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**Better
noncommunicable
disease outcomes:
challenges and
opportunities for health
systems**

**TAJIKISTAN
COUNTRY ASSESSMENT**



**World Health
Organization**

REGIONAL OFFICE FOR **Europe**

Better noncommunicable disease outcomes: challenges and opportunities for health systems

**Tajikistan country assessment: focus on
cardiovascular disease**

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ABSTRACT

Cardiovascular diseases are the predominant cause of death in Tajikistan, with a growing burden of ischemic heart disease, strokes and cirrhosis between 1990 and 2010. Considering this, this report focuses on cardiovascular diseases and their risk factors, such as hypertension and poor nutrition; it is estimated that 40% of the Tajik population is overweight and 9% is obese. Other risk factors such as diabetes and tobacco use are also analysed. While Tajikistan has made some progress in implementing anti-smoking policies and reducing the harmful use of alcohol, opportunities such as better enforcement and monitoring of legislation exist. Significant challenges also remain for coverage of core individual services, especially in the effective diagnosis and management of key cardiovascular disease conditions, such as hypertension and diabetes. This report identifies key health system challenges that prevent greater coverage of core noncommunicable diseases interventions and services, and proposes three strategic recommendations to accelerate gains in cardiovascular diseases outcomes.

Keywords

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Acronyms

AMI	acute myocardial infraction
BBP	basic benefit programme
BMI	body mass index
CIS	Commonwealth of Independent States
CPG	clinical practice guidelines/protocols
CQI	continuous quality improvement
CVD	cardiovascular diseases
EBM	evidence-based medicine
ECG	electrocardiogram
EDL	essential drug list
EU	European Union
EurAsEC	Eurasian Economic Community
GDP	gross domestic product
HPAU	Health Policy Analysis Unit under the Ministry of Health and Social Protection of Population
HSCC	Health Sector Coordination (Sub) Committee
HSS	health system strengthening
INCC	Intersectoral National Coordination Committee
M&E	monitoring and evaluation
MTEF	midterm expenditure framework
NCDs	noncommunicable diseases
NCC	National Coordination Committee
NHS	National Health Strategy of the Republic of Tajikistan 2010–2020
NRT	nicotine replacement therapy
OOP	out-of-pocket
PEN	package of essential noncommunicable disease interventions for primary health care in low-resource settings
PHC	primary health care
RCMSI	Republican Centre for Medical Statistics and Information
TB	tuberculosis
TWG	technical working group
USAID	United States Agency for International Development
VAT	value-added tax
WHO FCTC	WHO Framework Convention on Tobacco Control

Introduction and rationale

Recent studies revealed that noncommunicable diseases (NCDs) will account for 69% of global deaths by 2030 with 80% in low- and middle-income countries.¹ To address the growing burden of NCDs, in 2012 the World Health Assembly in resolution WHA 65.8 endorsed an important new global target – to reduce premature mortality from NCDs by 25% by 2025 – referred to as the 25 by 25 target. NCDs include cardiovascular diseases (CVD), diabetes, cancers and respiratory diseases. To tackle NCDs, a complex health systems response including long-term and intersectoral coordination is needed across a continuum of care.² The Ministry of Health and Social Protection of Population of Tajikistan approached WHO to assess the achievements and challenges in its health system response to NCDs in order to achieve the 25 by 25 target.

This country assessment is part of a WHO Regional Office for Europe project to increase support to Member States in strengthening their health systems to improve NCD outcomes. Five countries participated in a first round of assessments: Hungary, Kyrgyzstan, the Republic of Moldova, Tajikistan and Turkey. Assessments were carried out by multidisciplinary teams using a common approach and based on a structured guide,³ tailored to the specific needs of each country (Annexes 1 and 2). The guide was based on a background paper exploring the role of health systems in tackling NCDs.⁴

The country assessment had two objectives. First, they aimed to produce pragmatic, contextualized and actionable policy recommendations for health system strengthening (HSS) and to allow accelerating gains in key NCD outcomes for Tajikistan. The assessments and the accompanying policy recommendations are intended to provide a platform for a comprehensive NCD action plan to serve as an umbrella for a number of existing subsectoral plans. Second, as part of the regional project, the assessments will contribute to the sharing of knowledge and experiences among the countries of the Region on common health system barriers to NCD control, and promising approaches to overcome them. Early results of the assessment were featured in:

- the High-level Meeting on Health Systems for Health and Wealth in the Context of Health 2020 on 17–18 October 2013 in Tallinn, Estonia;
- the 10th Flagship Course on Health Systems Strengthening on 21–30 October 2013 in Barcelona, Spain;
- the International anniversary conference marking 35 years of the Declaration of Alma-Ata on primary health care on 6–7 November 2013 in Almaty, Kazakhstan; and
- the WHO European Ministerial Conference on the Prevention and Control of NCDs in the Context of Health 2020 on 3–4 December 2013 in Ashgabat, Turkmenistan.

The predominant causes of death in Tajikistan are CVD (39%), cancers (7%), respiratory diseases (3%), diabetes (2%) and other NCDs (8%); communicable and other diseases account for 41% of deaths.⁵ For this reason, this assessment mainly focuses on CVD and its risks factors such as hypertension and poor

¹ Samb B, Desai N, Nishtar S, Mendis S, Bekedam H, Wright A et al. (2010). Prevention and management of chronic disease: a litmus test for health-systems strengthening in low-income and middle-income countries. *Lancet*, 376:1785–97. doi:10.1016/S0140-6736(10)61353-0.

² Atun R, Jaffar S, Nishtar S, Knaul FM, Barreto ML, Nyirenda M et al. (2013). Improving responsiveness of health systems to non-communicable diseases. *Lancet*, 381:690–7. doi:10.1016/S0140-6736(13)60063-X.

³ WHO Regional Office for Europe (2013). Better noncommunicable disease outcomes: challenges and opportunities for health systems. Country assessment guide. Copenhagen: WHO Regional Office for Europe.

⁴ Roberts MJ, Stevenson MA (in press). Better noncommunicable disease outcomes: fifteen health system challenges and opportunities. Copenhagen: WHO Regional Office for Europe.

⁵ WHO (2011). NCD country profile: 2011 Tajikistan. Geneva: World Health Organization (<http://www.euro.who.int/en/countries/tajikistan/publications3/ncd-country-profile-2011-tajikistan>, accessed 11 September 2014).

nutrition, considering that an estimated 40% of the population is overweight and 9% is obese. Other risk factors such as diabetes and tobacco use are also analysed. The importance of other NCDs is not neglected, and some parts of the analysis and recommendations could be applicable to all NCDs.

Following a desk review of existing international and local literature including unpublished reports, country missions took place from April to May 2013, and a validation mission to discuss preliminary findings was held in November 2013. In all missions, key informants included representatives of the Ministry of Health and Social Protection of Population and health care providers from the capital city, Dushanbe, and its rayons.

During the first mission in April 2013, three WHO consultants (Barton Smith, Tatyana Elmanova and Konstantin Krasovsky) conducted interviews to review the existing models of service delivery and public health. Its main findings informed sections 2 and 3 on the provision of population interventions and individual services, model of care and human resources for health. A second mission in June 2013 included an expert from the Regional Office (Nina Sautenokova) and a WHO consultant (Ilza Aizsilniece). They assessed pharmaceuticals and access to medicines, and the main findings are in challenge 11.

From June to July 2013, semi-structured interviews with family practitioners and patients were conducted in the Sught (northern) and Khatlon (southern) oblasts. In total, 54 family practitioners and 108 patients were interviewed and the main findings informed section 3. Interviews were conducted by the Health Policy Analysis Unit under the Ministry of Health and Social Protection of Population.

This report refers to the missions and follow-up work as the HSS NCD Assessment Mission.

Validation of the preliminary findings took place in November 2013. A roundtable was held with officials from the health ministry, representatives of key national governmental institutions and development partners. Their feedback was incorporated into this report.

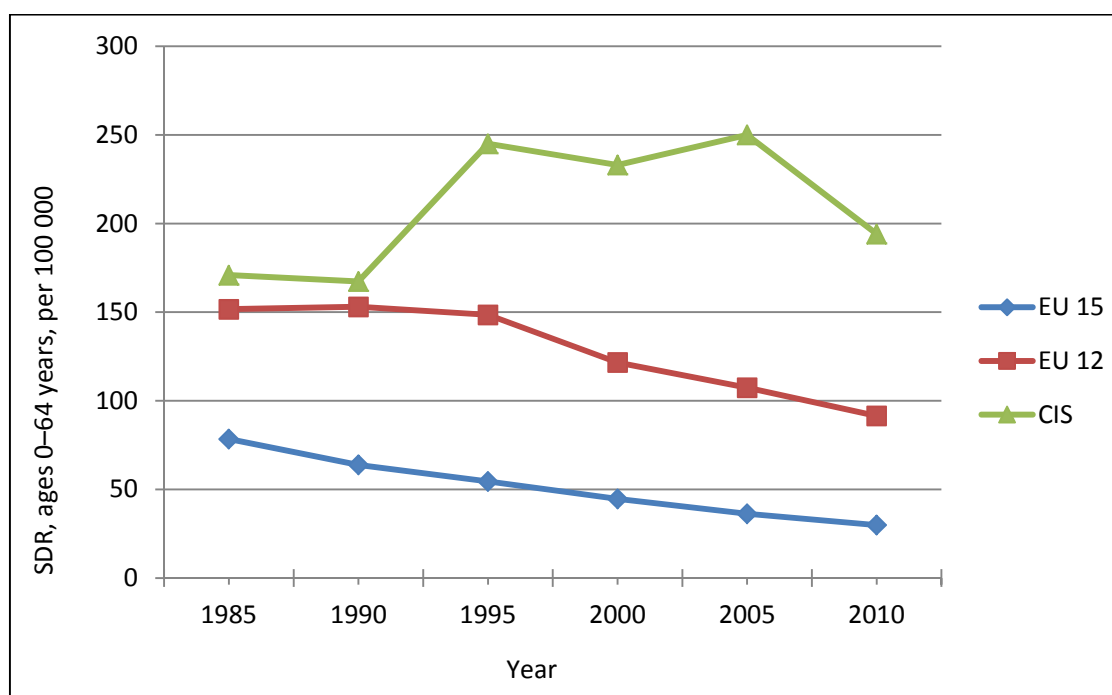
The report consists of five sections. Section 1 provides a snapshot of the epidemiological situation related to NCD outcomes in Tajikistan focusing on CVD. Section 2 covers core CVD services, focusing on population-based interventions and individual services, and section 3 describes 15 health system features to help deliver core services. Innovations and good practices to improve CVD outcomes already in place in Tajikistan and which could be applied in other countries are in section 4. Finally, policy recommendations for Tajikistan are in section 5.

1. Noncommunicable disease (NCD) outcomes

This section presents evidence on NCD health outcomes with a focus on mortality rates in the entire population and among working-age adults. The analysis illustrates that mortality rates for NCDs are declining in the WHO European Region, including in the Commonwealth of Independent States (CIS) and some countries in the European Union (EU) (EU12¹ and EU15²), but they are stagnating or even increasing slightly in Tajikistan. As a result, Tajikistan is not on track to meet the 25 by 25 target³ to reduce mortality from NCDs unless major scale-ups of core services can be implemented through a comprehensive health system strengthening approach.

According to international studies, cardiovascular diseases (CVD) including ischemic heart diseases, cerebrovascular diseases, etc. have become the leading cause of mortality and morbidity in many low- and middle-income countries (WHO, 1999). However, trends in the Region including in CIS countries have been positive with a marked decline of cardiovascular mortality among working-age adults (Fig. 1).

Fig. 1. Standardized death rates (SDR), diseases of the circulatory system, ages 0–64 years, 1985–2010



Source: WHO European Health for All database (WHO Regional Office for Europe, 2014).

In many countries, NCDs are the main cause of death; in Tajikistan they account for 59% of all deaths and, of these, CVD account for 39% (WHO, 2011; Smith & Nguyen, 2013). However, unlike the trends in Fig. 1 for the EU countries, trends in Tajikistan show stagnation or even an increase in mortality due to NCDs. According to the Republican Centre for Medical Statistics and Information (RCMSI), from 1999 to 2011, the circulatory disease mortality rate increased from 184 to 213 per 100 000 inhabitants, which constitutes about 50% of total mortality (Fig. 2). Neoplasm-related mortality has also increased while

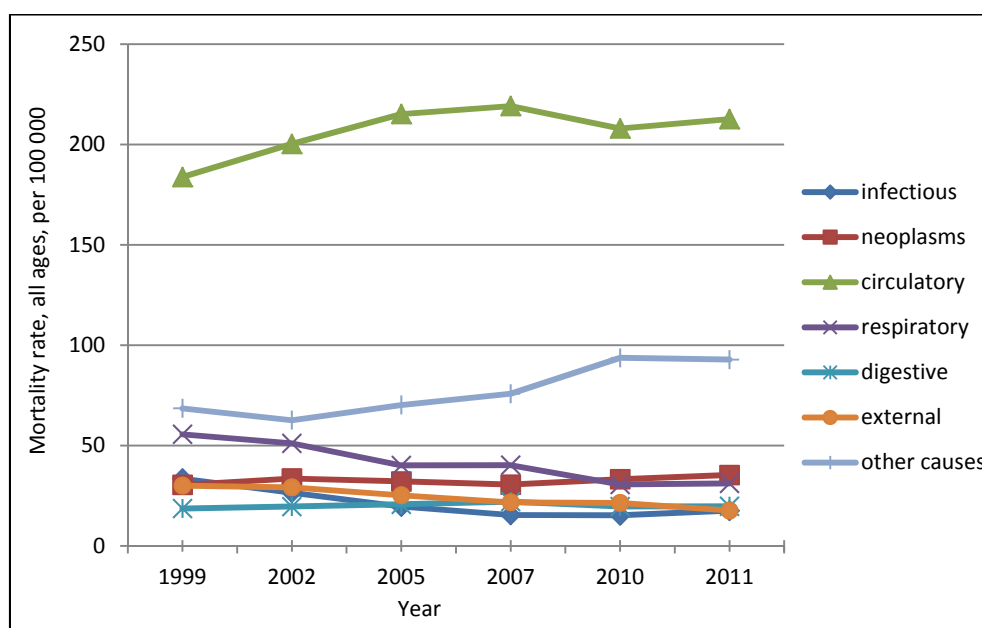
¹ The EU12 countries are Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovenia and Slovakia.

² The EU15 countries are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

³ In resolution WHA 65.8, the World Health Assembly endorsed the global target of a 25% reduction in premature mortality from NCDs by 2025.

infectious diseases, respiratory diseases and mortality from external causes have decreased. CVD mortality in Tajikistan decreased by 4.5% from 215.2 to 206.0 per 100 000 population between 2005 and 2010. Meanwhile, the incidence of coronary heart disease per 100 000 population increased from 127.2 in 2007 to 165.5 in 2010, i.e. by 6.6% (RCMSI, 2013; State Statistical Agency under the President of the Republic of Tajikistan, 2013). Data on CVD may be under or over reported; if the cause of death is undefined, it is often ascribed to CVD mortality (see challenge 13).

Fig. 2. Mortality rate by causes, all ages, 1999–2011



Sources: RCMSI, 2013; State Statistical Agency under the President of the Republic of Tajikistan, 2013.

In Tajikistan since 2005, people of working age are defined as 15–62-years-old for men and 15–57-years-old for women. Between 2005 and 2011, the mortality rate among people of working age was rather stable, and the same trends for major causes of death as for the general population could be observed (Fig. 3). Remarkably, during this period, the circulatory disease mortality rate per 100 000 population increased from 63 to 67, constituting between 46.8% and 48.82% of total mortality (RCMSI, 2013).

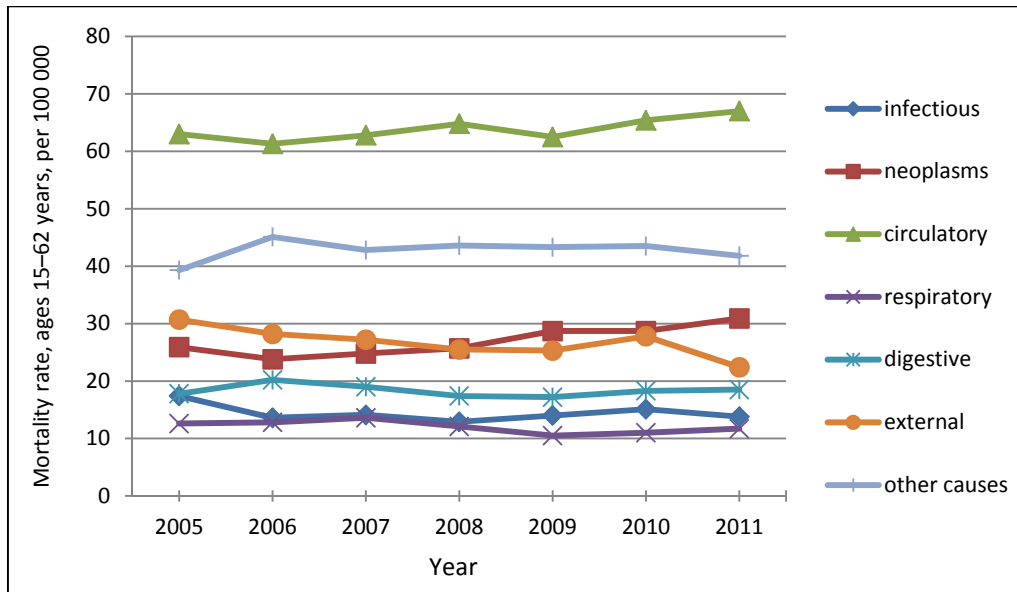
However, based on data from national medical statistics, among the population older than working age, the circulatory disease mortality rate constitutes about 70% of total deaths in Tajikistan (RCMSI, 2013). This is probably because cause of death is routinely documented as due to circulatory disease in death certificates of older people who died without apparent cause and where no autopsies were performed.

Between 2005 and 2011, mortality rates were 20% higher for men than women. The difference was the largest (three-fold) for external causes, and the lowest for circulatory disease mortality, which was still 10% higher for men (Table 1). The main NCD risk factors that contribute to higher mortality among men are unhealthy lifestyles including smoking, a diet high in fat and extremely low in antioxidants, and physical inactivity (section 2). Additionally, poor detection and treatment of hypertension might also cause the higher mortality rate among men. There are no official available data on health service utilization disaggregated by gender. However, international evidence shows that men visit health facilities less often than women (Falkingham, Akkazieva & Baschieri, 2010).

