010, about 11% of households incurred health expenditures exceeding 5% of household consumption, but less than 1% of households experienced catastrophic health expenditures exceeding 15% of household consumption. The incidence of catastrophic payments is highest among lower middle class households. This level of financial protection is comparable to that found in high-income EU countries.

Pharmaceuticals are the main component of out-of-pocket expenditure, representing more than 70%.⁹⁰ Out-of-pocket expenditures do not seem to represent a significant barrier to health care access. Most people who forego health care when they feel they need it generally opt to self-treat (52.9%, confidence interval (CI) 47.6–58.1%).⁹¹ Only 0.3% (CI 0.0–0.8%) felt that services were unaffordable, while 2.9% said that they could not afford drugs (CI = 1.1–4.6%).

The number of outpatient contacts in 2012 was 12.9 per person; hospital admissions were the highest in the WHO European Region at 31 per 100 population.⁹² Polyclinics are the main provider of primary care services, with family medicine largely available only in rural areas, where around 30% of the population live. The high utilization rates, however, do not translate into effective prevention of CVDs, as only a small proportion of hypertension is detected and managed, and there is a high prevalence of smoking and alcohol use, and a lack of systematic detection and management of people at high risk for CVD. Antihypertensive drugs are reimbursed only in the acute phase of illness, and statins and glucose test strips for adults are not reimbursed.

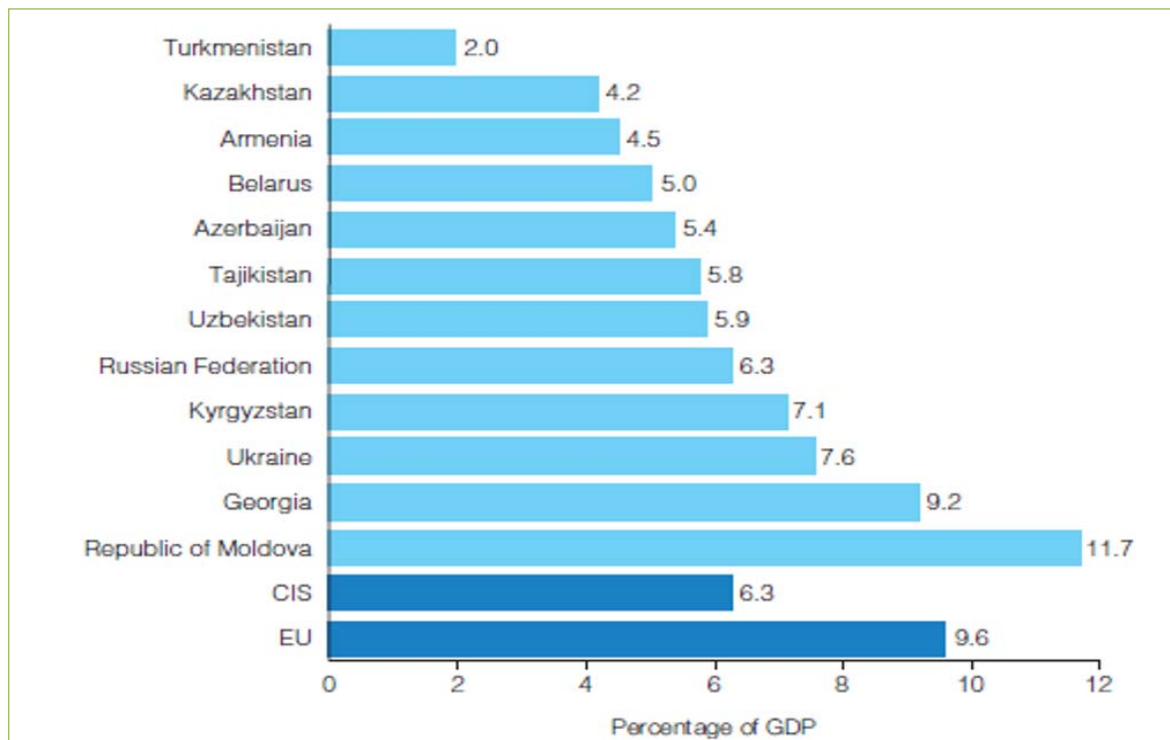
⁸⁹World Bank 2013 Belarus Public Expenditure Review op cit pg 30.

⁹⁰World Bank Public Expenditure Review 2013 op cit. pg. 30.

⁹¹Balabanova D et al. Health care reform in the former Soviet Union: beyond the transition: Health Service Research, 2012, 47(2):840-864.

