World Health Organization

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MONTENEGRO

WHO European Primary Health Care Impact, Performance and Capacity Tool (PHC-IMPACT)

WHO European Framework for Action and Integrated Health Service Delivery

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Abstract

This study examines the structures, performance and impact of primary health care in Montenegro to inform policy decision-making. It applies mixed methods to bring together a range of sources and types of data, including: international and national database data; available reporting and policy documents on Montenegro's health system; insights from key informant interviews; responses from a survey of practitioners on the model and functioning of primary care; and a consensus-building workshop on findings. The study signals a high burden of cardiovascular diseases and cancer among other noncommunicable diseases for which primary care has an important role to play: in particular, for early detection and risk factor management. Estimates of avoidable hospitalizations for conditions amenable to primary care further underscore the potential for improving primary care performance. By describing existing structures, the study describes the current scope of services provision and the organization and roles of primary care practitioners. The study finds opportunities to extend the range of services in particular for initial risk assessment and diagnostics and makes the case for optimizing the scope of practice of general practitioners (chosen doctors) and nurses working in primary care (patronage and gynaecological nurses). These and other policy recommendations are summarized as key entry points for transforming primary care in Montenegro.

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Abbreviations

ACSC   ambulatory care sensitive condition
DALY   disability-adjusted life-year
NCD   noncommunicable disease
SEEHN   South-eastern European Health Network
PHC-IMPACT   Primary Health Care Impact, Performance and Capacity Tool

Acknowledgements

Preface

The Primary Health Care Impact, Performance and Capacity Tool (PHC-IMPACT) series aims at leveraging primary health care's potential to accelerate universal health coverage through health performance intelligence

At the 66th session of the WHO Regional Committee for Europe in 2016, Member States endorsed the WHO European Framework for Action on Integrated Health Services Delivery[1]. The Framework sets out a shortlist of essential areas for transforming services delivery adopting a primary health care approach. Importantly, with the Framework's endorsement, Member States tasked the WHO Regional Office for Europe to monitor health services delivery transformations in the region through the intensified measurement of relevant indicators (EUR/RC66/R5).

The high-level political commitment to prioritize services delivery strengthening has continued to gain momentum. In 2018, Member States from around the world signalled their commitment to invest in a primary health care approach with the endorsement of the Declaration of Astana[2]. Over the course of 2019, the WHO European Regional Committee[3], World Health Assembly[4] and UN General Assembly[5] members were each called to act on this commitment. Resolutions at these assemblies urged countries to take concrete measures to implement the Declaration of Astana and ensure progress towards the 2030 Sustainable Development Goal.

In order to work towards the 2030 targets at country-level, primary health care performance measurement has a fundamental role. Without primary health care performance measurement, countries often lack, in practice, the necessary information to monitor and evaluate their options for improvement.

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1   Strengthening people-centred health systems in the WHO European Region: framework for action on integrated health services delivery (2016). Regional Committee for Europe 66th session.

2   Declaration of Astana (2018). Global Conference on Primary Health Care. Astana: Kazakhstan (https://www.who.int/docs/default-source/primary-health/declaration/gcphc-declaration.pdf).

3   Accelerating primary health care in the WHO European Region: organizational and technological innovation in the context of the Declaration of Astana (2019). Regional Committee for Europe 69th session.

4   Primary health care WHA72.2 Agenda item 11.5 (2019). Seventy-second World Health Assembly. (http://apps.who.int/gb/ebwha/pdf_files/WHA72/A72_R2-en.pdf).

5   Moving together to build a healthier world (2019). UN high-level meeting on universal health coverage. New York: United States of America.

The *PHC-IMPACT* series is the WHO Regional Office for Europe's response to increasing the availability of primary care performance data collected and analysed in an approach that is sensitive to European models, policy priorities and information systems. As part of this series, a range of resources, in English and Russian, are available to support the tailored use of the tool in countries.