Officially registered mortality rates were 24% higher among urban than rural populations between 2005 and 2011. Only respiratory mortality was much higher among the rural population, and infectious diseases mortality was almost equal in both groups. Circulatory and neoplasms mortality was about 30% higher in urban than in rural populations (RCMSI, 2013). The higher rate might be explained by the fact that a large proportion of the population travels to urban settings to receive better health services from

urban health facilities; deaths are registered in the health facility in which they occur, which might make the mortality rate higher in urban than in rural settings.

Fig. 3. Mortality rate among population aged 15–62 years, 2005–2011



Sources: RCMSI, 2013; State Statistical Agency under the President of the Republic of Tajikistan, 2013.

Regional comparison of the mortality rate from NCD conditions demonstrates that it is higher in the central Asia region than in industrialized countries. In particular, the CVD mortality rate is about five times higher in the central Asia region than in western Europe (McKee & Chenet, 2002; Figueras et al., 2004). This might be explained by lifestyle factors, such as smoking and a diet high in fat and extremely low in antioxidants, as well as the poor detection and treatment of hypertension.

Every year, approximately 3000 new cancer cases are registered, and between 2005 and 2010, the rate of newly diagnosed cancers increased from 27.8 to 37.8 per 100 000 population. The increase of cancer incidence among females during the last decade should be acknowledged. In 2010, cancer incidence reached 37.5 per 100 000 inhabitants, with a higher prevalence among women at 43.1 per 100 000 women; malignant breast cancer and cervical cancer are the leading types of cancers. In 2012, overall cancer incidence increased to 57.4 per 100 000 population.

Every year, more than 200 new cases of breast cancer and 170 new cases of cervical cancer are registered, and 60% of these cases are at stage II or stage III. The collapse of the previously established mechanisms for cancer control and prevention resulted in patients delaying seeking medical attention (RCMSI, 2013). Currently, about 60–70% of newly diagnosed cancers are diagnosed in advanced stages, which significantly reduce the chances of effective treatment. The majority of newly diagnosed cancer cases are observed in rural areas (70% of all cases in 2012).

The incidence rate of asthma has also increased dramatically between 2000 and 2009, from 138 cases for men and 140 cases for women to 3375 cases for men and 3391 cases for women, with no identified statistically significant differences by sex. The same trends are observed for bronchiectasis and chronic obstructive pulmonary diseases; in 2012, the total incidence was 85.5 per 100 000 population (total cases: 6753, males: 3404, females: 3349). The number of newly registered cases in 2012 reached 2007 (males: 1019, females: 988) (RCMSI, 2013).

Other NCD-related morbidity includes diabetes, iodine deficiency disorders, cancers and respiratory diseases including asthma and chronic bronchitis. Cancer incidence in 2010 reached 37.5 per 100 000 population with a higher prevalence (43.1) among women (RCMSI, 2013); malignant breast cancer and

cervical cancer are the leading types of cancer. Recent cancer trends are negative: patients are diagnosed at a younger age, more aggressive forms of cancer are detected and more severe cases are observed. People residing in rural areas make up the majority of newly diagnosed cancer cases (65.4%).

Overall, the available data show that morbidity from circulatory system diseases increased between 2000 and 2011 (RCMSI, 2013). A high prevalence of hypertension in men ($21.2 \pm 0.4\%$) and in women ($24.8 \pm 0.6\%$) was found during this period. In general, arterial hypertension in the population was detected in more than 22% of the adult population (RCMSI, 2013).

Table 1. Mortality rate by gender and causes, 2005–2011

Cause of death (diseases)	Mortality rate per 100 000 population													
	2005		2006		2007		2008		2009		2010		2011	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Circulatory	223.4	206.9	210.5	194.6	226.1	212.3	226.3	202.8	219.1	192.7	219.4	196.8	222.6	202.6
Other causes	77.3	61.0	89.8	72.9	83.4	68.2	95.6	71.8	101.9	81.7	105.6	81.7	101.8	83.6
Neoplasms	35.0	29.2	33.3	28.5	32.7	28.2	33.5	30.7	34.6	32.8	34.9	31.6	37.1	33.4
Respiratory	40.4	39.7	42.1	33.7	42.6	37.8	38.0	32.0	30.5	27.4	32.3	29.0	34.4	27.7
External	37.2	13.2	34.4	11.3	32.7	10.6	31.7	9.0	29.7	10.2	32.9	9.8	26.1	8.9
Digestive	24.3	17.1	30.5	25.1	24.6	19.4	24.4	17.8	21.7	17.0	22.5	16.6	22.7	16.6
Infectious	23.0	16.1	19.1	13.9	18.0	12.8	16.7	12.2	17.6	12.1	18.8	11.6	19.5	15.6
Total	460.6	383.3	459.6	380.1	460.1	389.3	466.3	376.3	455.1	373.8	466.4	377.2	464.0	388.4

Sources: RCMSI, 2013; State Statistical Agency under the President of the Republic of Tajikistan, 2013.

This epidemiological situation shows that CVD are a leading cause of death in Tajikistan at 39% versus 7% for cancers, 3% for respiratory diseases, 2% for diabetes and 8% for other NCDs (WHO, 2011). The burden of NCDs is growing, particularly an increase in ischemic heart disease, strokes and cirrhosis between 1990 and 2010, paralleled by a decrease in childhood diseases like lower respiratory infections and preterm birth complications. The CVD mortality rate is, overall, higher in the entire central Asia region than in the rest of the European Region. Dietary risks, high blood pressure and household air pollution are the main risk factors contributing to the burden of NCDs, particularly cardiovascular and circulatory diseases. Moreover, an estimated 40% of the total population is overweight and 9% is considered obese, calling attention, in particular, to levels of physical activity and dietary patterns (State Statistical Agency under the President of the Republic of Tajikistan, Ministry of Health & ICF International, 2013). In this context, the Tajikistan assessment to improve NCD outcomes focuses on hypertension and poor nutrition as relevant, country-specific risk factors for CVD. The conclusions of this report can also be extended to diabetes and other risk factors.

2. Coverage of core CVD interventions and services

This section provides an assessment of coverage of core interventions and services linked with improving NCD outcomes. **Core services** are defined as evidence-based, high-impact, cost-effective, affordable and feasible to implement in a variety of health systems. Core interventions and services include **population-based interventions** and **individual services**. Population-based interventions include a multipronged approach to reduce smoking, prevent harmful alcohol use, and improve diet and physical activity. *Individual services* focus on early detection of risk factors, continuous management of risk factors and diseases, and timely referral. Table 2 shows the core services identified for this study based on a country assessment guide (WHO Regional Office for Europe, 2013a).

Table 2. Core population interventions and individual services to improve NCD outcomes

Core population interventions	Core individual services
<p>Anti-smoking interventions</p> <ul style="list-style-type: none"> • Raise tobacco taxes to reduce affordability • Provide smoke-free environments • Warn of the dangers of tobacco and tobacco smoke • Ban tobacco advertising, promotion and sponsorship • Provide quit-lines and nicotine replacement therapy (NRT)^a 	<p>CVD and diabetes</p> <ul style="list-style-type: none"> • Risk stratification in primary health care (PHC) • Effective detection and management of hypertension • Effective primary prevention in high-risk groups • Effective secondary prevention after acute myocardial infarction (AMI) including acetylsalicylic acid • Rapid response and hospitalization for AMI and stroke^a
<p>Interventions to prevent harmful alcohol use</p> <ul style="list-style-type: none"> • Use pricing policies on alcohol including taxes • Restrict or ban alcohol advertising and promotion • Restrict availability of alcohol in retail sector • Enact and enforce minimum purchase age regulation^a • Implement a blood alcohol limit for driving^a 	<p>Diabetes</p> <ul style="list-style-type: none"> • Effective detection and general follow-up^a • Patient education on nutrition and physical activity and glucose management • Hypertension management among diabetes patients • Screening for and managing complications
<p>Interventions to improve diet and physical activity</p> <ul style="list-style-type: none"> • Reduce salt intake and salt content in foods • Replace <i>trans</i>-fats with unsaturated fats • Reduce free sugar intake^a • Increase consumption of fruit and vegetables^a • Reduce marketing pressure of food and non-alcoholic beverages to children^a • Implement public awareness programmes on diet and physical activity 	<ul style="list-style-type: none"> • Cancer – first line <ul style="list-style-type: none"> – Prevention of liver cancer through hepatitis B immunization – Cervical cancer screening and treatment of precancerous lesions • Cancer – second line <ul style="list-style-type: none"> – Vaccination against human papilloma virus as appropriate if cost-effective according to national policies – Early case-finding for breast cancer and timely treatment of all stages – Population-based colorectal cancer screening at age >50 linked with timely treatment – Oral cancer screening in high-risk groups linked with timely treatment

Source: adapted from the *Global Action Plan for the Prevention and Control of NCDs 2013–2020* (WHO, 2013).

^a Interventions and services added to the Global Action Plan to allow more comprehensive assessment.

The effectiveness of the implemented population-based interventions and individual services by the Government of Tajikistan, including the Ministry of Health and Social Protection of Population (the Ministry), during the last decade were assessed within the framework of the country assessment guide (WHO Regional Office for Europe, 2013a). Coverage of core services was evaluated in three ways.

- **Extensive coverage** shows evidence of extensive commitment as demonstrated by the design and implementation of strategies, programmes and interventions in line with international best practice and emerging results on health behaviour change and outcomes.
- **Moderate coverage** is strategies, programmes and interventions that reflect commitment but either the design is not up to international best practice or the implementation is incomplete. Limited health behaviour change has been recorded as a result.
- **Limited coverage** encompasses limited activities and commitment to make notable change. Initiatives remain unimplemented and no evidence of population behaviour change for key risk factors exists.

2.1 Population-based interventions

The effectiveness of Tajikistan's population-based interventions was assessed against key health behaviour indicators for tobacco control, alcohol consumption, and diet and physical activity. The indicators are part of the *Global Action Plan for the Prevention and Control of NCDs 2013–2020* (WHO, 2013). Table 3. Score card for population-based interventions summarizes the scored population-based interventions.

Table 3. Score card for population-based interventions

Policy option	Score
Range of anti-smoking interventions^a	
Raise tobacco taxes	Limited. The excise tax level is €5 per 1000 cigarettes without filter and €1 per 1000 cigarettes with filter. Total tax (excise + value-added tax (VAT)) is 20% of purchase price.
Provide smoke-free environments	Moderate. Smoke-free environments are in hospitals, schools, universities and on public transportation but not in workplaces.
Warn of the dangers of tobacco and tobacco smoke	Limited. Tajik language warning labels are required on all tobacco products; however, the size of warning labels is negligible and do not include pictures.
Ban tobacco advertising, promotion and sponsorship	Moderate. Direct and indirect advertising and promotion are banned; however, advertisements of cigarettes are still observed at points of sale.
Provide quitlines and NRT ^b	Limited. NRTs allowed but not available and cessation services are not available.
Interventions to prevent harmful alcohol use	
Raise taxes on alcohol	Limited. The excise tax is only 6% of retail price. Total tax (excise + VAT) is 23%.
Restrict or ban alcohol advertising and promotion	Extensive. Full ban on alcohol marketing; however, advertisements of alcohol products are still observed at points of sales.
Restrict availability of alcohol in retail sector	Limited. Regulatory frameworks on serving alcohol in governmental and educational institutions exist.
Enact and enforce minimum purchase age regulation	Limited. Minimum purchase age of 18 years for all alcohol products is established, but enforcement is poor.
Implement a blood alcohol limit for driving	Extensive. Blood alcohol limit for driving is zero.
Develop multisectoral policy	Limited. Strategies and concepts exist, but are largely limited to medical interventions. Bodies of intersectoral work are ineffective and the nongovernmental organizational sector is not developed.
Interventions to improve diet and physical activity	
Reduce salt intake and salt content in foods	Limited. No data on daily salt intake were available at the time of this study. Between 2014 and 2015, an assessment is planned to evaluate the actual amount of salt in bread, which should provide a basis for the development of a salt reduction policy and related interventions.

Policy option	Score
Replace <i>trans</i> -fats with unsaturated fats	Limited. No data are available to assess this indicator; it is not possible to evaluate if <i>trans</i> -fatty acids have been reduced.
Reduce free sugar intake ^b	Limited. In 2010, temporary nutrient and energy intake norms (including free sugar) for different population groups were developed and approved by the Government of Tajikistan. However, monitoring the application of the norms has not yet been performed; consequently, tracking this indicator is not possible.
Increase consumption of fruit and vegetables ^b	Moderate. Programmes in this area were implemented by national and international partners but not at national level. There is a need to roll out programmes/interventions nationwide to change the behaviour of the population.
Reduce marketing pressure of food and non-alcoholic beverages to children ^b	Limited. A national law and regulation on general marketing are in place but not all aspects of nutrition related to children are included. Implementation and monitoring of the regulations are weak.
Promote awareness about diet and physical activity	Moderate. A national programme to promote physical activity is in place. However, it does not cover all population groups and needs to be strengthened. Gender-specific implementation of physical activity programmes need to be addressed.

^a Indicates interventions from the WHO FCTC (WHO, 2003).

^b Indicates additional interventions that were not part of the Global Action Plan (WHO, 2013).

2.1.1 Tobacco

Tajikistan has made progress in tobacco control by amending its Tobacco Control Law earlier in 2013 and ratifying the WHO Framework Convention on Tobacco Control (WHO FCTC) with entry into force on 19 September 2013 (Government of the Republic of Tajikistan, 2011 & 2013a; WHO, 2003). The Action Plan on Tobacco Control became part of the national NCD action plan that was approved by the Government in 2014. Despite amendments, the Tobacco Control Law still needs to be improved in light of the WHO FCTC ratification and monitored carefully. In particular, the terminology of what constitutes tobacco products should be clarified and explained.

Overall, the cigarette smoking rate seems low, but the proportion of people using chewing tobacco (nasway) is increasing. Legislation on tobacco control is in place but is not effective or enforced properly.

The latest national survey on youth tobacco use, the Global Youth Tobacco Survey, was conducted in Tajikistan in 2004, as part of a central Asian multicountry survey (Centers for Disease Control and Prevention, 2004). The survey revealed that, in Tajikistan, only 5.9% of students used any tobacco products (boys 6.8%, girls 2.8%), which is lower than other countries (7.9%). For example, the percentage of students using any tobacco products was 7.2% in Kyrgyzstan (boys 10.8%, girls 4.8%) and 11.3% in Kazakhstan (boys 13.8%, girls 9.0%). To get more recent data, the State Statistical Agency under the President of the Republic of Tajikistan intends to include questions on tobacco use in the 2014 household survey. Furthermore, within the monitoring and evaluation (M&E) framework of the *National Health Strategy of the Republic of Tajikistan for 2010–2020* (NHS), the Ministry has included an indicator to reduce the prevalence of smoking, as lowering NCD-related mortality is one of the Government's main priorities (Ministry of Health of the Republic of Tajikistan, 2013; Government of the Republic of Tajikistan, 2010).

According to a recent rural population survey (2009–2010), smoking prevalence in the 15–59 age group was 8.7% among men and 0% among women, 12–14% in the 25–54 age group, and just 2.7% in the 15–25 age group. However, the results of this study revealed another tendency – the popularity of chewing tobacco (nasway). About 40% of rural men and 3% of rural women reported using nasway. It is more prevalent among older women (45–59 years of age) at 7–8% than younger women. Among the youngest men surveyed (15–24 years of age), only 9% reported using nasway while 60% of male respondents aged 45–54 years used it. (State Statistical Agency under the President of the Republic of Tajikistan,

2011a). A possible explanation for the high rates of nasway use could be its low cost (50 dirammes or US\$ 0.1 for 50 g) compared to one pack of cigarettes (3–6 somoni or US\$ 0.6–1.3).

A similar survey was conducted in the same age group (15–59 years) among the urban population between 1998 and 2003. This survey revealed that 30.1% of men and 2.5% of women smoke cigarettes, and 23.4% of men and 1.2% of women use nasway (State Statistical Agency under the President of the Republic of Tajikistan, 2011b).

Despite adoption of the Tobacco Control Law in 2010, enforcement is lacking. A focal point to control and monitor implementation of the Law has not been appointed by the Government. Cigarette packs are sold in all supermarkets and individual cigarettes by street vendors. Public places and restaurants do not have smoke-free areas and, in some hotels, non-smoking rooms are not available. The excise tax on cigarettes has not been revised since 2010 despite introduction of the new tax law in 2013. In 2013, the minimum excise tax per 1000 filter cigarettes was €0.85 in Tajikistan versus €2.6 in Kyrgyzstan and €20.7 in Ukraine (State Statistical Agency under the President of the Republic of Tajikistan, 2013).

2.1.2 Alcohol

Alcohol consumption seems low in Tajikistan (Smith & Nguyen; 2013). The existing legislation does not encourage controlling alcohol use.

According to the recent rural population survey, only 12.2% of men and 0.1% of women used alcohol (State Statistical Agency under the President of the Republic of Tajikistan, 2011a). The figures were 39% for men and 6.7% for women in urban populations (State Statistical Agency under the President of the Republic of Tajikistan, 2011b). Available data from the European Health for all database indicate low mortality rates on alcohol poisoning and liver cirrhosis in Tajikistan (WHO Regional Office for Europe, 2014).

Alcohol advertising and sponsorship are banned in Tajikistan yet could be observed at points of sale. The blood alcohol limit for driving is zero; nevertheless this restriction is not observed.

Prices on alcohol are quite low and may stimulate an increase in alcohol consumption. For example, in December 2011, the price of one bottle of vodka (500 ml) cost about 17 somoni in Dushanbe versus 26.55 somoni in Bishkek, Kyrgyzstan and about 49.11 somoni in Astana, Kazakhstan (State Statistical Agency under the President of the Republic of Tajikistan, 2013). Thus, it was observed that during the period 2005–2012, the consumer price index for alcoholic beverages was 130% compared to 217% for all items.