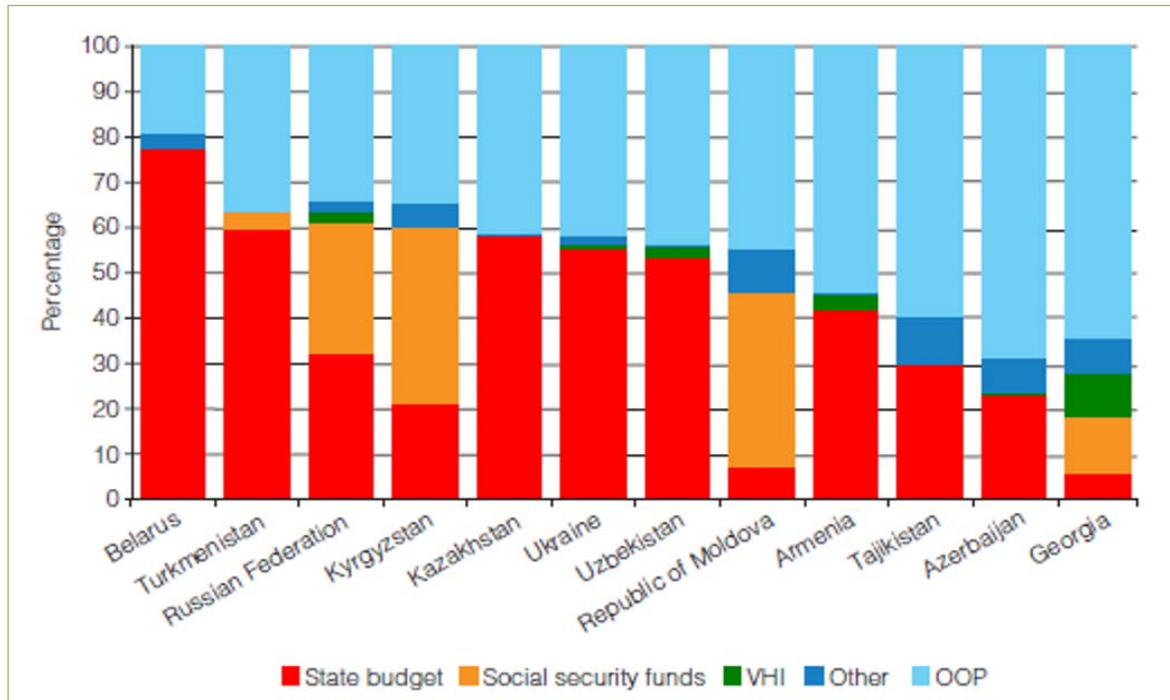
⁹²WHO Health for All database.

Figure 16. Total health expenditure as percentage of GDP, WHO estimates, 2012



Source:Rechel B et al. 2014⁹³

Figure 17. Distribution of total health expenditure by financing agent, WHO estimates, 2012



Source:Rechel B et al. 2014⁹⁴

⁹³ Rechel B et al. op cit pg 44.

⁹⁴ ibid.

4. Innovations and good practice

Belarus, like other CIS countries, is experiencing changes in lifestyle and diet, with increasing rates of obesity and diabetes. The prevalence of diabetes in Belarus has more than doubled in the past decade and is continuing to increase. A recent⁹⁵ risk assessment found that 26% of the population were obese and 44% overweight. Some 15.5% were at high risk of developing diabetes in the next 10 years and 3% of the population studied had undiagnosed diabetes.⁹⁶ This indicates a need to scale up efforts to find those at high risk and improve current methods of detection.

Belarus has been collecting outcome data for diabetes care, including complication rates, for more than 15 years. The launch of an electronic National Diabetes Registry in 2008 facilitated the collection and pooling of epidemiological and statistical data on diabetes patients, together with service utilization on regional levels. This has contributed to resource allocation based on actual demand (rather than on the basis of line items), and to better planning, organization and care. Covering more than 96% of patients diagnosed with diabetes, the electronic diabetes registry is used each year as a basis for recommendations to the Ministry of Health for changes in diabetes management. The registry is hosted by the Republic Centre of Endocrinology. Information in the registry includes type of diabetes, prescribed medication and any complications. A useful feature of the diabetes registry is that health professionals in each region can directly access the reports produced from the registry data