- **Technical tools.** The classification of primary care's impact, performance and capacity according to a set of core domains, features and indicators has been developed through a range of reviews guided by the approach of the WHO European Framework for Action on Integrated Health Services Delivery[6]. To support the standardized use of the indicators/questions, two key resources are available: i) individual indicator passports and ii) a glossary of terms. The development of these core technical tools has benefited from close engagement with country and technical experts, acknowledged in the respective publications.

- **Data collection tools.** To support data collection, instruments in the form of online surveys and excel-based data collection tools have been developed. These instruments are available on request for their adapted use in countries.

- **Country reports.** Individual country reports describe findings and policy recommendations following the use of PHC-IMPACT in countries. The reports follow a consistent structure to facilitate the comparability across studies, however, the areas of focus and scope of each country study may vary. Country reports are developed in collaboration with country experts and ministry appointed focal points. Each follows a standard process of data collection, triangulation of findings and expert consensus.

This work is led by the WHO European Centre for Primary Health Care, Almaty, Kazakhstan – the WHO Regional Office for Europe's technical hub and resource centre for countries on health services delivery. For more information and to continue to follow the work in this series, visit the WHO Regional Office for Europe's health services delivery web page (http://www.euro.who.int/en/health-topics/Health-systems/health-services-delivery) or contact the Almaty Centre at eurocphc@who.int.

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6 A detailed description on this review process has been published elsewhere. See: Barbazza E, Kringos D, Kruse I, Klazinga NS, Tello JE (forthcoming). Creating performance intelligence for primary health care strengthening in Europe.

Summary

Introduction

Primary health care is a policy priority. Montenegro's Master Plan for the Development of the Health System 2015–2020 set out a vision to strengthen the country's primary care services delivery to meet up to 85% of the population's health needs. This ambition is well aligned with WHO European Region and global policies and targets on universal health coverage.

Methods

This study set out to explore the status of the impact, performance and capacity of primary health care. Assessing the status of primary health care in an outcome-oriented approach applying a care and performance continuum can offer insights on opportunities to leverage the accelerating potential of primary health care at the root cause of services delivery and system bottlenecks. Using mixed methods, this study creates insights into the following areas: priority health outcomes; current performance gaps in services delivery signalled by rates of avoidable hospitalizations; the status of the current model of care and system structures; and possible policy opportunities to accelerate improvements.

Priority health outcomes

Noncommunicable diseases are the leading burden of disease and, primary care can have a pivotal role in their prevention, risk management and early detection. Noncommunicable diseases are estimated to account for 95% of all deaths. Cardiovascular diseases and cancer account for the largest share of total deaths for both men and women. Specific causes include stroke, ischaemic heart disease and lung cancer.

Smoking is a major preventable behavioural risk factor. Risk factors are predominantly behavioural, especially smoking but also diet and lifestyle. Metabolic factors such as high blood glucose and high body mass index are among the leading risk factors for both men and women. These risk factors further underscore primary care's key functions of prevention and risk detection.

Performance of primary care

About 50% or more of the hospitalizations for the top ambulatory care sensitive conditions could have been avoided. According to hospitalization data, the leading causes of hospitalizations for ambulatory care sensitive conditions include pneumonia, angina, chronic obstructive pulmonary disease, ear, nose and throat infections, diabetes complications and hypertension. Estimates by health practitioners suggest that 50% or more of hospitalizations could have been avoided for five of these six leading causes of ambulatory care sensitive conditions (all except angina).