2.1.3 Diet and physical activity

Tajikistan has progressed in promoting healthy diet and physical activities. In 2011, a multisectoral working group was established to develop and implement a nutrition and physical activity strategy including an action plan for 2013–2020 based on WHO strategies (WHO, 2013). This work gained momentum after Tajikistan endorsed the Vienna Declaration on Nutrition and NCDs in the Context of Health 2020 on 5 July 2013 (WHO Regional Office for Europe, 2013b). By the end of 2013, a draft strategy was shared with relevant stakeholders and is expected to be approved by the Government in 2014. The strategy identifies priority work areas such as reducing salt, *trans*-fats and sugar intake; and promoting exclusive breastfeeding, timely and adequate complementary feeding, and healthy diet and physical activity.

Lately *healthy diet and physical activities* are high on the agenda of the Ministry due to a reported increase in the prevalence of overweight and obesity among the population, in particular, among children under five (6% of children) and in urban settlements (12% in Sught oblast) according to the Tajikistan Demographic and Health Survey (State Statistical Agency under the President of the Republic of Tajikistan, Ministry of Health & ICF International, 2013).

The traditional diet in Tajikistan is high in fat, salt and sugar and low in antioxidants based on various assessments done in Tajikistan. Household food supply is limited by restricted access to land and markets including high prices for food products (Food and Agriculture Organization of the United Nations, International Fund for Agricultural Development & World Food Programme, 2013). Furthermore, the poor quality diet results from traditional preferences for fatty foods and animal products, rather than fruits and vegetables. During the transition period in the 1990s, after independence from the former Soviet Union, healthy lifestyles deteriorated further.

The double burden of malnutrition that includes both undernutrition and overweight is also well documented in various assessments done by development partners. The levels of underweight (10%) and overweight (28%) are both high (Ministry of Health of the Republic of Tajikistan, United Nations Children's Fund, 2010). No changes in the prevalence of wasted, stunted and overweight among children under the age of five were observed during the last few years. The 2012 Demographic and Health Survey reported rates of 10% (wasted), 26% (stunted) and 6% (overweight). The prevalence of overweight among reproductive-aged women is high (28.2%); in particular, it is higher in urban (Dushanbe 42.2%) than in rural areas (Gorno-Badakhshan Autonomous Oblast 18.1%) (State Statistical Agency under the President of the Republic of Tajikistan, Ministry of Health & ICF International, 2013).

Physical activities are not popular in general among the Tajik population. One reason is the limited number of sport/recreation centres that are mainly concentrated in urban areas, though few make use of them. Furthermore, prices for sport/recreation centres are high and not affordable for the general population, so they are considered luxury activities. Other types of physical activity have not been promoted, for example, cycling. The roads are not conducive to cycling due to a lack of space for safe bicycle lanes, and women traditionally do not cycle.

2.2 Individual services

In Tajikistan, the provision of individual core services to manage CVD focuses firstly on disease management and secondly on prevention. They are provided mainly to patients at high risk of heart and blood vessel disease (e.g. coronary heart disease, cerebrovascular disease, etc.). However, the provision of core individual services at primary care is limited due to several health systems factors described in section 3 and, therefore, Tajikistan's overall score is moderate.

During the health system strengthening (HSS) NCD Assessment Mission,⁴ a low number of patients who were officially registered as having hypertension was observed. Field visits revealed that the typical family physician, with 1200 assigned patients over the age of 15 years, has only 8–9 patients registered with hypertension (0.94%). This is in line with national health statistics that report a prevalence rate of 1.6% (range 1.1–2.6%) among adults over the age of 20 years. An earlier survey estimated that 22% of adults in Tajikistan suffer from hypertension. This suggests that less than 10% of hypertensive patients are identified and recorded (WHO Regional Office for Europe; 2005).

The major factor limiting quality of care is the delay in seeking timely medical care by patients. Patients tend to seek care when diseases have progressed, and their treatment and cure are more difficult. Those who can afford to pay for standard secondary health care services directly at hospitals often do so.

Ambulance services are available 24/7 (24 hours a day, 7 days a week) at central rayon hospitals but only a few patients request ambulance transport. In the rayon selected for a field visit, two ambulances are available for a population of 430 000. Ambulances are often not equipped with electrocardiographs, and pre-hospital treatment with thrombolytic therapy is not practiced in Tajikistan. Electrocardiograms

⁴ The HSS NCD Assessment Mission refers to the meetings, interviews and missions conducted during this assessment.

and chest radiographs are typically performed around the clock in hospitals, but laboratory studies are limited to weekdays. Cardiac monitors are outdated and in limited supply.

Table 4 summarizes the delivery of first- and second-line CVD services, respectively.

Table 4. Score card for individual CVD services

Policy option	Score
Risk-stratification in PHC	Limited. A risk group was routinely assigned to patients with hypertension. Some, but not all, risk factors were documented. Smoking status, family history and body mass index (BMI) were usually absent. No use of a systematic method to calculate 10-year CVD risk was observed. No clear links between stated CVD risk and patient management decisions were observed.
Effective detection and management of hypertension	Limited. Detection and registration were extremely low. Antihypertensive prescription was generally consistent with clinical guidelines. Low levels of continuous use of antihypertensive medicines and no efforts to address patient adherence were observed.
Effective primary prevention in high-risk groups	Limited. Prescribers were not aware of indications for primary prophylaxis. High-risk patients were not prescribed statins. Aspirin was prescribed indiscriminately to all hypertensive patients.
Effective secondary prevention after AMI including acetylsalicylic acid	Extensive. Effective secondary prevention was routinely administered.
Rapid response and secondary care after AMI and stroke ^a	Limited. For AMI, limited availability/use of ambulance services was observed. Some essential services were administered at central rayon hospital level (aspirin, beta-blockers, angiotensin-converting enzyme inhibitors, heparin) but access to thrombolytic therapy was limited. For stroke, outdated management approaches were observed.

^a Indicates additional interventions that were not part of the Global Action Plan (WHO, 2013).

Hypertensive patients are routinely assigned a risk category, and PHC providers interviewed during the HSS NCD Assessment Mission have a good understanding of the risk factors (hypertension level, weight, diet) associated with CVD. Providers also recognize that close follow-up and regular monitoring of health conditions including hypertension levels are needed for patients at higher risk. However, hypertension detection is still low. PHC providers could not articulate clearly the method of estimating CVD and how they link CVD risk factors with pharmaceutical management decisions to control development of CVD. A review of dispensary charts⁵ of hypertensive patients revealed that blood pressure is usually measured and recorded at each visit, and pertinent tests are routinely obtained and documented, including annual ECGs, blood glucose and total cholesterol. Other risk factors, including BMI, family history of premature CVD and smoking status, are documented less often or incompletely.

PHC providers and cardiologists tend to prescribe aspirin to all hypertensive patients regardless of their assigned CVD risk. Statins are not typically prescribed as primary prevention to hypertensive patients with very high CVD risk. These patients are typically prescribed hypercholesterolemia regardless of the

⁵ The dispensary system is used for registering and managing patients with chronic illnesses according to a standard protocol, which delineates the frequency and content of visits.

total CVD risk. Both PHC providers and cardiologists note that many patients do not regularly take their prescribed antihypertensive medicines.

In regard to second-line services, once patients with acute coronary syndrome reach the hospital, they typically receive standard care with aspirin, heparin and beta-blockers. Thrombolytic therapy is limited to seven regional cardiology centres and not nationally available in hospitals due to cost (US\$ 75–200), nor is it administered at central rayon hospitals. Additionally, aspirin as secondary prevention is routinely prescribed to patients who have suffered heart attacks, as are beta-blockers. There is awareness among cardiologists of the need to prescribe statins long-term for secondary prevention. However, Tajik providers estimate that well under one-third of patients will continue to take statins long-term because of their high cost.

There are high-quality clinical practice guidelines on hypertension that were developed in 2008 and prescription of antihypertensive medication by PHC providers is in line with international standards (Ministry of Health and Social Protection of Population of the Republic of Tajikistan, 2013; WHO, 2012). However, there are no evidence-based national guidelines for the management of stroke patients. As with patients suffering from acute heart disease, patients with acute stroke symptoms tend to be admitted to hospitals, emergency transportation is limited, and typical care includes many outdated practices such as early lowering of elevated blood pressure, indiscriminate use of medications to lower intracranial pressure, use of non-evidence-based neuroprotectors, late mobilization and lack of venous thrombosis prophylaxis.

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

Since 2004, Tajikistan has implemented a number of complex reforms in the health sector to tackle limited access to health care that led to deteriorating health indicators and to increasing health inequities of its population. The reforms included changes in the organization and provision of health care services by moving towards a family medicine model, and implementing related health financing arrangements to decrease out-of-pocket (OOP) payments and financial impoverishment due to health care spending (Government of the Republic of Tajikistan, 2005a; 2005b; 2010).

In 2010, the Ministry developed and adopted a comprehensive NHS (Government of the Republic of Tajikistan, 2010). Despite the recent, well-articulated and intense efforts to develop specific strategies, policies, clinical practice guidelines/protocols (CPG) and training for health staff, among others, and to increase the coverage of core population and individual services to improve CVD outcomes, health systems barriers remain. In particular, the need to increase the coverage of core individual services and improve tobacco control, to increase the overall state funds allocated including the way that providers are financed, and to strengthen the coordination and quality of PHC-led health services and providers were all identified.

This section describes 15 important health system features (Fig. 4) that provide opportunities and challenges to the delivery of core population and individual services that were presented in section 2.

All 15 health system features were reviewed by the HSS NCD Assessment Mission, and their impact on each of the core interventions and services was discussed and agreed (Annexes 3 and 4). Each feature was rated on a scale from 1 to 4.

- 1: A **minor challenge** does not prevent delivery of core interventions and services or has been fully addressed.
- 2: A **moderate challenge** has a moderate impact on the delivery of core interventions and services. The country has already found ways to address it or has solid plans to do so.

- 3: A **major challenge** has a large negative impact on the delivery of core interventions and services. The country has been struggling to find the right ways to address it, or the chosen paths have not worked.
- 4: A **major persistent challenge** is systematic and persistently on the health system reform agenda and the country has not found a sustainable implementable solution or has failed numerous times to implement it.

Fig. 4. Fifteen health system challenges and opportunities to improve NCD outcomes



Source: WHO Regional Office for Europe, 2013a.

Challenge 1. Political commitment to NCDs

A good legislative base is in place in Tajikistan, reflecting a high political commitment to better NCD prevention and control. The *Strategy for improving the welfare of the population of the Republic of Tajikistan for 2013–2015*, approved by the Government in 2013, comprises four priorities for health, including reducing the NCD burden and improving the quality, access and effectiveness of health care services (Government of the Republic of Tajikistan, 2013d). While this sets the basis for tackling NCD, it is necessary for the Ministry to reach out to other sectors and embark on intersectoral actions in this area.

NCDs were already a priority in the NHS approved in 2010. In particular, the NHS prioritizes interventions for reducing CVD (hypertension, ischemic heart disease); respiratory diseases (chronic obstructive pulmonary disease and asthma) and endocrine diseases (diabetes mellitus).

Disease-oriented strategies and programmes complement the NHS and serve to advocate for adequate funding. Examples include strategies to prevent and control ischemic heart disease, AMI, diabetes mellitus, asthma, cancer and cases of injuries, among others. Within the framework of the *Ischemic Heart Disease Programme 2006–2015*, new technologies to diagnosis CVD such as coronarography and radioisotopic scanning of the heart and other organs, magnetic resonance and tomography were introduced (Ministry of Health of the Republic of Tajikistan, 2005a). Additionally, other modern CVD treatment technologies are being introduced including implantation of stem cells into the damaged

myocardium, aortocoronary bypass without cardioplegia, and stent angioplasty of coronary and other arteries. The *Programme for control of diabetes 2006–2015* allowed for an ad hoc law on health care and social protection of patients with diabetes mellitus to be enacted (Ministry of Health of the Republic of Tajikistan, 2005b & 2012). This legislation established a State register to ensure the provision of social support and pharmaceuticals, such as free insulin to qualified beneficiaries. Unfortunately not all regulations have been transferred into tangible actions due to a lack of funds (see challenge 2).

For the first time, the Ministry developed the *National Strategy for Prevention and Control of NCD and Injuries in the Republic of Tajikistan 2013–2023* (Government of the Republic of Tajikistan, 2013b). This comprehensive strategy aims to increase the funding and the priority of NCD prevention and control, to strengthen interagency cooperation and to identify how to establish an effective infrastructure. Within the NCD Strategy, a midterm implementation plan for 2013–2016 was developed during 2013 and approved in 2014, while a 2017–2023 implementation plan is expected to be developed in 2015 based on the progress made and lessons learnt from the first phase (Ministry of Health and Social Protection of Population of the Republic of Tajikistan, 2014). The NCD Strategy does not have earmarked funds, which may prevent its effective implementation and therefore impact outcomes.

The NCD Strategy took into account the main priorities identified within the national and vertical programmes for each NCD (AMI, heart failure). In order to avoid duplication of actions to control and treat NCDs, it has been recommended to discontinue the practice of developing separate national and vertical programmes for each disease (Ministry of Health of the Republic of Tajikistan, 2012). In fact, evidence shows that a comprehensive approach is the most powerful and cost-effective way to tackle any disease (Balabanova et al., 2013).

The Tobacco Control Law was approved in Tajikistan in 2011, followed by the ratification of the WHO FCTC in 2013. However, room for improvement remains and full enforcement needs to be pursued. Another important legislative basis is constituted by a draft strategy on nutrition and food safety developed in 2013, which is expected to be approved in 2014.

From this legislative base, it can be concluded that all developed strategies for tackling NCDs are relatively new and, therefore, their implementation is limited, especially considering the fact that the health budget does not include earmarked funds for tackling NCDs.

Challenge 2. Explicit priority-setting approaches

Tajikistan introduced a midterm expenditure framework (MTEF) in the health sector in 2008 to increase equity and efficiency in the allocation of public funds to the health system. However, the health budget formation is based on inputs rather than on health needs and priorities. It does not take into account the distribution of NCD risk factors and outcomes across socioeconomic groups. In recent years, the Ministry of Health and Social Protection of Population and the Ministry of Finance discussed new budget formation mechanisms such as capitation and case-based payment.

The MTEF covers a period of three years and is revised yearly to identify gaps between available and needed funds for the health sector, and to respond to changes in prioritization. The MTEF is usually developed prior to compiling the annual State budget that is considered a basis for allocating funds within the health sector. Currently, the MTEF prioritizes three areas of work: timely diagnostics and treatment of tuberculosis (TB) and HIV/AIDS, improvements in the supply and logistics of health facilities, and the introduction of capitation as a new provider payment mechanism at the PHC facilities level.

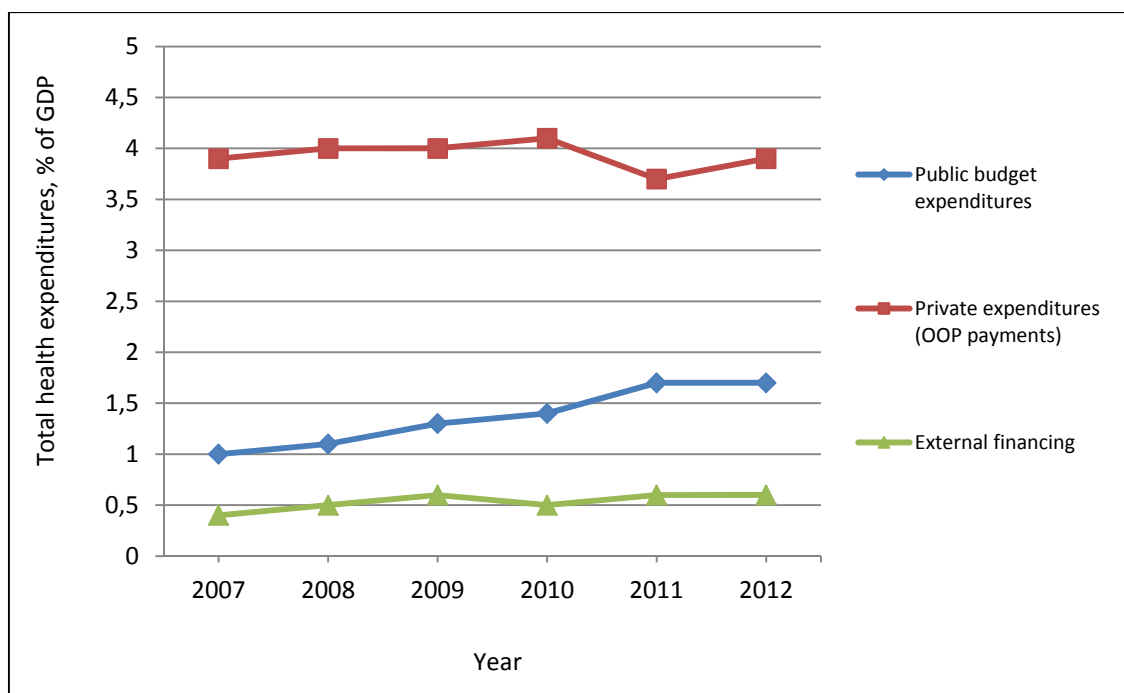
The share of public expenditures as a percentage of gross domestic product (GDP) increased from 1% to 1.7%, and private expenditures decreased by 0.2% between 2007 and 2012 (Fig. 5). However, compared to other countries in the WHO European Region, Tajikistan allocates the lowest share of State budget to health. For example in 2010, public expenditure as a share of percentage of GDP was 5.2% in the

Republic of Moldova, 4.3% in Belarus and 3.8% in Kyrgyzstan (Health Policy Analysis Unit under the Ministry of Health and Social Protection of Population (HPAU), 2013a).

Thanks to the adoption in June 2008 of a joint decree – by the Ministry of Health and Social Protection of Population and the Ministry of Finance – on the management and financing structure of primary care facilities (HPAU, 2013c) establishing that at least 40% of the city/district budget needs to be allocated to PHC, a shift of public health expenditure between hospitals and PHC was observed. Between 2007 and 2011, hospitals' expenditures decreased by 8.9% (from 64.7% to 55.8%) while PHC expenditure increased by 9.5% (from 23.2% to 32.7%) (HPAU, 2013a; 2013e). In spite of this, PHC expenditure does not yet reach the 40% target (except in some districts). This is probably related to the overall underfinancing of the health system and the ineffective budget allocation.