Insulin and other diabetes medication are fairly well covered in the benefit package in Belarus (in comparison with other disease groups). Insulin, hypoglycaemic medication, syringes and glucometers are provided free of charge; A mix of professional and patient NGOs are actively involved in diabetes care in Belarus and represent the diabetes community both within and outside the country. The Belarusian humanitarian organization, Children's Diabetes (ByCD) was established in 1992 and has been a member of the International Diabetes Federation (IDF) since 2003. The active involvement of this organization in policy and health reform dialogues, its representation of the Belarusian diabetes community in the international scientific and research arena, and its active involvement in disease self-management are a good example of stakeholder involvement to improve NCD control in Belarus. Within diabetes care, other important initiatives have been pilot-tested, such as the use of therapeutic nurses to improve the quality of patient education and involvement.

All the above efforts have contributed to a reduction in diabetes complication rates, and provide a good foundation for further strengthening of service quality to increase the number of people with diabetes whose disease is well controlled (i.e. who have a glycosylated haemoglobin level of less than 7%).



⁹⁵ Shelpelkevich A et al. Evaluation of the prevalence of obesity and overweight in the Belarus within the Framework of the National Campaign "Early Detection and Prevention of Type 2 Diabetes Mellitus". Presented at European Society for Endocrinology, Copenhagen, Denmark, 2013. Endocrine Abstracts, 2013, 32:765; DOI:10.1530/endoabs.32.P765.

⁹⁶ Personal communication, Shelpelkevich Alla.

5. Policy recommendations

The Government of Belarus has given priority to health, as evidenced by the relatively high public allocations to health as a percentage of overall government expenditures. The sector has largely been protected from the effects of recent public financial consolidation efforts. The majority of the population (>70%) live in urban areas, where the system of polyclinics still prevails. In rural areas, PHC based on a family medicine model has been introduced. Compared with other countries of the former Soviet Union (FSU), there have been only incremental changes to the inherited Semashko health system. Unlike most other FSU countries, Belarus has managed to maintain good financial protection for its citizens, with out-of-pocket expenditures relatively low. There is relatively good user satisfaction with the health system.⁹⁷

Overall mortality in Belarus is still high (1137.7/100.000 in 2011) compared to other countries in the WHO European Region, but it has started to fall. With the relatively high public allocations to health efficient use of funds is a priority if improvements are to be made.

A sizable proportion of the pharmaceuticals used in the country is produced locally, contributing to high use of generic drugs. There have been some successes in controlling the price of medicines. The health system in Belarus however has more beds per capita than any other country in the WHO European Region, and the number of health workers per population is among the highest in the world.

There are indications that the fiscal sustainability⁹⁸ of the health sector in Belarus may come under increasing pressure. A variety of factors is likely to contribute to this, including the rising cost of inputs (including wages), national income growth and related increases in health expenditures, and population aging, which will increase demand for services.

The incremental path of policy reform has ensured stability, a high level of financial protection and sustained access, but has been less successful in reducing excess hospital capacity, developing the primary care level, preventing noncommunicable diseases and improving the quality of care. With NCDs being responsible for most of the disease burden and increasing financial pressures, there is an acknowledged need to strengthen efficiency, seek ways to rationalize service delivery and improve the quality of services, particularly for CVD and diabetes.

CVDs are responsible for 63% of all deaths in Belarus. Premature cardiovascular mortality has been declining but rates are still higher than the averages seen in the European Union (Figure 1). CVDs thus account for nearly 80% of the gap in life expectancy between Belarus and western European countries.⁹⁹ NCDs are often chronic in nature and their effective management requires patients to be actively involved in, and responsible for, managing their condition, including making changes in lifestyle. As the Belarusian population ages, rates of multi-morbidity are increasing, which underlines the importance of a comprehensive model of primary care, with efficient referral systems to more specialized levels.

Belarus has achieved good results in scaling up tertiary care and treatment for CVD. However, there is substantial scope to scale up the most cost-effective interventions in CVD and diabetes control, including control of risk factors, such as smoking, alcohol misuse, poor diets and low physical activity. Hypertension and hyperlipidaemia are still underdetected and undermanaged. There are important opportunities, both at population and individual levels of service, to scale up core interventions that can improve outcomes for CVD and diabetes. The implementation of these core interventions will need to go hand in hand with a shift towards a care model that facilitates greater patient engagement and empowerment.

⁹⁷ Richardson et al, op cit pg 27.

⁹⁸ World Bank 2013 Belarus Public Expenditure Review op cit pg 30.