Estimates on the current coverage of services underscore the limited scope of primary care in risk detection, smoking cessation and mental health services. Services for smoking cessation including quitline services, tobacco cessation medications and specialized tobacco treatment as well as individual risk assessment for cardiovascular disease and treatment and
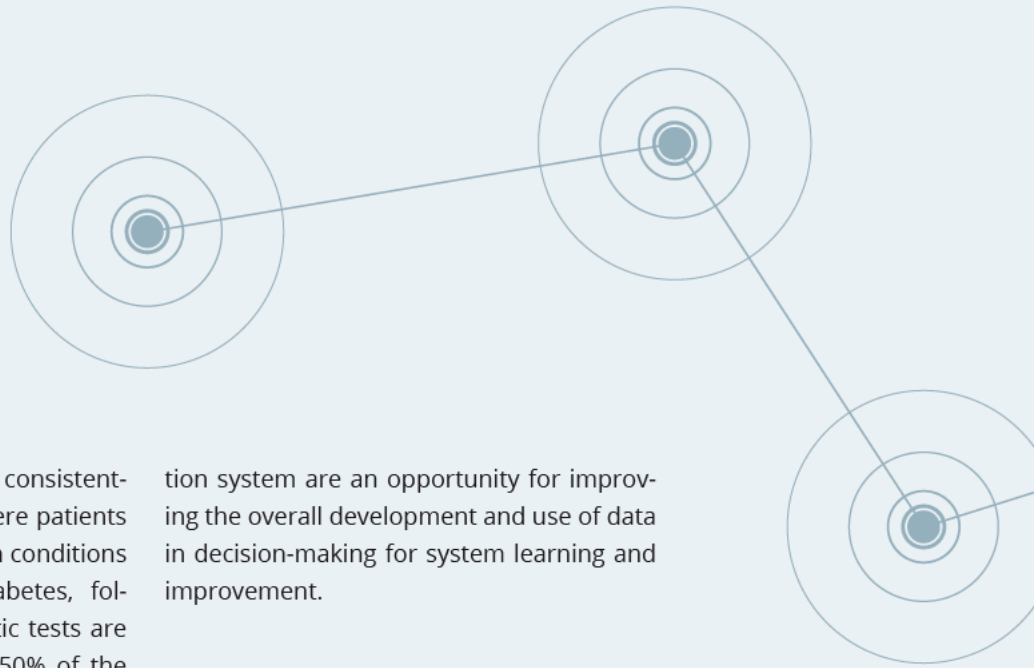
follow-up for depression are not consistently provided in primary care. Where patients are detected and diagnosed with conditions such as hypertension and diabetes, follow-up treatments and diagnostic tests are estimated to reach more than 50% of the target population. To what extent the total number of diagnosed patients is in fact representative of those living with these conditions is a confounding factor.

The model of care

Public primary care services are predominantly delivered by general practitioners (chosen doctors for adults in general, children and women (gynaecologists)), midwives (gynaecological nurses) and nurses working in primary care (patronage nurses) and specialist doctors (consulting specialists) and dentists, working across 18 primary care centres in 403 teams (as of 2015). A wide range of counselling and follow-up services are provided by chosen doctors. However, risk assessment, diagnostics and confirmation of diagnosis is within the scope of chosen doctors to a lesser extent. Chosen doctors have a gatekeeping function for consulting specialists, but given their limited scope of practice and that of the nurses, there is high referral to specialists for the tracer conditions investigated.

System structures

The absence of referral criteria in clinical guidelines and lack of financial incentives to stimulate accountability and performance improvement are among key health system structures that hinder the overall capacity of primary care. Investments in the informa-

tion system are an opportunity for improving the overall development and use of data in decision-making for system learning and improvement.

Policy recommendations

1. **Ensure a competent workforce of chosen doctors** by investing in the continuous development of the existing workforce, for chosen doctors to be supported in taking responsibility for their practice population.

2. **Expand the scope of practice of nurses by engaging nurses** in triage and follow-up with patients to make optimal use of their skills and competencies.

3. **Enhance the diagnostic capacity of primary care** to ensure that chosen doctor–led practices are equipped with the resources and skills to conduct diagnostic testing for priority conditions.

4. **Increase the prescribing capacity in primary care** to enlarge the resolving capacity of primary care.

5. **Invest in risk assessment** to effectively manage needs and begin treatment as required.

6. **Ensure that a comprehensive range of preventive services** are made available in primary care, especially for cardiovascular disease, diabetes and mental health needs.