A basic benefit programme (BBP) to guarantee equal access to health care services and to avoid unofficial payments has been piloted in Tajikistan since 2004 and has been rolled out to 14 rayons. Pensioners over 80 years old, veterans and disabled people from the Second World War, disabled children under the age of 18 years and children under one year of age are among those who benefit from BBP based on their social status. Currently people diagnosed with diabetes benefit from the BBP: people diagnosed with other NCDs are not eligible. Based on the conditions of the diseases, people could apply for benefits from the BBP but “this procedure is quite complicated and not transparent” as was mentioned by almost 90% of respondents in Sught and Khatlon oblasts during the HSS NCD Assessment Mission. The BBP has been revised three times in response to the survey that evaluated trends in patients' financial burdens.

Fig. 5. Total health expenditures as % of GDP, 2007–2012



Source: reproduced by permission from the Ministry of Health and Social Protection of Population, 2014.

In this context, the Ministry developed an exemption-from-payment policy for vulnerable groups and a formal co-payment mechanism for other population groups (Decree 600) that applies to laboratory, diagnostics, dental and high-technology services (e.g. kidney transplantation, dialysis etc.). The list of beneficiaries based on social status under Decree 600 includes those currently covered by the BBP and expands coverage to AMI patients and terminal cancer patients. Patients with other chronic conditions such as diabetes, TB and HIV/AIDS are exempted only from payment for diagnosis and treatment (dental and high-technology services are non-exempt categories).

Challenge 3. Interagency cooperation

A technical (sub)group on NCDs was established under the technical working group (TWG) of the NHS on service delivery in December 2012. However, no intersectoral cooperation mechanism is currently formalized in Tajikistan.

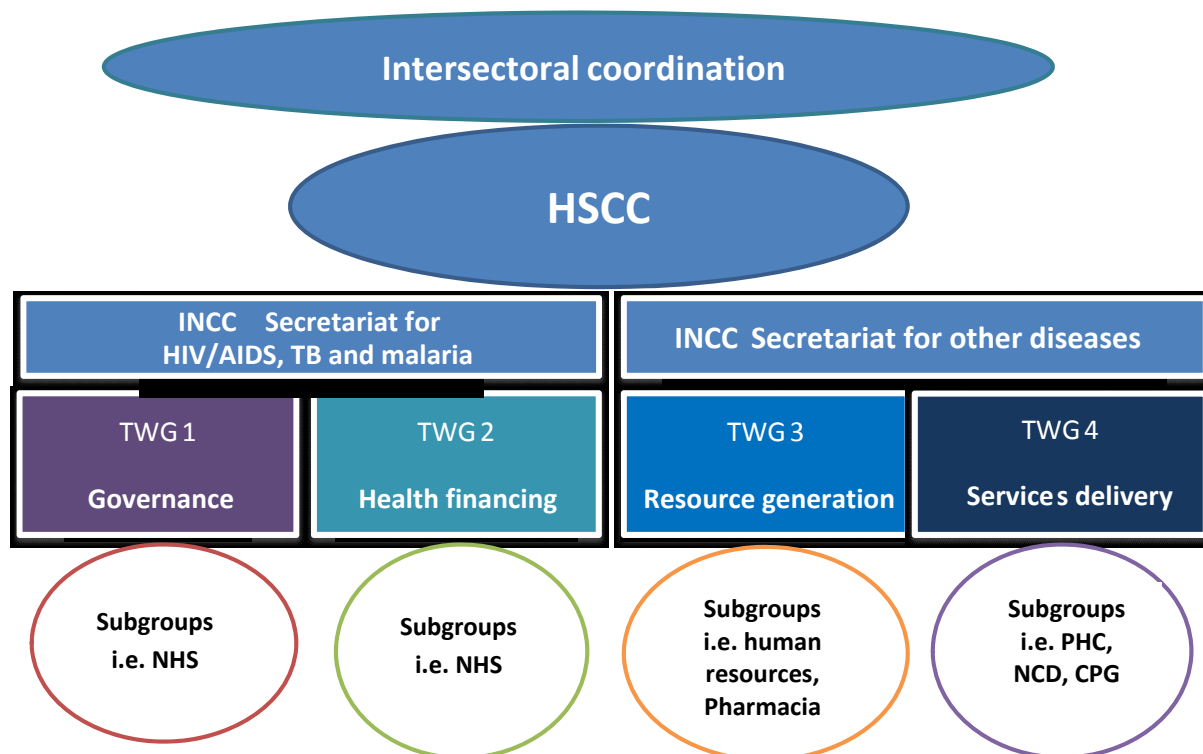
The NCDs subgroup is composed of six experts, including national and development partners, and is chaired by the Deputy Minister in charge of Services Delivery. In the NHS framework, TWGs were established in 2010 to coordinate the implementation of activities for each of the four NHS pillars: governance, health financing, resource generation and services delivery. These TWGs, chaired by the Ministry, are composed of approximately 10–20 technical experts from the Ministry, national representatives and development partners. Crosscutting issues of the NHS are discussed in joint meetings called by any of the TWGs.

Overall, outside the Ministry, little attention is paid to tackling NCDs, i.e. no civil society groups, patients, activists, intellectuals or others who would promote and lobby for the control and prevention of NCDs. The Ministry envisages establishing an NCD unit within the National Research Institute of Preventive Medicine to coordinate and monitor policy interventions to control and treat NCD conditions.

An Intersectoral National Coordination Committee (INCC) under the President's administration mobilizes and oversees the alignment of external assistance to develop different sectors of the country. Within the framework of INCC, a Health Sector Coordination (Sub) Committee (HSCC), including national and development partners, deals with health priorities and health systems (Fig. 6). During 2012, a HSCC meeting was devoted to reviewing the implementation of the NCD programme, and the recommendations of the HSCC were included in the current NCD Strategy (Government of the Republic of Tajikistan, 2013b). However, NCD has not yet been on the agenda of the INCC. This coordination mechanism offers a potential forum for advocating population-based interventions such as strengthening tobacco control, promoting healthy lifestyles in schools, and engaging other non-health sectors and industries to jointly tackle NCDs.

Tajikistan is part of the Health Council in the Integration Committee of the Eurasian Economic Community (EurAsEC) within the framework of collaboration activities among CIS countries. The Health Council was established on 15 December 2005 to collaborate in the field of prevention and control of NCDs among CIS countries. In 2013, Tajikistan held the 14th meeting of the Health Council that reviewed the implementation of the action priorities of EurAsEC 2011–2013, approved an agreement on the multifactorial prevention of NCD and injuries, and amended the EurAsEC agreement to include medicines and medical equipment and devices as part of their collective work. It is envisaged that an effective implementation of the EurAsEC agreement will, in the long term, reduce the burden of NCDs and injuries by reducing mortality and disability from NCDs, also in Tajikistan.

Fig. 6. Health sector coordination in Tajikistan



Challenge 4. People empowerment

The National Healthy Lifestyle Centre, under the Ministry, has the mandate to empower the population and patients in their own health care. The Centre organizes a series of educational, sports and cultural events in close collaboration with development partners and local authorities. This role is reinforced by the development of the National NCD Strategy and a draft concept of public health services developed during 2013 that promotes people's and patients' empowerment, particularly for NCDs. Until recently, there were no explicit policies indicating pathways, programmes or guidelines that would trigger a behavioural change, particularly on NCD risk factors and disease management. The need to intensify efforts to empower people to change behaviour towards taking responsibility for their own health still remains.

The high burden of NCDs in Tajikistan (section 1) and different surveys demonstrate the high risk of developing NCDs due to the population's perception of how to treat certain unhealthy behaviours (World Bank, 2013a; State Statistical Agency under the President of the Republic of Tajikistan; Ministry of Health & ICF International, 2013). For instance, the HSS NCD Assessment Mission revealed common perceptions, such as any medication taken long-term becomes ineffective over time and that so-called drug holidays are needed. Few patients are aware that hypertension is usually asymptomatic and, therefore, measure their blood pressure only when certain symptoms appear (headache, dizziness) and are inclined to take antihypertensive medicines only when symptoms appear.

According to 2009 statistics, people visit PHC facilities on average 4.2 times per year (RCMSI, 2013) but few of them are men. During the first HSS NCD Assessment Mission in April 2013, less than 2% of randomly selected health records in PHC facilities were for men over the age of 30 years. The same mission revealed that, among patients visiting PHC facilities, the average number of visits to physicians is 8.9 times per year, and the average number of visits to nurses is 11.4 times per year. This suggests that those who utilize the services do so frequently. However, patients tend to seek care when diseases have progressed, and their treatment and cure is more difficult. This also indicates patients' low awareness about the importance of early disease detection and treatment.

Primary care nurses make periodic home visits to all patients enrolled at the health facility as part of their duties, but do not routinely measure blood pressure if the patient is under the age of 40.

So-called hypertension schools were started in PHC centres in some oblasts. The HSS NCD Mission Assessment confirmed that schools are operational in 45–60% of PHC facilities. Patients enrolled in the schools participate in a series of lessons, typically led by a cardiologist who provides information about the importance of blood pressure control, lifestyle interventions, treatment management and adherence to treatment plans. Patients' attendance and engagement at the schools are highly variable. To date, no evaluation of the schools' impact on patients' behaviour or on blood pressure control has been made. There is discussion at national level to roll out the hypertension schools into platforms for general health education.

To date in Tajikistan, no national public education programmes for NCDs or peer-to-peer support groups have been implemented. However, national policies (e.g. NHS, draft concept of public health services, etc.) recognize the importance of patient engagement and call for involving patients in the planning, implementation and supervision of service delivery, and for the development of channels to improve public awareness on health issues (Khodjamurodov & Rechel, 2010). Numerous initiatives by development partners increase public awareness and engage people on health issues, including the formation of community groups and public education through community councils. For example, the World Bank, the Swiss Agency for Development and Cooperation, and the Aga Khan Foundation promote community-based approaches by empowering the population on public health issues in a few pilot oblasts. The first results are positive, and the Ministry recommends rolling out some of the initiatives countrywide such as establishing hypertension clubs, other community groups and councils in the villages.

Challenge 5. Effective model of service delivery

The Ministry has intensified the development and update of CPG and service delivery algorithms for CVD as a clear priority to improve the quality of care and overall CVD outcomes. Despite family practitioners having a gatekeeping role, it is common practice for CVD patients to seek care directly with outpatient narrow specialists or in hospital settings. One possible explanation is the lack of trust of both patients and practitioners in the competences of family medicine practitioners in the early detection and management of hypertension, but also in the acute management of AMI and stroke.

Family medicine was introduced in the Tajik health care system in 1998 and was confirmed as a core service delivery strategy in numerous national policy documents (Khodjamurodov & Rechel, 2010; Ministry of Health of the Republic of Tajikistan, 2012). A six-month family medicine retraining course offered in different oblasts is the primary method by which the scope of services of practicing physicians is expanded. Family medicine internships and residencies have also been established. In Tajikistan, people are assigned to a PHC provider as gate keepers but may choose another provider.

Facilities are usually open weekdays from 08:00 until 17:00 and at least one-half day on Saturdays. People are not received by appointment, and clinic visits tend to be concentrated during the mornings. According to the first HSS NCD Assessment Mission (April 2013), the vast majority (93%) of people are seen the same day of their visit. Despite the fact that 25% of people interviewed stated that they can only visit PHC providers after 18:00 on weekdays or on a Sunday; most (92%) expressed satisfaction with the operational hours of the PHC providers.

Health centres in some rayons introduced nurse check-in rooms. Patients are expected to get their ambulatory record during registration, and then go to the nurse check-in room where vital signs are measured and recorded, usually on a separate piece of paper rather than directly into the ambulatory record. In Dangara, it was observed that some centres abolished the registration and nurse check-in rooms and, consequently, family practitioners keep patients' records in their own offices, which prevents the records from being accessed by external health care providers.



Blood pressure, pulse and heart rate are routinely measured for people over 40 years old; in some centres, patients are also weighed. A person typically visits a family medicine doctor who refers the patient to a narrow specialist, if needed. In most cases, a visit to the specialist can be arranged on the same day as the family medicine doctor consultation. Communication between family medicine doctors and narrow specialists who work at the same facility is usually excellent. In fact, family medicine doctors and narrow specialists jointly document the results of the visit in the patient's health record.

The model of chronic disease management introduced during Soviet times (dispensary system) is still in place and is recommended in the clinical protocols for certain NCD conditions (CVD and diabetics). According to this model, patients with certain chronic illnesses are officially registered at the dispensary and followed up regularly. The Ministry developed and approved a special control card, a dispensary card, which is a crucial element for the clinical follow-up of patients at PHC level. It contributes to the improvement of quality health services at PHC level such as diagnostic, treatment and dispensary follow-up, and is used to evaluate the quality of care in accordance with approved standards. According to the clinical protocols, the cards are analysed monthly by the State Service for Medical Practice Supervision and by the Republican Family Medicine Centre to assess the quality of care compared to the Ministry's indicators. However, this assessment is not performed regularly.

Inpatient services for CVD conditions are provided in specialized wards in all the central rayon and oblast hospitals, and specialized tertiary facilities are in the main cities of each oblast.

Family practitioners highlighted that the recommendations provided by hospitals to patients on how to treat and control CVD conditions after being discharged differ from those administered at primary level.

The hospital doctors recommend [patients] to take so many medicines after patients [are] discharged from the hospital as per the clinical protocols they administered at the hospital level, it is not aligned with the clinical protocols that I have in my hand... I don't know perhaps they are all needed, but I usually reduce the list of drugs and make recommendations based on the clinical protocols we FDs [family doctors] follow at our level.

Despite the fact that narrow specialists (mostly paediatricians, therapists) were retrained as family practitioners by taking six months of family medicine training courses, and most have worked as a family practitioner for about 7–10 years, the former paediatricians are still not confident treating patients with CVD conditions such as heart failure, AMI, etc. "We still have a fear ...[of] making a medical error while treating such conditions despite the fact that we have a clinical protocol at hand; what if I miss something?". Whereas the therapists who have retrained as family practitioners take full responsibility, treating and following up with patients who have CVD conditions and rarely involving cardiologists in the treatment plan. During the six-month retraining courses, more time is dedicated to theoretical issues and less attention is given to practice.

There is little evidence that adult patients routinely visit health centres for screening exams. During home visits, nurses usually recommend patients to visit their family practitioner but the advice is not followed. Family practitioners explained that "people usually don't come to [the] doctor until they are in critic[al] condition".



Although all providers described the same patient flow model, an estimated 10–30% of patients bypass their family practitioner and go directly to a narrow specialist. This is mostly true for patients who need urgent consultation with the narrow specialist or if the family practitioner is not on duty at the time of the patient's visit. Overall, the gatekeeping function is weak. In addition, patients' records are kept at the dispensary (record registration room) and "this practice restricts patients [from] going directly to the narrow specialist" as mentioned by most of the family practitioners.

Some of the prescribed treatments at the dispensaries are outdated and not evidence-based. For example, the clinical guidelines and protocols for some CVD conditions are neither founded nor developed on evidence-based practice. Recently, the Ministry has approved a methodology for the development and implementation of clinical guidelines and protocols founded on the principles of evidence-based medicine (EBM), and the Ministry recently commissioned the development of over 500 clinical protocols.

In general, although family physicians are trained to detect and manage hypertension, there seems to be an over-reliance to consult with cardiologists on cases without complications. This is mostly true for the former paediatricians who retrained as family physicians. About 90% of former-paediatricians interviewed during this assessment reported being afraid of treating patients with CVD conditions or diabetes. "I am afraid to cause...harm to such patients because during [the] six-month family medicine retraining course, we received little practice, and even though it has been six years that I am practicing as [a] family physician, I still have a fear" – family physician, Khudjand city, Sught oblast.

Nurses are not used effectively. One example is that nurses weigh and measure patients but do not calculate BMI. Because nurses do not typically document patients' measurements in the main ambulatory records, considerable duplication of work occurs. Nurses do not take an active role in educating patients during clinic visits or at hypertension schools. The population's opinion about nurses is poor and their expectations about nurses' abilities to treat patients are very low.

There is a lack of clarity among providers regarding consultation and hospitalization requirements for patients with hypertension, ischemic heart disease and diabetes. Providers in various facilities verbalized different referral requirements, and even providers at the same facility disagreed. In particular, family practitioners said that when a patient brings the discharge record with treatment recommendations, it differs significantly from clinical protocol that PHC providers use. "It confuses me – how to treat further such [a] patient; either I need to recommend a patient to follow the recommendations made in the hospital or I need to follow the clinical protocol that I have..." – family practitioners from Spitamen rayon in Sught oblast.

Critical laboratory tests for CVD, including glucose, total cholesterol and urinalysis, are typically available at health centres at rayon level. ECGs are also done at this level. At rural level, access to these laboratories and ECGs is much more limited. Due to the fact that health centres can charge for laboratory services, some facilities are purchasing new laboratory equipment as a profit-generating investment.

Annual preventive hospitalizations are still practiced for patients with chronic conditions. Most patients, particularly those with CVD conditions, preferred to be hospitalized in specialized hospitals (cardiology centres) rather than in general hospitals.

In recent years, palliative care has become an important area and the Ministry is paying more attention to it. As a result, it was included as one of the priorities in the health services delivery pillar within the NHS. A national programme on palliative care is in development. Palliative care for cancer conditions

has been developed to some extent but still needs further improvement whereas care for other NCD conditions, in particular CVD or diabetes, is still weak or not yet developed.

Challenge 6. Coordination across providers

Coordination across providers in Tajikistan is appropriate. PHC providers typically see coordination of patient care as their role, rather than the role of a narrow specialist. This is viewed as one of the positive sides of the health service provision in Tajikistan. With the introduction of family medicine as a gatekeeper to health care services, the referral system has been improved slightly and reinforced further by the introduction of the BBP.

Generally, patients newly diagnosed with hypertension are routinely referred to a cardiologist for evaluation and then referred once or twice yearly, depending on the stage of hypertension and CVD risk. Subsequently, family practitioners try to manage these patients by themselves as they feel responsible for their patients. “The patient is...in...my catchment area, and I am responsible for this patient at the end of the day. The narrow specialist only recommends...treatment but follow-up should be done by me”. These sentiments were highlighted by 89% of family practitioners interviewed in Sught and Khatlon oblasts (HSS NCD Assessment Mission). However, in the case of a patient diagnosed with diabetes or asthma, the family practitioner tends to immediately refer the patient to narrow specialists (endocrinologist, pulmonologist, neurologist, and ophthalmologist) with quite frequent follow-up by narrow specialists. Medical care for these patients is still supervised by their family doctors, and patients have to come back to them with their medical records.