⁹⁹ *ibid.*

Recommendation 1. Accelerate efforts to control tobacco and alcohol use, nutrition and lifestyle risk factors for CVD and diabetes.

The greatest opportunity for improving CVD outcomes in Belarus lies in scaling up population interventions to reduce the prevalence of smoking and alcohol abuse and to promote healthier lifestyles. Belarusian men have the sixth-highest smoking rate in the WHO European Region¹⁰⁰ and while rates have fallen slightly, this has been compensated by increased smoking rates among women. Belarus was one of the first countries to ratify the FCTC, which includes a comprehensive set of measures that have proven effectiveness in reducing tobacco prevalence. The assessment of the status of these core interventions for tobacco control revealed that there is substantial scope to scale up efforts.

Alcohol consumption per capita in Belarus is the highest in the WHO European Region and is growing. Important opportunities exist to increase the coverage of core interventions for alcohol control, including better enforcement of existing legislation. Work has started to address the problem of poor nutrition, obesity and low physical activity. Stronger surveillance is needed to determine the effectiveness of initiatives, but the introduction of legislation to reduce salt and sugar intake and actions to control the marketing of unhealthy foods and beverages to children are important starting-points.

Recommendation 2. Optimize service delivery and strengthen primary health care, particularly in urban areas, to take a greater role in primary and secondary prevention and management of CVD and diabetes.

Within individual services there are important opportunities to improve CVD and diabetes outcomes, through targeted scaling up of core interventions aimed at finding and managing those at highest risk of CVD and diabetes. Action is needed at different levels, but looking through the “lens” of CVD and diabetes outcomes, key actions related to service delivery models, financing and incentive systems, information systems, and human resources can be identified.

Service delivery model

1. Continue the critical appraisal of the system of dispensarizatsiya and develop alternative models for NCD prevention and health promotion.
2. Develop an alternative PHC model based on family medicine for urban areas and test alternative models for outpatient speciality care (hospitals vs polyclinics).
3. Continue efforts to fine-tune and strengthen primary health care in rural areas.
4. Seek ways to rationalize hospital services and coordinate better the flow of patients between levels of care.
5. Continue innovations, like the introduction of doctor assistants to support primary and secondary NCD prevention; review experiences and draw lessons for future action.
6. Develop a plan of action for a stronger PHC model. This may include, for example, strengthening leadership for PHC, operational research to underpin service delivery reform, strengthening training and medical curricula, introducing a motivational package to strengthen the capacity of GPs and district internists, advocacy at high levels of policy-making, a communication plan, careful pilot-testing of new models of care, and introduction of financial and non-financial incentives.
7. Consider options for changing attitudes among the population and health care providers towards free ambulance services, promoting greater use of PHC; targeted operational research may be useful.
8. Shift the role of specialists away from providing care for patients with uncomplicated disease towards more involvement in supporting primary care providers in adhering to standards (audits, education) and consulting on patients with complications or disease that is difficult to control.

¹⁰⁰ WHO European Health Report 2015.

9. Evaluate schools for diabetes and hypertension, to share experiences and good practices; include this area in patient satisfaction surveys.
10. Make check-in with nurse examinations (for measurement of blood pressure, weight, etc.) mandatory for all clinic patients. Encourage nurses to play a more active role in risk factor screening, by systematically documenting risk factors. Strengthen and define the role of nurses, peer groups, and schools for diabetes and hypertension.
11. Review the division of roles (protocols) for primary and secondary prevention of CVD and diabetes, with a focus on increasing the coverage of core individual and population-based interventions, e.g. finding people with high cardio metabolic risk profile, and managing them accordingly.
12. Review available tools, e.g. the WHO package of essential noncommunicable disease interventions for PHC (PEN).
13. Reinstate the training of diabetes education nurses as soon as possible and establish positions at the primary level of care (i.e. in GP practices and polyclinics).
14. Revise and update guidelines for early identification and better management of diabetes, to enable doctors (GPs, therapeutics and endocrinologists) at the first level of care to diagnose and manage people with diabetes without referral.
15. Ensure that sufficient time is allowed for staff to counsel patients on being involved in care plans.
16. Strengthen operational research to inform and support development of optimized models of service delivery, with a focus on cost-effective, comprehensive patient-centred care that can deliver effective primary and secondary NCD prevention.