7. **Enhance health information systems** to support continuous learning about and improvement of health services delivery, including monitoring and evaluation.

8. **Align incentives** to stimulate accountability for primary care performance and health outcomes.
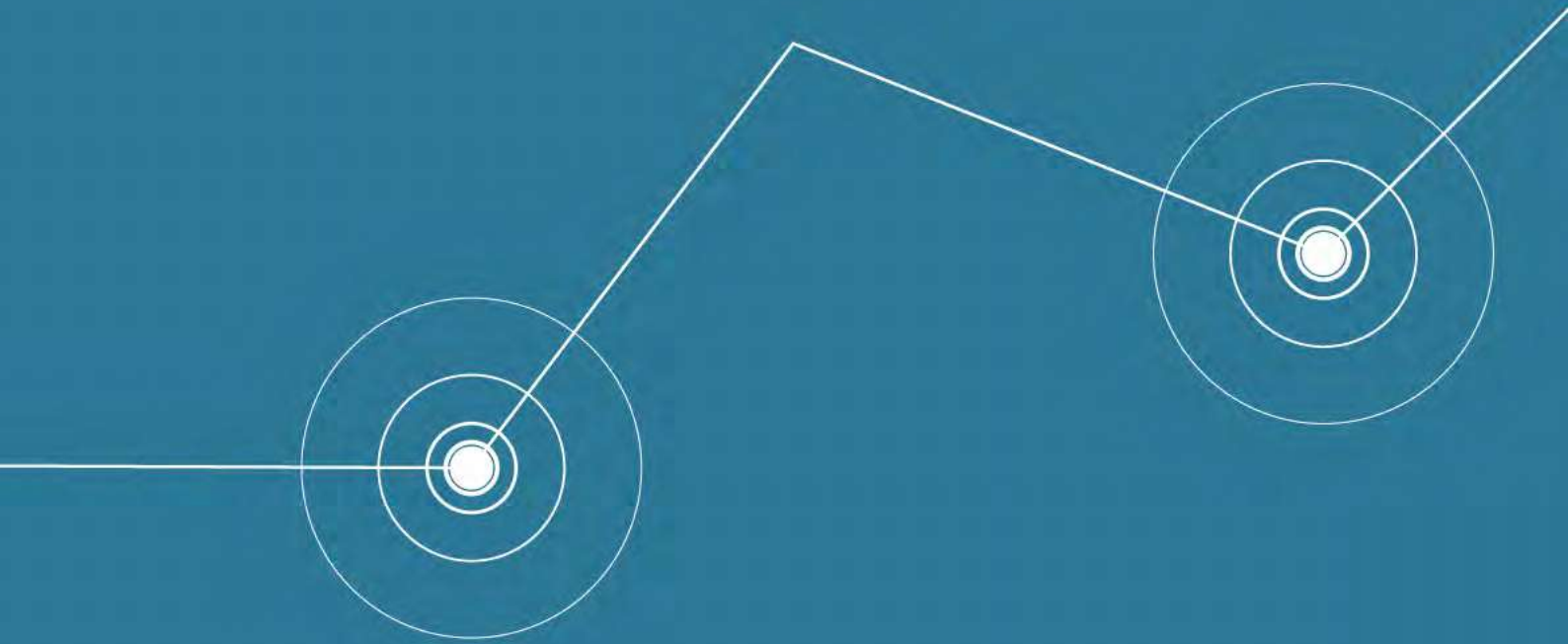
Introduction

◎ Primary health care has been made a policy priority in Montenegro's 2015–2020 Master Plan for the Development of the Health System with the aim to extend coverage to quality, essential health services to meet up to 85% of the population's health needs.

◎ In the context of national, European and global policy priorities, creating a snapshot on the status of primary health care is found needed to inform priorities for leveraging the accelerating potential of primary health care towards universal health coverage.

◎ This study was designed to explore the capacity, performance and impact of primary health care to resolve priority health needs.