Communication between PHC providers and outpatient narrow specialists is typically good, as they work from the same ambulatory health record, where results of any ordered studies are maintained. However, there is no institutionalized mechanism for PHC providers to provide a general health summary or make specific consultation requests to outpatient narrow specialists or hospital providers. The standard referral forms are mostly for recording biographical rather than clinical data. Because all notes are handwritten, providers often have difficulties reading each other’s clinical notes.

Although patients should receive an official hospitalization referral from their PHC provider for non-emergencies, hospital-based specialists suggest that this system is often bypassed. In addition, patients often prefer to return to the hospital specialist rather than their PHC provider for follow-up care. In the districts (rayons) where BBP is piloting, patients tend to come first to the PHC provider to get the referral for hospitalization because then patients pay relatively small co-payments whereas patients without referrals pay a rather large amount for hospitalization.

Discharge summaries are supposed to be collected by patients prior to their first follow-up visit with their enrolled PHC provider. Hospital discharge summaries typically contain key hospital data, final diagnoses and recommendations. However, because patients are expected to return to the hospital to collect the discharge summary, it is not uncommon for patients to come for follow-up without any written summary, or for PHC providers to be unaware that a patient was supposed to have follow-up care after hospitalization. Nevertheless, “...the patients might come one week or even later after their discharge and often forget to bring the discharged summaries...” as mentioned by a few family practitioners in the oblasts studied. To avoid this situation, a rayon health centre in the Dangara district introduced a check-up and follow-up practice performed by family practitioners, i.e. the family practitioners go to the hospitals to visit and follow up with their patients. As the manager of the health centre highlighted, “This practice allows us to have...good coordination between providers and not to lose [track of] the patients after they [are] discharged; moreover, it shows...patient[s] the care of their family practitioners”.

Challenge 7. Regionalization

Until recently and before development of the NCD Strategy 2013–2023, no explicit policy or plan defining the patient pathway for the management of all NCDs conditions at all health service delivery levels existed (Government of the Republic of Tajikistan, 2013b). Therefore, an overlap in the responsibilities and roles of PHC facilities, secondary and tertiary care hospitals, and in the detection and management of risk factors and routine treatment of CVD conditions was observed.

In Tajikistan, health service delivery is provided at four levels: rural (village), district (rayon) and city, oblast, and republican. At *rural level*, PHC services are provided by rural health centres with a family practitioner and health houses with one feldsher/nurse/midwife. Inpatient services at rural level are provided by rural health hospitals or numbered hospitals, which are the same as rural health hospitals just with different names. At *district (rayon) and city level* the rayon/city health centres have family practitioners and narrow specialists who provide outpatient care services. The way district/city health centres are organized differs across districts within an oblast. Family practitioners and narrow specialists may work in different buildings or in the same building. Inpatient services at *district (rayon) level* are delivered by central/city rayon hospitals. At oblast level, oblast hospitals deliver general but more complex inpatient care. Moreover, the population can receive specialized inpatient care at oblast level, as well as in specialized hospitals such as oblast cardiology centres. At national level, republican hospitals provide more complex, tertiary-level care.

The flow of funds from the State budget consists of two levels: the republican budget and the local budget. Republican budget funds cover the expenditures of health facilities subordinated by the Ministry such as republican health care facilities (tertiary-level health care), specialized hospitals, centres and other institutions (TB, HIV, etc.), sanitation, preventive services and facilities, etc. Local budget funds cover expenses of health care facilities providing services at oblast and rayon/city levels including PHC facilities, hospitals, health protection centres and other health care facilities.

The oblast health departments within oblast administrations coordinate the service delivery of oblast-level health facilities, monitor their performance and report to national level (the Ministry). Until 2012, rayon-level health departments executed the same functions at the rayon and city levels and reported to their respective oblast health departments; however, these departments were abolished by a Government decree in late 2012 that jeopardized the management of service delivery and other health issues including accountability at rayon/city level (see challenge 12).

An emergency service exists but with too few ambulances and they are poorly equipped. Most ambulances are concentrated in large urban settings. Forty-three new ambulances have been procured for Dushanbe, but for instance, in Rudaki oblast there are only two ambulances for a population of 430 000. Ambulance visits are not tracked nationally, which makes it difficult to assess utilization. Interviews with rayon-level providers suggest that transport by private vehicle, even for serious conditions such as chest pain and stroke symptoms, is much more common.

In Dushanbe, ambulances are staffed by physicians, and patients are often treated at home if their condition permits (e.g. hypertensive urgencies). ECGs can be recorded at pre-hospital level in large urban settings, but in most other places, ambulances are not equipped with electrocardiogram machines. Currently only 5–10% of road traffic victims are transported in ambulances.

There is no clearly outlined regionalization system for cardiac care or stroke patients. Patients who live within a reasonable driving distance of Dushanbe often self-referred to national (tertiary) centres, bypassing their regional facilities. Regional facilities refer patients to regional cardiology centres if patients need operative care or can pay for high-technology services such as angiography and stenting. Thirty to forty people per month undergo angiography, and approximately ten people per month have coronary artery stents placed, with the selection largely based on the patients' ability to pay for the services.



Challenge 8. Incentive systems

Currently, hospitals are paid according to the number of beds, and health professionals receive their salaries based on flat rates and allowances linked to educational level, years of service and categories assigned by passing a proficiency test administered by the Ministry. As part of the health reforms, the Ministry aims at aligning provider payment mechanisms to services and performance (e.g. capitation for PHC and case-based payment for hospitals).

The Government initiated health financing reforms in 2005 to reimburse the costs of health facilities on the basis of new financing mechanisms (per capita at PHC level and case-based payment at hospital level), to ensure equal distribution of the limited health resources (pooling of funds at oblast level), to improve efficiency (rationalization of health facility network) and to improve access to health services by rolling out the BBP countrywide (HPAU, 2013b). Only a few of the proposed reforms were introduced at scale.

Since 2010, a partial per capita financing for the PHC level was rolled out in Tajikistan. This per capita financing mechanism applies to both medical and non-medical expenditures but not to salaries (so-called unsecured budget line items) that constitutes about 10–12% of the total health facilities budget.⁶ In 2013, the pilot of full per capita payment (applies to the whole health facilities' budget) started in Sught oblast. In the next few years, the full per capita payment at PHC level, including narrow specialists, is planned to be rolled out. The introduction of case-based payment at hospital level has been on the health agenda since 2005, but no progress has been made and, therefore, hospitals are still paid by the number of beds.

Family practitioners in Tajikistan are paid straight salaries based on the norms (basic wage rate) and independent of the size of the population they cover and treat. The basic wage rate is about 465 somoni (nearly US\$ 97). PHC providers do not receive incentives based either on the volume of preventive services provided or on the quality of delivered services.

Therefore, most family practitioners take on additional workloads, up to 1.5 times the norm, to increase their salaries. "...I cover ...[a] population [of] 1600 and my colleague covers 1400 but we get the same salary. I think it is not fair..." mentioned one family practitioner during the HSS NCD Assessment Mission. Moreover, there is low motivation for providers to engage in time-consuming preventive services such as door-to-door blood pressure measurement among their enrolled patient populations. Likewise, no additional payments are provided for time spent on patient education.

It should be highlighted that the outpatient narrow specialists receive a higher salary because in addition to the basic wage rate, they get increments based on their educational level and qualification level (professional category). Therefore, most students choose either outpatient or inpatient narrow specialization when they choose their specialization during their last year of education. This fact was revealed in a recent study (HPAU, 2013c).

In 2014, the Ministry plans to pilot *performance-based financing* with the technical support of the World Bank. The initiative will be carried out in one rayon by providing financial incentives to PHC providers. A set of about 14 indicators will be used to score results attached to financial incentives to be paid quarterly. Indicators include mainly maternal and child targets but also a few on NCD, such as hypertension detection in terms of measurement of blood pressure of visitors to a PHC facility. This mechanism will be rolled out to eight additional rayons during the next five years, and countrywide if positive health outcomes are demonstrated.

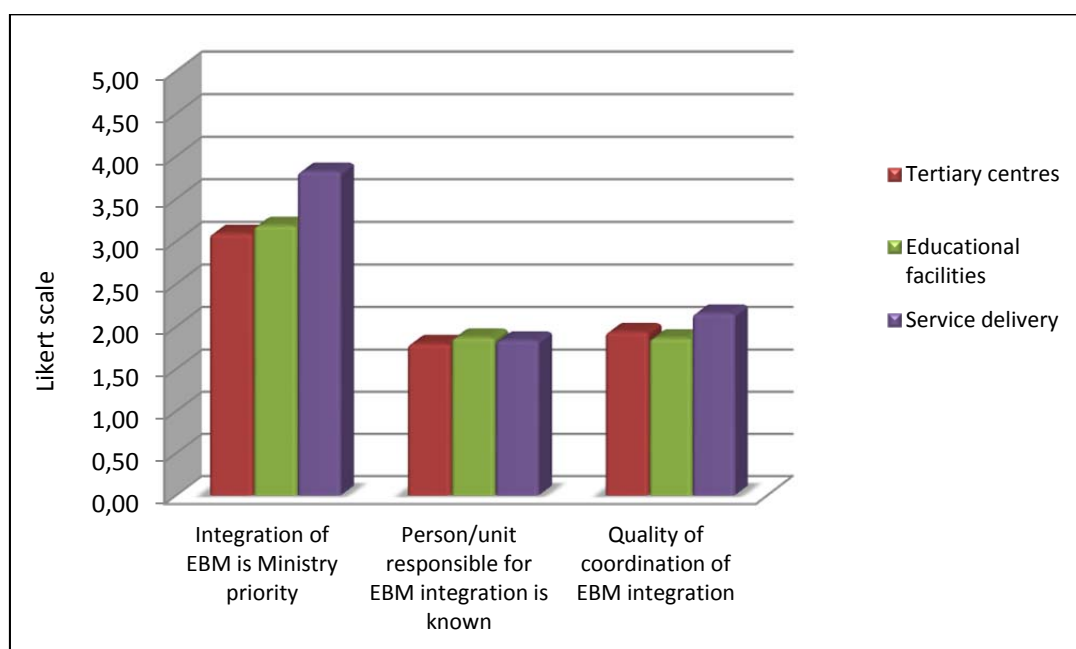
⁶ As mentioned in challenge 2, the main expenditures of health facilities are associated with staff wages, of which 88–90% are considered a secure line-item budget.

Challenge 9. Integration of evidence into practice

In 2008, the Ministry adopted a methodology for developing CPG including prioritization of CPG topics, formation of CPG development working groups, coordination of reviews and approval of guidelines. CPG development methodology is based on the internationally accepted Appraisal of Guidelines for Research and Evaluation instrument (Brouwers et al., 2010). An EBM centre was created at the Tajik State Medical University. Despite these positive developments, application of CPG by practitioners remains a challenge to scale up interventions and improve final outcomes.

In 2013, the United States Agency for International Development (USAID) Quality Health Care Project (QHCP) conducted a study, and assessed the overall coordination of EBM and CPG development at the health administration level (health systems), and the integration of EBM into both medical education programmes and service delivery level (points of care) (USAID & HPAU, 2013). Within the framework of this study, approximately 100 physicians from the Tajik State Medical University, tertiary centres and PHC facilities were surveyed (Fig. 7 and 8).

Fig. 7. Assessment of EBM integration, 2013



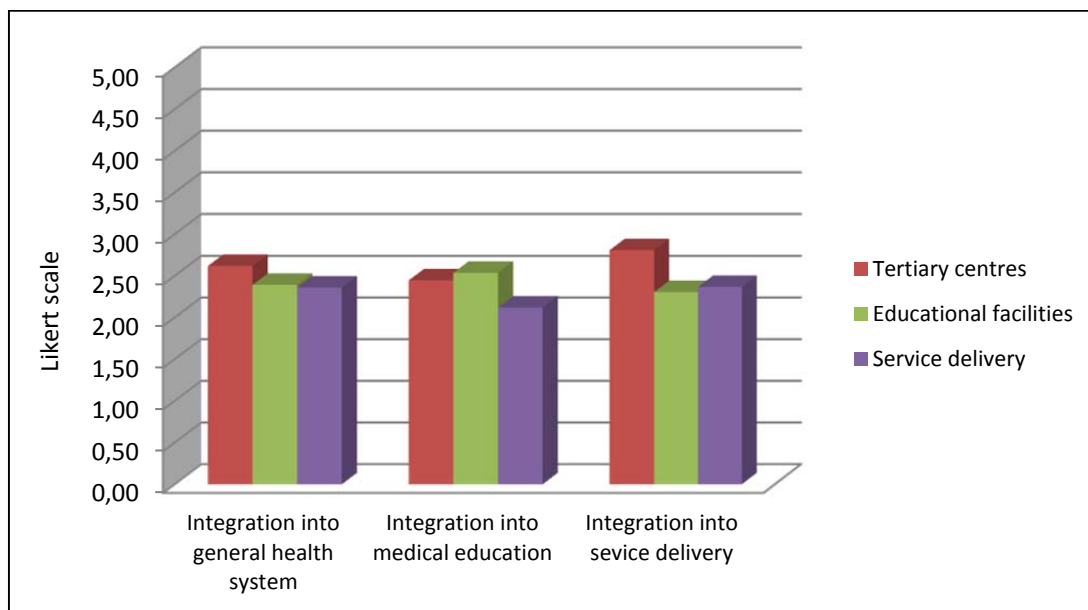
Source: reprinted by permission of USAID & HPAU, 2013.

On a 5-point Likert scale, respondents assessed the overall integration of EBM at the system level (for example, overall coordination of EBM introduction and development at the Ministry) at 2.4, the integration into the education system at 2.3 and the integration at health facility level at 2.5.

Most respondents agreed that EBM was a priority of the Ministry, but the quality of EBM coordination is not regarded as strong, and most respondents could not identify a person or unit responsible for EBM integration. Coordination of CPG development was rated at 2.3, and having a process in place for printing and distribution received the lowest score at 1.5 (Fig. 9).

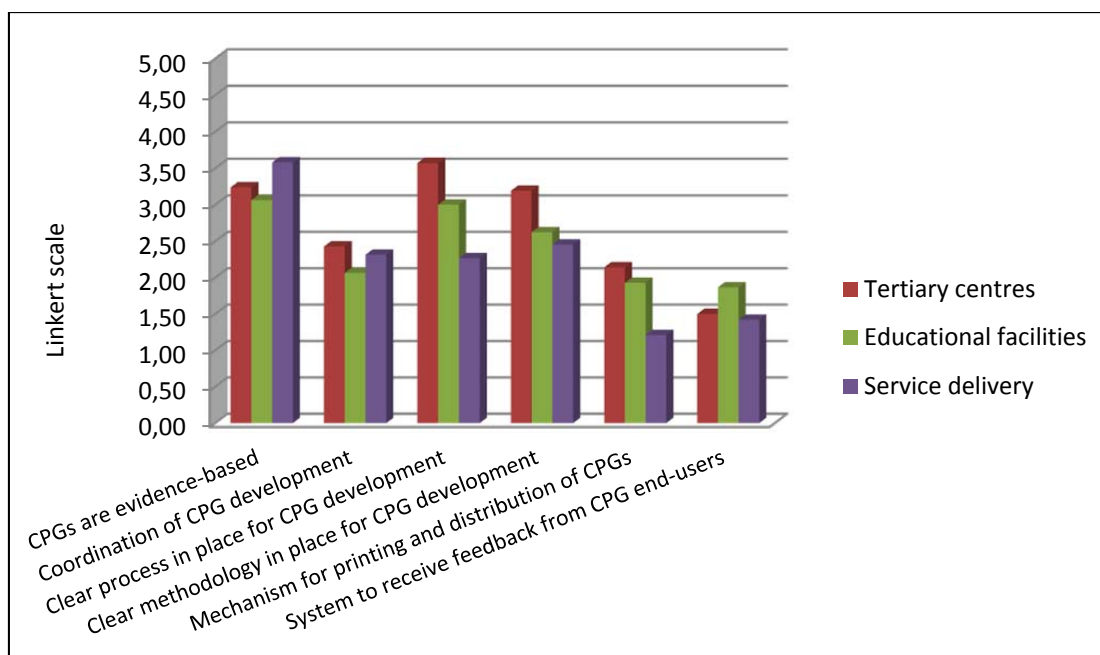
Medical school graduates are not seen as having a basic knowledge of biostatistics, research design or hierarchy of evidence. Most health care workers do not have Internet access.

Fig. 8. Assessment of EBM integration by facility type, 2013



Source: reprinted by permission of USAID & HPAU, 2013.

Fig. 9. Assessment of CPG development, 2013



Source: reprinted by permission of USAID & HPAU, 2013.

Although the Ministry commissioned the development of 500 new clinical protocols, only a small fraction have been developed in accordance with the approved methodology (Brouwers et al., 2010). For example, the clinical protocols on diabetes mellitus developed in 2010 are not available in all health facilities due to an inadequate number of printed copies. All interviewed family practitioners indicated that recommendations for secondary prevention for CVD conditions differ between the PHC and inpatient levels, which make it difficult for family practitioners to provide the same follow-up treatment at PHC level (see challenge 5).

Notable exceptions include the hypertension guideline (2008) and a recent set of protocols on respiratory diseases as part of the *Practical Approach to Lung Health* initiative (2012) (Ministry of Health of the Republic of Tajikistan 2012; Ministry of Health and Social Protection of Population of the Republic of Tajikistan, 2013). The EBM Centre, under the Tajik State Medical University, is actively involved with teaching foundational principles of EBM to medical students, but has not been empowered with a mandate to coordinate the process of CPG development.

In November 2013, the Ministry appointed an expert group to develop clinical protocols and guidelines using an EBM approach. The group consists of six experts with a rotating chair and reports to the Deputy Minister for Health Services. According to its formation decree, this group meets regularly a few times a month.

Regarding CVD services, certain compulsory screenings are not evidence based, suggesting that policies are being developed without a clear link to evidence-based guidelines or protocols. For example, patients over 40 years old should have their blood pressure, ECGs and blood glucose measured during each visit. In fact, blood pressure screening should begin at a much earlier age, and there is no evidence that glucose should be measured or ECGs recorded during each visit or even annually in patients over the age of 40 years without risk factors.