Health financing and incentive systems

1. Consider expanding reimbursements to fully compensate hypertension medications from the moment of diagnosis; explore the feasibility of reimbursing the use of statins as a preventive measure.
2. Consider full reimbursement of glucose testing strips for adults, to enhance self-management of patients with diabetes.
3. Consider including alcohol and smoking cessation programmes and medications in the benefit package.
4. Consider ways to incentivize participation in hypertension schools, e.g. through increased entitlements.
5. Explore options to establish an electronic patient record system; use the diabetes registry as a basis to pilot-test a pay-for-performance scheme in PHC, targeting improvement of diabetes outcomes. Integrate reviewed algorithms and clinical guidelines for diabetes with development of payment for performance.
6. Review carefully the payment for performance pilot-test outcomes and explore options for strengthening diabetes management. Use the lessons learnt to strengthen systems for other parts of NCD control, e.g. CVDs.

Evidence-based medicine, pharmaceuticals and the information system

1. Consider development of a national strategy to strengthen integration of evidence-based medicine throughout the health system.
2. Consider introducing independent external reviews of guidelines and algorithms.
3. Review the process of development of clinical guidelines and algorithms, including the roles of different actors, for example to broaden the scope to include PHC practitioners and nurses.
4. Review and ensure good links between the updating of the essential drugs list and the development and updating of clinical guidelines.

5. Consider developing policy briefs on best practices and sharing them with providers. Use can be made of the strong information systems, in particular the national diabetes registry. To fully exploit the diabetes registry, develop an electronic patient record system with direct links to the registry, and with feedback loops about performance and follow-up learning systems. Eventually, expand the electronic patient record system to include other NCDs, such as hypertension, CVD and COPD. Consideration may also be given to experiences in other countries, e.g. the Danish Data Capture System.
6. Consider exchange visits to other countries that have introduced novel approaches in the area of information systems for NCD management, e.g. Denmark.
7. Explore ways to streamline registration of risk factor detection and management in the information system.
8. Review the workload in facilities resulting from paperwork for entitlements, occupational issues and the dispensarizatsiya. Look for ways of simplifying and reducing paperwork to free up time for clinical work.
9. Before introducing new requirements for data collection at facility level, look for ways of reducing information gathering, to safeguard available staff time for clinical work and collection and analysis of strategic data.
10. Integrate SCORE risk assessment in clinical algorithms as a core role for PHC doctors and nurses in CVD control and diabetes prevention.
11. Review and update curricula for patient education programmes, including diabetes and hypertension schools; incorporate the use of new technologies, to assist patients in managing their health.
12. Train practising doctors in rational prescribing and include rational prescribing in the medical curriculum.
13. Ensure that generic drug names – not brand names – are used in the medical curriculum.
14. Strengthen regulations on availability of pharmaceuticals and their enforcement.

Human resources

1. Develop a motivational incentive package to make general practice more attractive; design incentives directed towards retaining staff in PHC.
2. Carry out a study to determine the balance between increased production of health workers, e.g. doctors, and staff migration rates.
3. Ensure that updated and revised algorithms and protocols are systematically integrated in training courses for PHC interns and other health professionals, to ensure that PHC staff have the skills to be able independently to diagnose and manage uncomplicated CVD and diabetes.
4. Strengthen undergraduate, residency, and continuing medical education curricula for family doctors, to ensure that they feel confident in their ability independently to diagnose and manage people with uncomplicated CVD or diabetes.
5. Develop a strategy to increase the capacity of mid-level providers (feldshers and nurses) working in health facilities to take a more active role in detecting low- and medium-risk patients with hypertension or diabetes. This should include defining the scope of services, specifying clear referral criteria for each illness, and developing straightforward, algorithm-based clinical protocols. Nursing school curricula and continuing education modules should be revised accordingly, to ensure that both nurses and feldshers entering the workforce and those already practising have the necessary core competencies.
6. Strengthen undergraduate, postgraduate and continuing public health education curricula for the public health workforce, to include evidence-based public health, biostatistics, epidemiology of NCDs and their risk factors, health promotion and disease prevention, public health policy development, monitoring and evaluation.

Recommendation 3. Strengthen strategies for patient empowerment through a patient-centred approach

If Belarus is to reduce its burden of CVD and diabetes, large parts of the health system will need to undergo a substantial shift in focus. This will require difficult changes from policy-makers, health care providers, patients and the population at large.

The population needs to adopt healthier lifestyles and to have greater health literacy. People have to become more engaged in the management of CVD and diabetes and take greater responsibility for their own health. Such changes need to be facilitated and supported, not only by the health system, but also by other sectors and actors. At the population level in particular, better control of risk factors, tobacco use, alcohol abuse and unhealthy lifestyles has huge potential, but there is also a need to promote changes in attitudes through greater engagement of people in their own care in individual services. Patient organizations could be strengthened, and electronic access to information about health and illness should be expanded.

Providers in health facilities need to develop new skills and adjust to an increasing role of helping patients manage their diseases over long periods. This will require a change to the current model of primary care, particularly in urban areas.

The workforce, in particular at the primary level of care, needs to be strengthened and upgraded to be able to manage uncomplicated CVD and diabetes independently. They should be supported by management tools that focus on greater patient involvement, quality and performance, linked with adjusted algorithms, protocols and supportive information systems. Incentives should help motivate and retain staff, support patients in taking a proactive role, and improve adherence, for example by reimbursing medication taken as a preventive measure. Efforts should be made to strengthen provider accountability for clinical outcomes, rather than just for following clinical guidelines.

Policy-makers need to identify, oversee, facilitate and incentivize the changes at population and individual service levels. It is not possible simply to mandate the kind of behaviour changes that are required of health care providers, patients and population.

Efforts to strengthen implementation of core interventions for CVD and diabetes should be underpinned by strengthened capacity for operational policy analysis and political commitment, including from other sectors. The latter can be facilitated by targeted high-level consultation and advocacy, and effective use of existing high-level forums to oversee an intersectoral approach. It would also be helpful to carry out routine analysis of preventable hospitalizations due to NCDs, and coordination and continuity of care, to quantitatively assess the performance of health providers at the primary care level. A methodology for such analyses has recently been developed and applied in Estonia. For population service interventions, intersectoral plans with defined core service benchmarks (see Annex 1), dedicated resources, tools and frameworks (like the FCTC) can be very helpful. Resistance and challenges to new or improved models of service delivery should be anticipated and taken into account in designing pilot-tests. Pilot-tests should be rigorously evaluated and models carefully reviewed and amended before they are scaled up to the national level.



Annex 1. Criteria for scoring coverage of population interventions

	Country score	Limited	Moderate	Extensive
Range of anti-smoking interventions				
Raise tobacco taxes		Tax is less than 25% of retail price	Tax is between 25% and 75% of retail price	Tax is greater than 75% of retail price
Smoke-free environments		100% smoke-free environment enforced in schools and hospitals only	100% smoke-free environment enforced in hospitals, schools, universities, public transport and workplaces	100% smoke-free environment enforced in all public places, including hospitality sector
Warnings of dangers of tobacco and smoke		Warning labels required on tobacco products, size not specified	Warning labels on all tobacco products at least 30% of package size (front and back)	Warning labels are greater than 50% of package size (front and back), with pictures (standardized packaging)
Bans on advertising, promotion, sponsorship		No ban, or ban on national TV, radio and print	Ban on direct and indirect advertising and promotion	Ban on all advertising and promotion, including at points of sale, with effective enforcement
<i>Quit lines and nicotine replacement therapy (NRT)*</i>		No quit lines or government-funded cessation services, but NRT allowed and available for full pay by individuals	Quit lines, government-funded cessation services are available (possibly for payment). NRT available for full pay.	Toll-free quit lines, cessation services and NRT are available and affordable (covered at least partially)
Interventions to prevent harmful alcohol use				
Raise taxes on alcohol		Alcohol taxes follow price index	Alcohol taxes follow price index; special taxes on products attractive to young people	Alcohol taxes follow price index and related to alcohol content; special taxes on products attractive to young people
Restrictions, bans on advertising and promotion		Regulatory frameworks exist to regulate content and volume of alcohol marketing	Regulatory frameworks exist to regulate content and volume of alcohol marketing including direct and indirect marketing and sponsorship	Full ban on alcohol marketing of any kind
Restrictions on availability of alcohol in retail sector		Regulatory frameworks on serving of alcohol in governmental and educational institutions	Regulatory frameworks on serving of alcohol in governmental institutions and ban on serving alcohol in educational institutions	All governmental and educational institutions free of alcohol
<i>Minimum purchase age regulation and enforcement*</i>		Minimum purchase age of 18 years for all alcohol products	Minimum age of 18 years for all alcohol products and effective enforcement	Minimum age of 18 years for all alcohol products and effective enforcement; loss of licence to sell alcohol if found breaking the law
<i>Allowed blood alcohol level for driving*</i>		Blood alcohol content maximum of 0.5 g/L	Blood alcohol content maximum 0.5 g/L, and zero for novice and professional drivers	Blood alcohol content maximum 0.2 g/L and zero for novice and professional drivers