In 2013, the Ministry introduced the *Package of Essential Noncommunicable (PEN) Disease Interventions for Primary Health Care in Low-Resource Settings* recommended by WHO (WHO, 2010). Several PEN protocols were adapted and translated into Russian and Tajik: (i) prevention of heart attacks, strokes and kidney disease through integrated management of diabetes and hypertension; (ii) health education and counselling on healthy behaviours and (iii) management of asthma and chronic obstructive pulmonary diseases. The PEN protocols are expected to be rolled out countrywide by 2015. The training primarily covers family doctors, general practitioners and other doctors working at PHC level. Thus, as of September 2014, 120 primary health care providers were trained on PEN protocols and started to apply in seven pilot rayons with support from WHO through an EU-funded project. The World Bank is planning to apply PEN protocols in those rayons where performance based financing will be piloted (see challenge 8). Furthermore, the Ministry plans to institutionalize PEN into undergraduate and postgraduate curricula of medical education including the family medicine training programme. Important to note, clinical protocols at hospital level support the PEN protocols; the treatment regime described in PEN is the same as the Tajik clinical protocols at hospital level. Clinical protocols applied at hospital level include more detailed information and allows for more complex treatments.

Challenge 10. Distribution and mix of human resources

Human resources for health are high on the agenda in Tajikistan due to an imbalance between rural and urban coverage, and the high migration of skilled health staff to other neighbouring countries. Therefore, the purpose of a human resource policy in Tajikistan is to achieve an optimal ratio between the number of doctors and nurses, as well as the elimination of disparities in staffing at all levels of the health system and across the country.

Current human resource planning is still based on old standards developed during Soviet times (HPAU, unpublished observations, 2014). In 2010, the Ministry initiated a revision of the standards and made it applicable to the current context of the country. The work is still in progress but draft standards were already developed. In 2013, the Ministry initiated an assessment to identify main gaps in human resources for health, to finalize the work started in 2010 and to develop a comprehensive policy in this area. Preliminary findings of the Ministry assessment showed that between 2009 and 2011, posts for doctors at the hospital level increased by 4.6% while posts for nurses increased by 1.4%. However, the number of staff working at health facilities is lower because one staff can occupy more than one post, for instance, 1.75 posts or even more. Overall, there is a shortage in skilled health professionals both at outpatient and inpatient levels. Health professionals are mainly concentrated in urban areas. Young

professionals who have recently graduated from medical universities/institutes usually have poor knowledge and weak practical skills, and prefer to stay in urban areas leading to the uneven distribution of the health workforce in the country.

This description applies to all health professionals including those specializing in NCDs, such as cardiologists. The disparities of cardiologists within the country are relevant; for instance, the ratio of cardiologists per 10 000 inhabitants is 1.3 in Dushanbe and 0.09 in the rural rayons surrounding Dushanbe.

Despite the introduction of family medicine in 1998, Tajikistan lacks family doctors. A Ministry study initiated in 2012 sought to understand graduates' willingness to select family medicine as their speciality (HPAU, 2013c). The study showed that the majority of graduates prefer to choose narrow specialization and work in the hospital sector, preferably in urban locations due to the low salaries of family doctors, inappropriate working conditions and poor knowledge of family medicine principles. In fact, the introductory course on family medicine is provided only in the fifth/sixth year of the programme and is described as an inappropriate clinical basis for demonstrating the work of family doctors. The Family Medicine Department at the Tajik State Medical University also shows a shortage of qualified trainers in family medicine, consistent with the Ministry study. These conclusions are in line with the findings of the HSS NCD Assessment Mission. According to the Ministry study, many family doctors do not feel comfortable treating NCD conditions, in particular heart failures and diabetes (see challenge 5).

To tackle these issues, the Ministry has developed a range of strategies including financial and non-financial motivations. Since 2010, the annual wage of health personnel including doctors and nurses has increased considerably varying from 20% up to 40%. For instance, a doctor's average wage was 58.24 somoni in April 2007, 122.3 somoni in 2008 and 651 somoni in 2012. As for non-financial motivations, the Ministry agreed with the local authorities (khukumats) to provide certain benefits, such as ceding land plots to doctors willing to move to rural areas. Additionally, the Ministry and the Tajik State Medical University jointly developed a policy that newly graduated students with a speciality in family medicine must work in rural areas for three years before obtaining their diploma. In fact, the latest data show that this policy has substantially increased the number of young health care providers in rural areas.

The Ministry has developed a policy to help fill the gap in nurses in the country. Educational nursing programmes are provided in hospitals in the oblasts to ensure qualified nurses at local level.

Challenge 11. Access to quality medicines

Tajikistan applies a national essential drug list (EDL) and formulary, which is largely consistent with the *WHO Model Lists of Essential Medicines* (WHO, 2014). Access to quality medicines, in particular at outpatient level and for chronic conditions, is still limited and the main source of OOP expenditure (Ilza Aizsilniece, WHO Regional Office for Europe, unpublished data, 2013).

According to the NHS, the main priorities regarding pharmaceuticals are related to rational use of medicines including rational selection, enhancing humanitarian aid regulations as 47% of the medicines in Tajikistan are provided by humanitarian aid, and enhancing regulations to ensure the quality of medicines.

The BBP and Government Decree 600 include access to medicines for emergency services, hospital medicines, medicines used for diagnosis, and a very limited number of medicines for population groups in the outpatient sector (e.g. veterans of the Second World War, disabled people, children under five years of age, etc.). In practice, the only area that fully covers pharmaceuticals is emergency services. In fact, most (in)patients need to buy their medicines, as the majority of hospitals cannot cover even part of the BBP. This is due to the low budget assigned to medicines and lack of transparency in the procurement system. Moreover, about 94% of patients interviewed reported purchasing drugs in

pharmacies despite being exempted by BBP or by Decree 600. Only 6% of patients interviewed reported purchasing drugs in the central city pharmacy based on the free-of-charge prescription issued by their family practitioners.

Family practitioners mentioned that local authorities (khukumats) transfer limited funds to the central city pharmacy where beneficiaries can receive drugs free of charge. The transferred funds are so limited that the family practitioners cannot issue free-of-charge prescriptions to people who are entitled to it. Also, a few family practitioners mentioned cases in which managers of health centres provide free-of-charge prescriptions to non-BBP or Decree 600 beneficiaries based on their socioeconomic characteristics.

OOP payments for medicines are growing and currently represent 94% of all OOP expenditures spent on Tajik health care (WHO, 2011). Since 2012, a VAT of about 29% on average was introduced on medicines. Currently, there are intensive negotiations with the Ministry of Finance to exclude essential medicines from VAT. Despite discrepancies between the encoding of medicines in national registries (according to the anatomical therapeutic chemical classification system, as recommended by WHO and used by all national drug regulatory authorities (WHO Collaborating Centre for Drug Statistics Methodology, 2012)) and the register for international trade, some progress has been made. An ongoing WHO/Health Action International study of availability, affordability, prices and price components under the Ministry of Health and Social Protection of Population may inform and provide arguments to be used in negotiations with the Ministry of Finance regarding the exclusion of VAT from essential medicine.

Despite the fact that the Ministry of Health and Social Protection of Population regularly monitors the price of medicines, the data seem to be used for commercial purposes by pharmaceutical distributors rather than setting national prices. A complete lack of publicly available information on both retail and wholesale prices is problematic for patients and distributors.

Procurement of medicines and materials is decentralized, but most hospitals procure through the State Procurement Agency, which obtains not only medicines but also other kinds of goods for other sectors than health. This procurement is not a pooled procurement mechanism, so it does not improve access to medicines. Currently, the central State procurement mechanism is used only to store and dispense medicines from humanitarian programmes. The Agency was established to centralize procurement in order to obtain better prices on medicines, but the lack of proper regulation and pharmaceutical policy means that this mandate has not been accomplished.

There is a consistent procedure to develop and update the EDL, which is created using international nonproprietary names (generic names) and is updated regularly as a basis for hospital procurement. However, there is a lot of pressure to start including medicines under trade names, which reflects the active marketing of drug manufacturers. The EBM Centre under the Tajik State Medical University plays a central role in the working group on updating the EDL. This process, however, is not linked to the development and update of clinical guidelines and protocols, which are mainly developed under different procedures (N. Sautenkova, WHO Regional Office for Europe & S. Isupov, Ministry of Health of the Republic of Tajikistan, unpublished observations, 2013).

No incentives exist for providers to prescribe drugs from the national EDL. In fact, most providers do not have copies of the EDL and are not familiar with its content. Patients with certain disease or disability categories (e.g. CVD, diabetes) qualify for free medications from a restricted formulary, but even those patients often have to pay partially or fully for their medications. The HSS NCD Assessment Mission showed that only 5–6% of patients who received care at the Republican Centre of Endocrinology received antihyperglycemic drugs free of charge; similarly, only 0.5–0.6% of patients with type-1 diabetes could get insulin without payment. Patients who covered the costs related to insulin and other antihyperglycemic drugs by themselves spent on a daily basis US\$ 0.68 and US\$ 0.35, respectively. On a monthly basis, they spent either 167% (on insulin) or 105% (on antihyperglycemic drugs) of the minimal official wage for procurement of these drugs. Therefore, provision of insulin and other

antihyperglycemic drugs for diabetes patients depends on humanitarian support by international partner organizations. Patients with CVD conditions need to pay for their antihypertensive drugs, statins, etc. as these drugs are not funded by the State budget.

On a positive tone, a study of prescribing practices at PHC level shows that generic drugs are prescribed around 68–70% of the time due to consistent promotion of generic drug prescription both in undergraduate and continuing education classes (N. Sautenkova, WHO Regional Office for Europe & S. Isupov, Ministry of Health of the Republic of Tajikistan, unpublished observations, 2013). It also reflects the fact that the majority of pharmaceuticals in Tajikistan are generic. There are updated hypertension protocols that are not in line with the best international practices and do not include angiotensin-converting enzyme inhibitors as a first-line treatment (Hill & Smith, 2005). First-line treatment is represented by amlodipine, which is expensive and clearly impacts its affordability.

Challenge 12. Effective management

The Ministry has made some progress in providing managerial and financial autonomy to health facilities. However, following the abolishment of the rayon health departments at the end of 2012, the lack of clarity about the accountability lines between PHC and hospitals poses a further challenge in the coordination at rayon level.

While the Ministry is responsible for the regulation and management of health providers including identifying the working conditions of health professionals and their salary levels, the local authorities (khukumats) are also involved in the management of rayon/city health facilities by designating the managers of the health facilities that are then appointed by the Ministry. Health facilities report regularly to both the Ministry and Khukumat while tertiary health facilities are directly managed by the Ministry.

Some progress on managerial and financial autonomy has been possible for those health facilities able to generate their own revenues with the application of Decree 600. However, the introduction of health financing reforms, i.e. moving to the new provider payment mechanism and pooling funds at least at oblast level has faced resistance in the country in recent years.

The health facilities at oblast level are coordinated by the oblast health departments that report to the Ministry on their health performance, including health outcomes, and report to the oblast finance departments on financial terms. Until 2012, the health facilities at rayon (district) and village levels were coordinated by the rayon (district) health departments that were accountable to the Ministry and the rayon (district) administration (khukumat). At the end of 2012, the rayon (district) health departments were abolished according to the decision of the Government of Tajikistan causing a gap in the coordination of the rayon (district) health facilities (Ministry of Health and Social Protection of Population of the Republic of Tajikistan, 2013). To address this issue in 2013, the Ministry developed a few scenarios on how the coordination should be organized at rayon level. For example, it is proposed that a rayon PHC facility manager or a rayon centre hospital manager takes responsibility for coordination at rayon level, but no final decision has been taken.

Overall, health managerial skills at the health facility level need to be improved. The NHS calls for improvement of health management at the facility level including M&E of their performance. With the aim of improving planning in health facilities, as well as increasing managerial capacity of PHC managers, the Ministry and its development partners have piloted a business planning tool since 2005. PHC health facilities in six rayons (districts) have been utilizing this tool. Once the assessment of the six pilot rayons is available, the Ministry intends to progressively scale up business planning to the rest of the country (Ministry of Health and Social Protection of Population of the Republic of Tajikistan, 2013).

Challenge 13. Adequate information solutions

The health information system, inherited from the Soviet period, is characterized by an excessive amount of data unlikely to be utilized for the management of patients or services or for policy formulation except for the last few years. The NHS provides guidance with concrete objectives in monitoring of health status, quality of care, health outcomes, and equity in health indicators; daily assistance to health care providers with medical record keeping and other clinical reporting; and early reporting of epidemic outbreaks and other sentinel events, etc.

RCMSI is responsible for coordinating the health data collection, compiling it and issuing an annual health statistics book. Health data are collected from different health provider levels based on a standardized set of forms. PHC providers, including narrow specialists at rural level (village health centres) and rayon health centres, fill in the forms manually and submit them to the health information unit at the rayon hospital level where the forms are input into a spreadsheet together with other forms collected at hospital level. All forms are then electronically transferred to the health information unit of the oblast (regional) health department. PHC providers including narrow specialists at urban level (city health centres) submit their manually filled records directly to the health information unit of the oblast (regional) health department. The oblast (regional) health department merges the forms into one document and then submits it to the oblast department of RCMSI. The quality check of the data provided in the forms is done by the oblast departments of the RCMSI but not on a routine basis, and it is weak (lack of a standard procedure to check the quality of the statistical data) (Jean-Richard; 2010).

It was recognized that the health providers are overloaded with reporting forms (42 forms) and quite often the collected data are not used appropriately. For instance, despite the fact that information is collected by health providers, data on causes of mortality rate by type of cardiovascular disease, such as ischaemic heart diseases, cerebrovascular or hypertensive diseases, are not available in the annual health statistics book. The HSS NCD Assessment Mission observed that patients' status including CVD risk factors is not regularly recorded in the patients' cards at PHC level.

The M&E framework of the NHS included few indicators related to CVD and other NCD conditions (diabetes, oncology, road traffic, etc.); these indicators were recently included when the M&E framework was revised in 2013 (see challenge 14). Furthermore, the RCMSI is reviewing the reporting forms and, so far, 28 forms were discontinued in order to decrease the reporting burden and focus on functional data collection.

Data quality control is carried out by RCMSI jointly with the oblast health statistics unit once a year but improvements are needed. A few PHC providers highlighted the fact that if an elderly person died at home, quite often the cause of death is recorded as ischaemic heart disease, and since quite often families do not allow autopsies due to cultural reasons, the mortality rate from ischaemic heart diseases could be overestimated. Routine population-based surveys on NCD risk factors, health service utilization and outcomes are not carried out in Tajikistan.

Challenge 14. Managing change

The Government of Tajikistan and the Ministry are committed to reform their health system, which is explicitly reflected in various official documents such as the *Poverty Reduction Strategy in the Republic of Tajikistan for 2010–2012*, followed by the *Strategy for improving the welfare of the population of the Republic of Tajikistan for 2013–2015* and the *National Health Strategy of the Republic of Tajikistan for 2010–2020* among others (Government of the Republic of Tajikistan, 2010; 2013c; 2013d).

Since 2002, the Ministry has begun a series of comprehensive reforms in the health sector as a result of limited access to health care services that led to the deterioration of health outcomes. Moreover, the need to introduce changes in the health sector was stipulated by a sharp decline in the amount of health

sector financing after the collapse of the Soviet Union and civil war. In 2010, the Ministry – in cooperation with other national ministries and agencies, development partners and representatives of civil society – for the first time developed and adopted the complex NHS, which is based on priorities set in the *National Development Strategy of the Republic of Tajikistan for 2005–2015* (Government of the Republic of Tajikistan; 2005a), and the *Poverty Reduction Strategy in the Republic of Tajikistan for 2010–2012* (Government of the Republic of Tajikistan; 2013d). The NHS identifies main priorities for development of the health sector in four pillars: governance, health financing, resource generation and services delivery; preventing NCDs is one of the priorities of this strategy. Further in 2013, the *National Strategy for Prevention and Control of Non-communicable Diseases and Injuries in the Republic of Tajikistan for 2013–2023* was developed and approved (Government of the Republic of Tajikistan; 2013b).

As an integral part of the NHS, an M&E framework was developed to track the progress and evaluate the impact of activities to achieve the NHS targets. A Joint Annual Review presents an overview of the achievements and challenges faced during the NHS implementation, and culminates with a Health Summit that proposes and discusses corrective actions. The Joint Annual Review and Health Summit involve key stakeholders including the Prime Minister's and the President's offices; line ministries such as the Ministry of Finance and the Ministry of Labour; the head of oblast health departments and managers of health facilities; development partners and civil society organizations.

A set of indicators serves as evidence for the efficient decision-making. Data are collected and analysed yearly. In 2013, the package of indicators was revised and reduced from 218 to 99 indicators including 11 impact indicators, 14 outcome indicators and 74 output indicators that follow up on the implementation in each pillar (HPAU, 2013d). Development partners have recognized that the Ministry of Health and Social Protection of Population is gradually increasing the use of evidence-based decision-making to inform policy. With the aim of strengthening evidence-based policy development capacity within the Ministry and providing health policy advice to the implementation of the health reforms, a Health Policy Analysis Unit (HPAU) was established at the Ministry with the support of development partners in 2007.

Local authorities (oblast health departments and khukumats) and health providers at oblast (regional) level contribute actively to the implementation of NHS and the M&E process. The capacity-building activities and debates on health reforms either in country or abroad also lead towards progress in health system reforms in Tajikistan.

Challenge 15. Ensuring access and financial protection

Overall, access to health services remains limited despite the efforts undertaken in the last decade by the Ministry (World Bank, 2013b; HPAU, 2013a; World Bank, 2011). Public health expenditure as a share of total health expenditure grew slightly between 2007 and 2011. However, it remains low in absolute and relative terms. Private expenditure represents the highest share of the total health expenditure; in 2012, OOP expenditure was 62.5% (Ministry of Health and Social Protection of Population of the Republic of Tajikistan, 2013). Expenditure on pharmaceuticals represent around one third (28%) of OOP expenditure (Ministry of Health and Social Protection of Population of the Republic of Tajikistan, 2013). During the HSS NCD Assessment Mission, patients reported that one of the reasons that prevented them from hospitalization was lack of funds: "...if you are hospitalized you need to make payments for almost every intervention – doctors, drugs, diagnostic and lab[oratory] analysis; therefore I prefer to stay at home and to pay only for drugs...".