Country score	Country score	Limited	Moderate	Extensive
Interventions to improve diet and physical activity				
Reduce salt intake and salt content in foods	<10% reduction in salt intake in past 10 years	About 10% reduction in salt intake in past 10 years	>10% reduction in salt intake in past 10 years	
Virtually eliminate <i>trans</i> -fatty acids from the diet	There is no evidence that <i>trans</i> -fats have been significantly reduced in the diet	<i>Trans</i> -fats reduced in some food categories and industry operators but not overall	<i>Trans</i> -fats eliminated from the food chain through government legislation and/or self-regulation	
<i>Reduce free sugar intake*</i>	The aim to reduce the intake of free sugars is mentioned in policy documents but no action has been taken	The reduction of intake of free sugars by 5% is mentioned and partially achieved in food categories	The reduction of intake of free sugars by 5% is monitored with a focus on sugar-sweetened beverages	
<i>Increase intake of fruit and vegetables*</i>	The aim to increase consumption of fruit and vegetables is mentioned but no monitoring data have been collected to support it.	The aim to increase consumption of fruit and vegetables is in line with the WHO/FAO recommendations of at least 400 g/day and some initiatives exist	The aim to increase consumption of fruit and vegetables is in line with the WHO/FAO recommendations of at least 400 g/day with population initiatives, and incentives to increase availability, affordability and accessibility	
<i>Reduce marketing pressure of food and non-alcoholic beverages to children*</i>	Marketing of foods and beverages to children is noted as a problem but has not been translated into specific action in government-led initiatives.	WHO recommendations on marketing have been acknowledged and steps have been taken in self-regulatory approach to reduce marketing pressure on children	WHO recommendations on marketing and the Implementation Framework on Marketing followed consistently, including mechanism for monitoring	
<i>Promote awareness about diet and activity*</i>	There has been no workforce development for nutrition and physical activity; nutrition and physical activity are not priority elements in primary care	Some workforce development for nutrition and physical activity are starting to be considered priority elements in primary care	Workforce development for nutrition and physical activity exists; nutrition and physical activity are priority elements in primary care	

* Indicates criteria additional to those mentioned in the Global action plan for the prevention and control of *noncommunicable diseases 2013-2020* (Geneva: World Health Organization; 2013).



Annex 2. Criteria for scoring coverage of individual services

	Country score	Limited	Moderate	Extensive
CVD and diabetes				
Risk stratification in primary health care		10-year CVD risk is documented in fewer than 30% of records of patients over 40 years of age with at least one main CVD risk factor; specific risk factors not routinely documented	10-year CVD risk is documented in 30-60% of records of patients over 40 years of age with at least one main CVD risk factor. Incomplete risk factor documentation or not using systematic method	10-year CVD risk routinely documented in more than 60% of records of patients over 40 years with at least one main CVD risk factor. Systematic method of calculation with routine documentation of specific risk factors
Effective detection and management of hypertension		Fewer than 30% of estimated cases with high blood pressure are identified in primary health care, evidence-based generic antihypertensive drugs infrequently prescribed, no efforts to address patient adherence	30-60% of estimated cases with high blood pressure are identified in primary health care, evidence-based antihypertensive drugs often (25-75%) prescribed, some efforts to increase patient adherence but not systematic	More than 60% of estimated cases with high blood pressure are identified in primary health care, evidence-based generic antihypertensive drugs routinely (>75%) prescribed; government-funded systematic efforts to increase adherence
Effective primary prevention in high-risk groups		Prescribers not aware of indications for primary prophylaxis. Under 10% of patients with very high (>30%) 10-year CVD risk identified and prescribed multidrug regimens (antihypertensive, acetylsalicylic acid, and statin) for primary prophylaxis. Acetylsalicylic acid prescribed indiscriminately to all hypertensive patients.	Prescribers aware of indications for primary prevention with multidrug regimen. Low coverage (10-25%) of very high-risk patients with primary prophylaxis, or appropriate drug regimens prescribed but very low patient adherence. Acetylsalicylic acid prescribed indiscriminately to all HTN patients.	Routine prescription of multidrug regimens, including statins, for patients at very high CVD risk. Coverage of at-risk patients exceeds 25%. Evidence for good long-term patient adherence. Acetylsalicylic acid not prescribed to hypertensive patients with low or medium CVD risk.
Effective secondary prevention after AMI including acetylsalicylic acid		Fewer than 25% of patients after AMI receive acetylsalicylic acid, beta-blockers and statins	25-75% of patients after AMI receive acetylsalicylic acid, beta-blockers and statins	More than 75% of patients after AMI receive acetylsalicylic acid, beta-blockers and statins
Rapid response and secondary care after AMI and stroke*		Fewer than 25% of those with AMI or stroke receive diagnosis and care within 6 hours of first symptoms	25-50% of those with AMI or stroke receive diagnosis and care within 6 hours of first symptoms	More than 50% of those with AMI or stroke receive diagnosis and care within 6 hours of first symptoms