In order to ensure equal access to health care services and formalize unofficial payments, the Ministry introduced two policies: the BBP and Decree 600 for vulnerable groups and formal co-payments for other population groups (see challenge 2). Both of these policies aimed to improve access to health services for vulnerable populations.

Between 2007 and 2013, the Ministry conducted four surveys to estimate the financial burden of patients to access health services. Findings show mixed results on the impact of BBP on the financial burden placed on patients at hospital level. Following the introduction of BBP, the proportion of patients making payments slightly decreased in the pilot compared to control areas. However, the average amount of payments made by patients increased more than twice during the same period. Despite the positive trend, the introduction of BBP did not achieve one of its main objectives, i.e. reducing the financial burden of patients at hospital level. This is because the co-payment scheme replaced only some, not the entire amount, of the unofficial payments (Ministry of Health and Social Protection of Population of the Republic of Tajikistan, 2013).

Highly specialized services at public health facilities, such as the Republican Cardiology Centre and the City Hospital in Dushanbe, are provided based on Decree 600 that regulates official fees. For example, the official cost of implanting a stent is about 5000 somoni (approximately US\$ 1000). This amount is not affordable for most of the population as the average salary in Tajikistan in 2013 was 621.26 somoni, equivalent to about US\$ 129 (State Statistical Agency under the President of the Republic of Tajikistan, 2013). However, patients with a low socioeconomic status and subject to prior authorization from the Ministry may have a stent implanted free of charge. The highly specialized services for CVD conditions are also available in the private sector. There are a few inpatient facilities but only the Iran–Tajik hospital “Sino” in Dushanbe has a specialized cardiology ward that provides common inpatient services for CVD conditions along with highly specialized services such as stenting. The State Anti-Monopoly Agency regulates prices in private health facilities. The “...prices in the private clinics are about twice higher than in public facilities. For instance, in private clinics in Tajikistan the cost of a stent varies between US\$ 2500–5000” according to most of the patients’ reports made available during the HSS NCD Assessment Mission. Additionally, outpatient care for CVD conditions is provided by narrow specialists at private outpatient clinics as one of their routine health services.

4. Innovations and good practices

This section highlights health system good practices and innovations with evidence of their impact on NCD-related core services and outcomes. In Tajikistan, a remarkable good practice documented is **continuous quality improvement (CQI)** that was first piloted in Dushanbe in 2009 to address gaps in detecting and managing hypertension.

In 2011, the USAID-funded Quality Health Care Project trained health managers from the City Family Medicine Centre in quality improvement. This cohort, in turn, trained quality improvement coordinators in each of the seven city health centres. Quality teams in each centre conducted monthly audits on 10 hypertension-related indicators, and met with all facility health workers to discuss results and formulate action plans. This approach led to a broad range of improvements in key resources, providers’ skills and physician adherence to treatment standards in the national clinical practice guideline on hypertension.

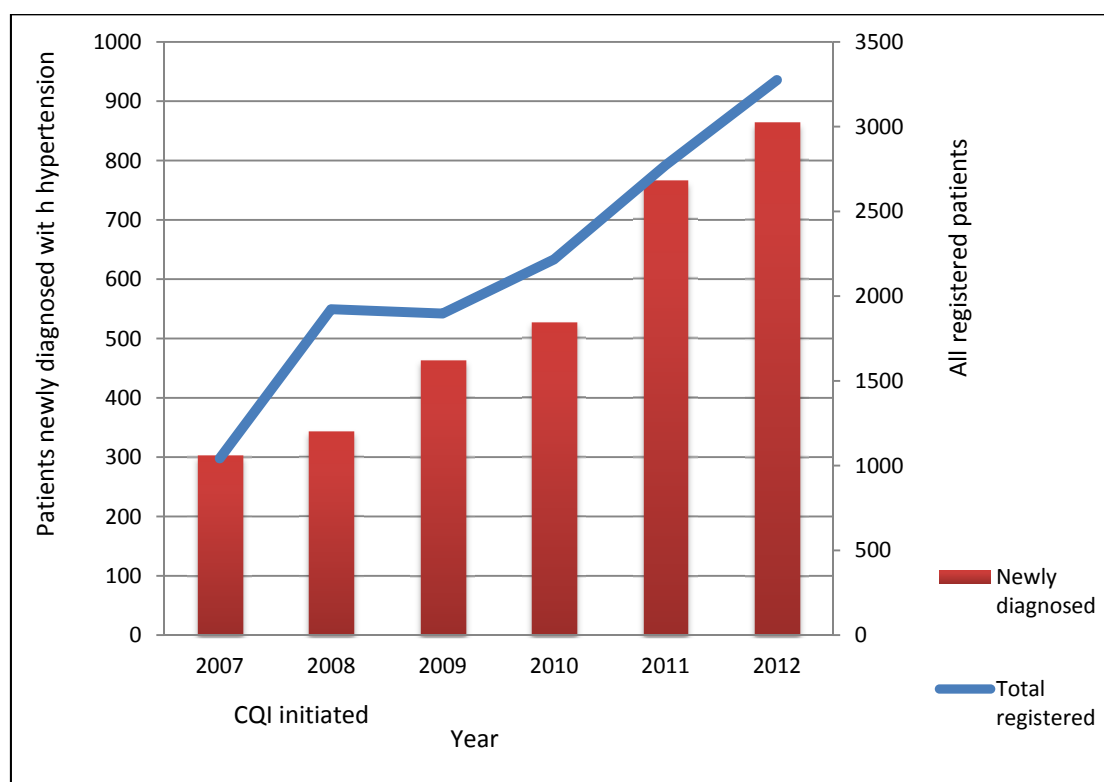
Overall, these interventions led to a 48% increase in the number of patients registered with hypertension from 2010 to 2012 (Fig. 10).

Between 2012 and 2013, the trained quality teams scaled up interventions in seven Dushanbe City Family Medicine centres including:

- changes in patient flow and mandatory nurse check-in for all clinic visitors (including blood pressure and BMI measurements);
- in-service training with ophthalmologists to strengthen the skills of family doctors to perform fundoscopic exams; and
- internal audits with individualized feedback to strengthen adherence to standards of care.

As a result, 91% of visitors in the seven Dushanbe city health facilities were screened for blood pressure by a nurse before visiting a doctor or narrow specialist (Table 5). In order to achieve this result, changes in patient flow were introduced, nurse check-in rooms were organized in all facilities and data were properly recorded. Overall, registration of CVD risk factors improved. Annex 5 shows improvements in provision of early CVD prevention services at PHC level, such as correct blood pressure measurement techniques and counselling on lifestyle changes, among others that followed the introduction of CQI services in seven Dushanbe city PHC health facilities.

Fig. 10. Hypertension detection, Dushanbe Health Centre #2, 2007–2012



These interventions are associated with positive trends in the early detection of CVD risk factors by screening for blood pressure, measuring BMI, administering EKG, among other interventions allowing family medicine practitioners to treat cardiovascular conditions in a timely and appropriate manner. While evidence shows that early detection of CVD risks factors ultimately leads to better NCD outcomes, further analysis of this good practice in Tajikistan is needed to demonstrate the impact of these positive results on NCD outcomes.

Table 5. Improvement initiatives resulting from CQI on hypertension, Dushanbe

Problem	Baseline indicator	Example interventions	Follow-up indicator
Limited blood pressure screening	6%	<ul style="list-style-type: none"> Organize nurse check-in rooms Change patient flow to require all patients to go through nurse check-in before seeing PHC provider or specialist Register all patient intake data in journals in check-in room 	91%

Problem	Baseline indicator	Example interventions	Follow-up indicator
Limited registration of CVD risk factors in patients with hypertension	BMI: 19% Ophthalmoscopy: 43% Blood glucose: 43% Urine protein: 66% EKG: 34%	<ul style="list-style-type: none"> • Add measurement and recording of BMI to nursing tasks during patient check-in • Conduct in-service training of PHC providers on ophthalmoscopy (mentoring by ophthalmologist) • Purchase biochemical analyser to improve access to essential screening labs (glucose, cholesterol, potassium) • Equip PHC providers with basic medical equipment (funded by the USAID QHCP) 	BMI: 65% Ophthalmoscopy: 80% Blood glucose: 68% Urine protein: 87% EKG: 77%
Limited adherence to treatment standards	25%	<ul style="list-style-type: none"> • Use monthly audit and feedback of provider performance to improve adherence. 	87%

5. Policy recommendations

Important health changes are taking place in communicable diseases control (TB, HIV/AIDS, vaccine-preventable diseases), and prevention and control of NCDs (introduction of clinical guidelines and standards, healthy lifestyle promotion); in the hospital sector through the introduction of high-technology inpatient care; and in the fields of pharmaceutical policy, human resources management and health governance in Tajikistan. However, despite these positive changes, more work is needed, which requires making it high priority to improve health outcomes, increase the population's financial risk protection, improve quality and availability of health services, reduce excess capacity in the hospital sector and strengthen PHC, increase public health spending, and increase the pace of health financing reform.

Based on the assessment in this report and the discussions at the validation workshop held with key stakeholders in November 2013, three recommendations were made.

1. Improve access and quality of individual health services tackling NCDs.
2. Enhance population-based interventions for tackling NCDs in particular on nutrition.
3. Further advocate and strengthen governance mechanisms for NCDs.

5.1 Improve access and quality of individual health services tackling NCDs.

In order to improve the access and quality of individual health services for better NCD outcomes, the following actions are recommended.

- Develop and introduce evidence-based clinical protocols including integration of the package of essential NCD interventions (WHO, 2010).
- Strengthen family medicine and enhance coordination between PHC, secondary and tertiary care.
- Ensure access to quality medicines at low cost.
- Establish and empower patient organizations.

In order to develop and introduce evidence-based clinical protocols including integration of the Package of Essential NCD interventions, certain actions are necessary.

- Review clinical protocols for NCD conditions and roll out updated protocols at all levels of care in the country. They should be systemized and coordinated between primary, secondary and tertiary levels.
- Develop and introduce clear care guidelines defining the level of facility (primary, secondary and tertiary) for referral of diagnosed patients for treatment.
- Develop and introduce patient pathway in management of NCDs conditions at all health service provision levels including clear roles of primary, secondary and tertiary care.
- Continue the integration and gradually roll-out of the package of essential NCD interventions already started at PHC level (WHO, 2010).
- Strengthen the role of State Service for Medical Practice Supervision while assessing the quality of provided care at all levels according to Ministry regulations.

To strengthen family medicine and enhance coordination between primary, secondary and tertiary care, certain steps are needed.

- Strengthen the existing post-graduate family medicine training (Family Doctor Retraining Programme and professional development training of family doctors) by improving clinical bases where family doctor activities are demonstrated, as well as by increasing the number of family medicine practical sessions. Moreover, the trainings should be expanded to manage a broad set of interventions.
- Improve the existing programmes that retrain narrow specialists to become family doctors by including more practical classes. It will allow them to manage different conditions including NCD.
- Strengthen the role of nurses in provision of certain population health services, particularly as they visit patients' homes more often than doctors to perform simple check-ups (measuring blood pressure, administering vaccinations, etc.) and record patients' complaints which are given to the family practitioners.
- Continue the provision of non-financial motivations to young professionals (provision of land plots) and potentially consider other incentives.
- Gradually scale up the BBP countrywide to increase the role of family practitioners, i.e. patients would need to have a family practitioners' referral for hospitalization otherwise they would pay the full amount of treatment. The existing evidence shows that this policy works in the rayons where BBP is implemented.
- Improve the coordination between primary and secondary care by strengthening the communication between them.

To ensure access to quality medicines at low cost, certain actions are recommended.

- Revise periodically the existing EDL and give them more weight while developing clinical protocols for tackling NCDs. In this context, the role of the EBM Centre under the Tajik State Medical University can be reinforced. Establish a drugs and therapeutic committee to coordinate the development of treatment guidelines and protocols and update them on a regular basis.
- Centralize/pool procurement of the more expensive and commonly used pharmaceuticals for inpatients with specific CVD conditions (such as AMI, stroke etc.).
- Develop and introduce a regular M&E process of prescribing practices at all levels of health service delivery.
- Develop a training plan and other capacity-building exercises in areas such as quality control (laboratory) and inspection functions.
- Establish mechanisms for a functional pharmacovigilance system and a system to collect complaints on the quality of medicines.
- Explore jointly with the Ministry of Finance to exempt from VAT the medicines included on the EDL.

To establish and empower patient organizations, certain measures are recommended.

- Further advocate and strengthen the hypertension clubs that currently exist, and involve patients in the different State committees dedicated to NCDs (see challenge 3).
- Support the establishment of other associations for different patients' groups such as diabetics, etc.
- Engage nongovernmental organizations working actively on NCDs.

5.2 Enhance population-based interventions for tackling NCDs in particular on nutrition.

Tajikistan has the potential to improve NCD outcomes through cost-effective population-based interventions.

- Identify the scope (volume, funding) of health promotion and disease prevention provided through individual services.
- Integrate NCD surveillance including risk factors into the routine health information system.
- Focus on population-level health promotion and disease prevention, advocating for healthy diets as a priority and later promoting physical activity, the enforcement of tobacco control and a ban on alcohol advertisements.
- Target groups and individuals at high risk for developing NCDs with prevention and control interventions.
- Approve and then implement a national action plan on tobacco control.
- Improve enforcement of the Tobacco Control Law.
- Appoint a focal point to monitor implementation of the Tobacco Control Law.
- Enforce placement of tobacco warnings on packages and bans on tobacco advertisement. Tobacco health warnings on cigarette packages are very small and difficult to read, and only one message, “smoking harms your health”, is printed in Tajik on one side and in Russian on the other.
- Provide smoke-free areas in public places; e.g. restaurants should have non-smoking areas and hotels should have non-smoking rooms.
- Increase excise taxes on tobacco products.

5.3 Further advocate and strengthen governance mechanisms for NCDs.

Tajikistan has a sound policy framework reflecting the political commitments to prevent and control NCD. The main challenge that the country faces is to transform that legislative base into actions to improve performance specifically in CVD, diabetes and oncology. Effective intersectoral mechanisms should be explored for implementation of national strategies and action plans related to NCD prevention and control.

Establishing an interministerial coordination mechanism to oversee the implementation of the NCD national action plan is recommended. This forum would facilitate advocacy, collaboration and coordination across sectors to achieve better NCD outcomes. The recent ratification of the WHO FCTC could serve as a starting point and an illustrative approach for further addressing the social determinants of NCDs. One of the main challenges for the sustainability of this type of mechanisms is the lack of adequate funding at State level. Implementation of innovative and conventional health financing mechanisms (such as taxation, public–private partnership, micro-contributions, among others) should be considered as options to overcome this problem.

Professional medical associations should also be engaged since they play a crucial role in improving NCD outcomes through advocacy in the decision-making process, assurance of quality health services and the development of the health workforce. However, this assessment revealed that professional medical associations are not so strong in Tajikistan.

Additionally, a review of the NHS M&E indicators is recommended to improve M&E of NCD outcomes (morbidity and mortality). This review should mainstream equity and social determinants of health including NCD risk factors and outcomes that could guide and tailor policy responses.

In addition, it is recommended to unify beneficiaries' access to quality health service – as regulated by the BBP and Decree 600 – into one programme using this as an opportunity to include NCD conditions into this unified BBP as one of the beneficiary categories.

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Annex 1. Criteria for scoring coverage of population-based interventions

Intervention	Score		
	Limited	Moderate	Extensive
Anti-smoking			
Raise tobacco taxes	Tax less than 25% of retail price	Tax between 25% and 75% of retail price	Tax greater than 75% of retail price
Provide 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
Warn of the dangers of tobacco and tobacco 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 greater than 50% of package size (front and back), with pictures (standardized packaging)
Ban tobacco advertising, promotion and sponsorship	No ban, or ban on national television, 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
Provide quit lines and nicotine replacement therapy (NRT) ^a	No quit lines or government-funded cessation services, but NRT allowed and available for full pay by individuals	Quit lines and government-funded cessation services available (possibly for payment), NRT available for full pay	Toll-free quit lines, cessation services and NRT available and affordable (covered at least partially)
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
Restrict or ban alcohol 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
Restrict availability of alcohol in retail sector	Regulatory frameworks on serving alcohol in governmental and educational institutions	Regulatory frameworks on serving alcohol in governmental institutions and ban on serving alcohol in educational institutions	All governmental and educational institutions free of alcohol
Enact and enforce minimum purchase age regulation ^a	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

Intervention	Score		
	Limited	Moderate	Extensive
Implement blood alcohol limit for driving ^a	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
Improve diet and physical activity			
Reduce salt intake and salt content in foods	Less than 10% reduction in salt intake in past 10 years	About 10% reduction in salt intake in past 10 years	Less than 10% reduction in salt intake in past 10 years
Replace <i>trans</i> -fats with unsaturated fats	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
Reduce free sugar intake ^a	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
Increase consumption of fruit and vegetables ^a	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/Food and Agriculture Organization of the United Nations (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
Reduce marketing pressure of food and non-alcoholic beverages to children ^a	Marketing of foods and beverages to children noted as a problem but not translated into specific action in government-led initiatives	WHO recommendations on marketing acknowledged and steps 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
Promote awareness about diet and activity ^a	No workforce development for nutrition and physical activity; nutrition and physical activity not priority elements in primary care	Some workforce development for nutrition and physical activity; nutrition and physical activity 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

^a Indicates additional criteria that were not part of the *Global action plan for the prevention and control of noncommunicable diseases 2013–2020*. WHO (2013). Geneva: World Health Organization (http://www.who.int/nmh/events/ncd_action_plan/en/, accessed 26 September 2014).

Annex 2. Criteria for scoring coverage of individual services for CVD and diabetes

Service	Limited	Moderate	Extensive
CVD			
Risk stratification in primary health care (PHC)	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 are 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. Risk factor documentation is incomplete or systematic methods are not used.	10-year CVD risk is 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 is used.
Effective detection and management of hypertension	Fewer than 30% of estimated cases with high blood pressure are identified in PHC. Evidence-based generic antihypertensive drugs are infrequently prescribed and no efforts are made to address patient adherence.	30–60% of estimated cases with high blood pressure are identified in PHC. Evidence-based antihypertensive drugs are prescribed often (25–75%) and there are some efforts to increase patient adherence but they are not systematic.	More than 60% of estimated cases with high blood pressure are identified in PHC. Evidence-based generic antihypertensive drugs are prescribed routinely (>75%); government-funded efforts to increase adherence are systematic.
Effective primary prevention in high-risk groups	Prescribers are not aware of indications for primary prophylaxis. Under 10% of patients with very high (>30%) 10-year CVD risk are identified and prescribed multidrug regimens (antihypertensive, acetylsalicylic acid and statin) for primary prophylaxis. Acetylsalicylic acid is prescribed indiscriminately to all hypertensive patients.	Prescribers are aware of indications for primary prevention with multidrug regimen. Coverage is low (10–25%) of very high-risk patients with primary prophylaxis, or appropriate drug regimens prescribed but very low patient adherence. Acetylsalicylic acid is prescribed indiscriminately to all hypertension patients.	There are routine prescriptions of multidrug regimens, including statins, for patients at very high CVD risk. Coverage of at-risk patients exceeds 25%. Evidence exists for good long-term patient adherence. Acetylsalicylic acid is not prescribed to hypertensive patients with low or medium CVD risk.
Effective secondary prevention after acute myocardial infarction (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 ^a	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.

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

^a Indicates additional criteria that were not part of the *Global action plan for the prevention and control of noncommunicable diseases 2013–2020*. WHO (2013). Geneva: World Health Organization (http://www.who.int/nmh/events/ncd_action_plan/en/, accessed 26 September 2014).

Annex 3. Health system challenges scorecard for delivery of core services

Core intervention	Challenge														
	1. Political commitment to NCDs	2. Explicit priority-setting approaches	3. Interagency cooperation	4. People empowerment	5. Effective model of service delivery	6. Coordination across providers	7. Regionalization	8. Incentive systems	9. Integration of evidence into practice	10. Distribution and mix of human resources	11. Access to quality medicines	12. Effective management	13. Adequate information solutions	14. Managing change	15. Ensuring access and financial protection
<i>Scoring of challenges</i> 1. Minor 2. Moderate 3. Major 4. Major persistent															
Anti-smoking (WHO FCTC)^a	17	15	15	14	15	-	-	15	-	15	-	15	10	10	5
Raise tobacco taxes	4	3	3	4	3	-	-	4	-	4	-	4	2	2	1
Provide smoke-free environments	4	3	3	3	3	-	-	3	-	3	-	3	2	2	1
Warn of the dangers of tobacco and tobacco smoke	3	3	3	2	3	-	-	3	-	3	-	3	2	2	1
Ban tobacco advertising, promotion and sponsorship	3	3	3	2	3	-	-	2	-	2	-	2	2	2	1
Provide quit-lines and nicotine replacement therapy (NRT)	3	3	3	3	3	-	-	3	-	3	-	3	2	2	1
Prevent harmful alcohol use	17	14	15	16	16	-	-	12	-	12	-	13	12	9	-
Raise taxes on alcohol	4	3	3	3	3	-	-	2	-	3	-	3	2	3	-
Restrict or ban alcohol advertising and promotion	2	1	2	2	2	-	-	2	-	2	-	3	3	1	-

Core intervention	Challenge														
	1. Political commitment to NCDs	2. Explicit priority-setting approaches	3. Interagency cooperation	4. People empowerment	5. Effective model of service delivery	6. Coordination across providers	7. Regionalization	8. Incentive systems	9. Integration of evidence into practice	10. Distribution and mix of human resources	11. Access to quality medicines	12. Effective management	13. Adequate information solutions	14. Managing change	15. Ensuring access and financial protection
<i>Scoring of challenges</i> 1. Minor 2. Moderate 3. Major 4. Major persistent															
Restrict availability of alcohol in retail sector	3	2	2	2	3	-	-	2	-	3	-	1	1	1	-
Enact and enforce minimum purchase age regulation	3	3	3	3	3	-	-	2	-	1	-	2	1	1	-
Implement blood alcohol limit for driving	1	1	1	2	1	-	-	1	-	1	-	1	2	1	-
Develop multisectoral policy	4	4	4	4	4	-	-	3	-	2	-	3	3	2	-
Improve diet and physical activity	13	10	18	16	22	-	-	15	-	6	-	22	17	17	16
Reduce salt intake and salt content in foods	2	2	3	4	4	-	-	3	-	1	-	4	3	3	2
Replace <i>trans</i> -fats with unsaturated fats	2	2	3	4	4	-	-	3	-	1	-	4	3	3	3
Reduce free sugar intake	3	3	3	4	4	-	-	3	-	1	-	4	3	3	3
Increase consumption of fruit and vegetables	2	1	3	1	4	-	-	2	-	1	-	4	3	3	3
Reduce marketing pressure of food and non-alcoholic beverages to children	2	1	3	2	2	-	-	2	-	1	-	2	2	2	2

Core intervention	Challenge														
<i>Scoring of challenges</i> 1. Minor 2. Moderate 3. Major 4. Major persistent	1. Political commitment to NCDs	2. Explicit priority-setting approaches	3. Interagency cooperation	4. People empowerment	5. Effective model of service delivery	6. Coordination across providers	7. Regionalization	8. Incentive systems	9. Integration of evidence into practice	10. Distribution and mix of human resources	11. Access to quality medicines	12. Effective management	13. Adequate information solutions	14. Managing change	15. Ensuring access and financial protection
Promote awareness about diet and activity	2	1	3	1	4	–	–	2	–	1	–	4	3	3	3
Total	47	39	48	46	53	–	–	42	–	33	–	50	39	36	21

^a WHO (2003). WHO Framework Convention on Tobacco Control. Geneva: World Health Organization (<http://whqlibdoc.who.int/publications/2003/9241591013.pdf>, accessed 8 October 2014).

Annex 4. Summary of challenges to scale up core individual services for NCDs

Core intervention	Challenge														
<i>Scoring of challenges</i> 1. Minor 2. Moderate 3. Major 4. Major persistent	1. Political commitment to NCDs	2. Explicit priority-setting approaches	3. Interagency cooperation	4. People empowerment	5. Effective model of service delivery	6. Coordination across providers	7. Regionalization	8. Incentive systems	9. Integration of evidence into practice	10. Distribution and mix of human resources	11. Access to quality medicines	12. Effective management	13. Adequate information solutions	14. Managing change	15. Ensuring access and financial protection
CVD															
Risk stratification in PHC	-	-	-	1	1	1	-	2	2	3	-	1	2	-	-
Effective detection and management of hypertension	-	-	-	2	3	1	-	3	1	3	1	2	2	-	-
Effective primary prevention in high-risk groups	-	-	-	1	1	1	-	2	2	3	2	2	2	-	-
Effective secondary prevention after AMI, including acetylsalicylic acid	-	-	-	2	1	2	-	2	2	3	2	2	2	1	-
Rapid response and secondary care after AMI and stroke	-	-	-	2	3	2	-	2	2	3	2	2	2	1	-
Total	-	-	-	8	9	7	-	11	9	15	7	9	10	2	-

Annex 5. Composite data from seven city health centres provided by the Dushanbe City Family Medicine Centre

Improvements in provision of early CVD prevention services at PHC level, such as correct blood pressure measurement technique and counselling on lifestyle changes, among others followed the introduction of continuous quality improvement services in seven Dushanbe city PHC health facilities (Fig. 11–16). All data in this annex came from the NCD Health Assessment Mission.

Fig. 11. Blood pressure screening in Dushanbe PHC facilities

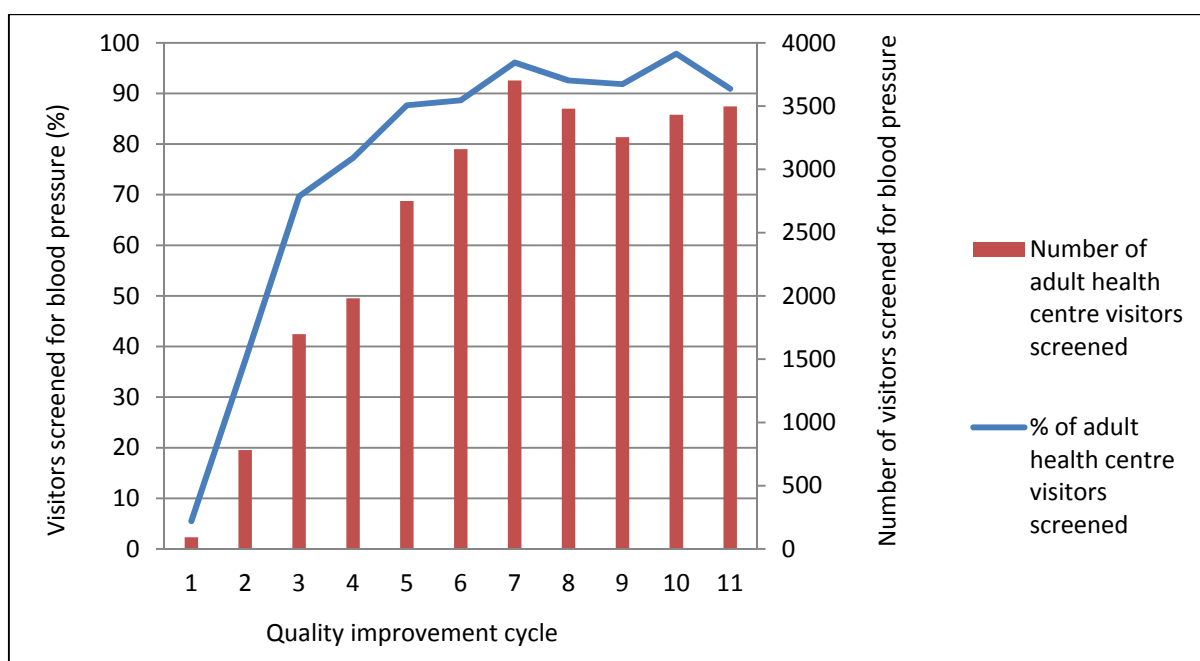


Fig. 12. CVD risk factors

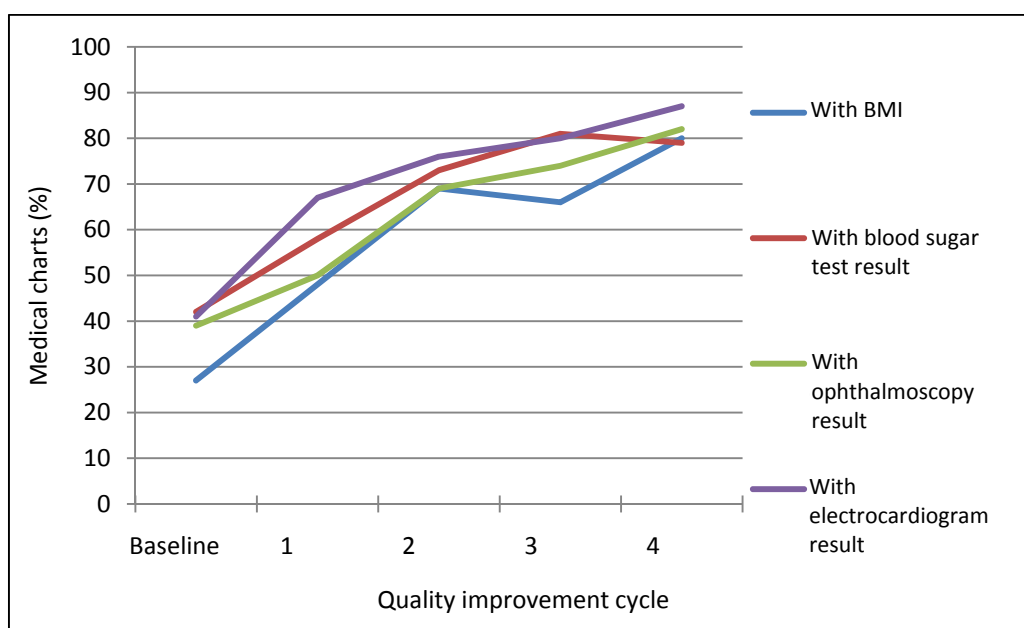


Fig. 13. Percentage of health workers demonstrating correct blood pressure measurement technique



Fig. 14. Percentage of hypertensive patients with 10-year CVD risk documented in their ambulatory record

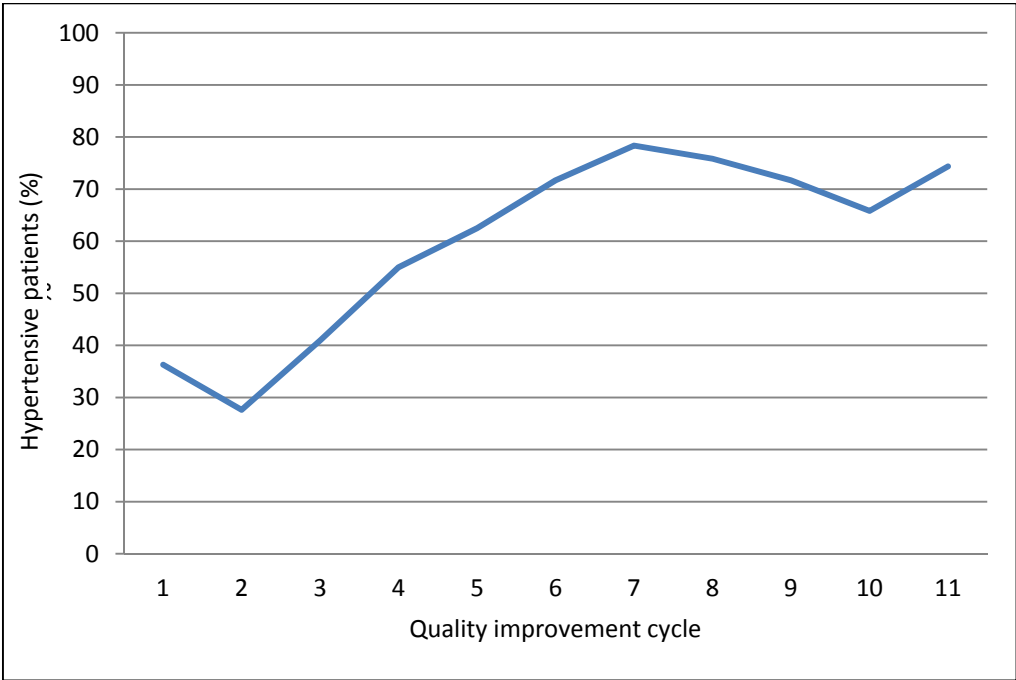


Fig. 15. Percentage of hypertensive patients with treatment prescribed in accordance with clinical practice guidelines/protocols

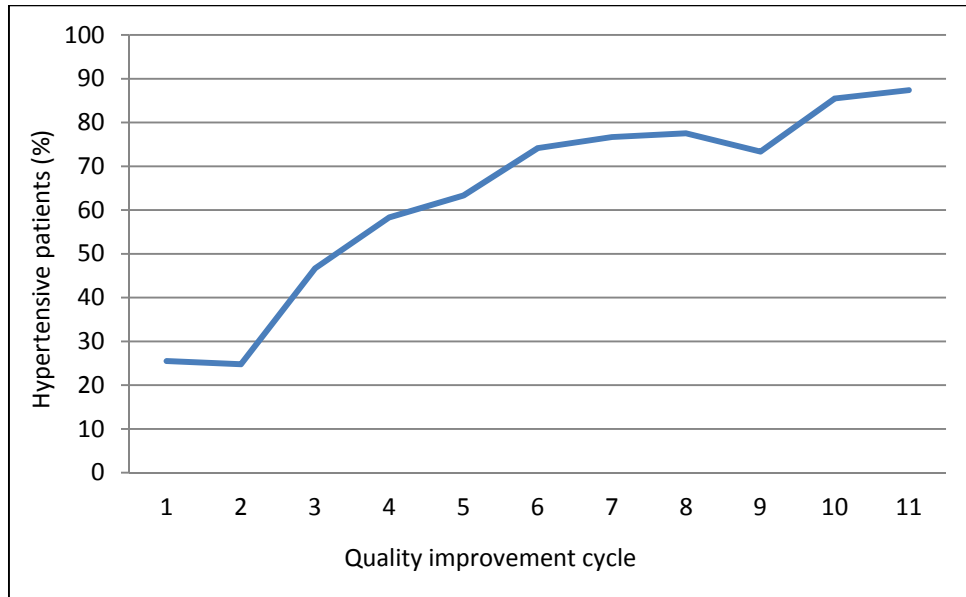
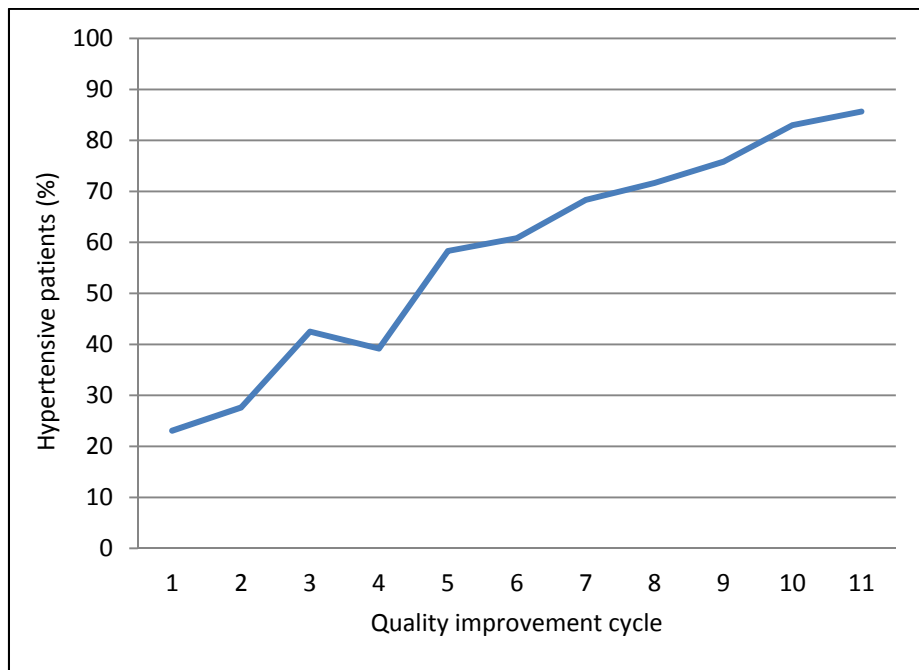


Fig. 16. Percentage of patients counselled on lifestyle changes



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