	Country score	Limited	Moderate	Extensive
Diabetes				
<i>Effective detection and general follow-up*</i>		Fewer than 75% of primary health care practices establish and maintain a register of all patients aged 17 or over with diabetes <25% detection/registration rate, based on estimated prevalence of type 2 diabetes in adult population. Not using evidence-based, systematic method to select asymptomatic patients for screening.	25-75% of primary health care practices establish and maintain a register of all patients aged 17 or over with diabetes 25-50% detection/registration rate, based on estimated prevalence of type 2 diabetes in adult population. Using evidence-based, systematic method to select asymptomatic patients for screening, but limited coverage.	More than 75% of primary health care practices establish and maintain a register of all patients aged 17 or over with diabetes More than 50% detection/registration rate based on estimated prevalence of type 2 diabetes in adult population. Using evidence-based, systematic method to select asymptomatic patients for screening with high coverage
Patient education on nutrition and physical activity and glucose management		Fewer than 25% of those diagnosed with type 2 diabetes had at least 3 primary health care visits in past year Fewer than 25% of registered people with diabetes receive organized dietary counselling Primary health care has no counselling about physical activity Fewer than 25% of registered people with diabetes had glycosylated haemoglobin measurement in past 12 months	25-75% of those diagnosed with type 2 diabetes had at least 3 primary health care visits in past year 25-75% of registered people with diabetes receive organized dietary counselling Primary health care routinely offers counselling on physical activity 25-75% of registered people with diabetes had glycosylated haemoglobin measurement in past 12 months	More than 75% of those diagnosed with type 2 diabetes had at least 3 primary health care visits in past year More than 75% of registered people with diabetes receive organized dietary counselling Primary health care routinely offers counselling and options for physical activity through partnerships More than 75% of registered people with diabetes had glycosylated haemoglobin measurement in past 12 months
Hypertension management among diabetes patients		Fewer than 25% of registered people with diabetes with hypertension have achieved a blood pressure <140/90 mmHg; angiotensin-converting enzyme (ACE) inhibitors not routinely prescribed as first-line antihypertensive.	25-75% of registered people with diabetes with hypertension have achieved a blood pressure <140/90 mmHg; ACE inhibitors routinely prescribed as first-line antihypertensive	More than 75% of registered people with diabetes with hypertension have achieved a blood pressure <140/90 mmHg; ACE inhibitors routinely prescribed as first-line antihypertensive
Preventing complications		Fewer than 25% of registered people with diabetes had a foot examination, eye examination (fundoscopy) and urine protein test in past 12 months	25-75% of registered people with diabetes had a foot examination, eye examination (fundoscopy) and urine protein test in past 12 months	More than 75% of registered people with diabetes had a foot examination, eye examination (fundoscopy) and urine protein test in past 12 months

* Indicates criteria additional to those mentioned in the Global action plan for the prevention and control of *noncommunicable diseases 2013-2020* (Geneva: World Health Organization; 2013).

Annex 3. Data sources and methods

Data sources for this report include demographic and health-related indicators found in the WHO European Health for All database (January 2014 update). The indicators selected for analysis reflect expert recommendations and practical considerations of what evidence was available.

Consideration has been given to estimates and projections of data reported annually by the 53 Member States of the WHO European Region; country subgroups have been applied to highlight regional trends. These subgroups reflect those defined in the Health for All database, as outlined below.

- EU-15: the 15 Member States that belonged to the European Union (EU) before 1 May 2004: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.
- EU-12: the 12 new Member States that joined the EU in May 2004 or in January 2007: Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia.
- CIS (Commonwealth of Independent States until 2006): Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, the Republic of Moldova, the Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

Countries in the WHO European Region but not included in these groups are: Albania, Andorra, Bosnia and Herzegovina, Croatia, Iceland, Israel, Monaco, Montenegro, Norway, San Marino, Serbia, Switzerland, the former Yugoslav Republic of Macedonia and Turkey.



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