A snapshot of the current context

Montenegro's public health system is the primary provider of health services to the country's 628 000 population, spending 6.4% of GDP on health in 2014

The health system is highly centralized, with the Ministry of Health being the primary administrative, regulating and governing authority in the health sector serving the country's population of more than 628 000 *(1)*. The health system is organized with a split between purchasers and providers and is predominantly public, with few private providers of care. Montenegro's relatively small private health care sector contrasts with other neighbouring countries. Private providers that are in place are mostly dental clinics and few specialized centres, but data on these centres are largely unavailable. Resources are raised mainly through compulsory wage-based contributions, although there is a substantial share of out-of-pocket spending *(2)*.

In 2014, total expenditure on health as a share of GDP was 6.4% according to WHO estimates *(3)*. Public health expenditure has steadily declined since 2010, although Montenegro's expenditure on health as a share of GDP is similar to the average of South-eastern Europe Health Network (SEEHN)[7] countries. In 2014, public spending on health accounted for 57% of total expenditure on health care in Montenegro; this is considerably lower than the average in the SEEHN countries of 80%. The share of private expenditure (out-of-pocket payments) was almost 43% in 2014, higher than the average among SEEHN countries (about 33%) that same year *(3)*.

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7   The South-eastern European Health Network has 10 members: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Israel, Montenegro, North Macedonia, the Republic of Moldova, Romania and Serbia.

Over utilization of secondary care, suboptimal coverage of essential health services and a narrow scope of practice of general practitioners are among key priorities for services delivery policy

Montenegro's strategic plan – Master Plan of the Development of the Health System 2015–2020 – recognizes the critical role of health services for improving population health. Reviews of the health system informing the priorities set by the Master Plan signal mismatches between the network of health institutions in terms of population coverage and distribution of the health workforce – with the volume of health workers less than European Union averages in some fields and higher for certain specialist services (4).

High rates of people directly accessing specialized outpatient care are one symptom connected with the suboptimal organization of services described in the Master Plan. The limited scope of practice of general practitioners (chosen doctors[8]) for treating and managing patients has also been identified as an area for improvement to increase the response capacity of primary care, although this has not yet been studied in depth in practice (4).

Further to the organization of services, international data have signalled the need to extend the coverage of essential health services. A global universal health coverage index has been developed to monitor progress towards Sustainable Development Goal 3 target 3.8.1 on the services component of the universal health coverage index,[9] reporting the coverage of essential services for selected tracer services as a composite score. In 2015, coverage of essential health services on this index globally varied widely; from the lowest index value of 22 to the highest index value of 86 (of 100) (6). That same year, Montenegro scored 54 – lower than both the European and global index values (77 and 64 respectively) – scoring well below the median of all countries on services, especially related to tobacco nonsmoking, family planning and HIV treatment.

Importantly, the potential of a primary health care approach to accelerate access to and uptake of quality, affordable health services has garnered primary health care the status of an accelerator to drive progress towards the health-related Sustainable Development Goals (7). This potential has rightly been recognized in the policy priorities informing the Master Plan's vision and principles for health system strengthening, setting the ambition for primary care services to effectively manage up to 85% of patients' health needs.

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8   For the purposes of this study, chosen doctor is used synonymously with general practitioner.

9   The universal health coverage service index is a measure of Sustainable Development Goal indicator 3.8.1, coverage of essential health services defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, NCDs and service capacity and access, among the general and most disadvantaged population (5).

About this study

Creating a snapshot on the impact, performance and capacity of primary health care to sharpen implementation efforts

Generating health performance intelligence – as the link between data collection, analysis and its use for policy decision-making – is critical to optimally leverage primary health care's potential in accelerating towards universal health coverage. The availability of health performance information has continued to be expanded as advances are made in health information systems. However, reporting on health services delivery applying international frameworks and standardized measures remains limited. This is evidenced by the few available surveys and reports in English and data sets with up-to-date information.

In this context, in parallel to the implementation of Montenegro's Master Plan, the opportunity to explore primary care in practice was given priority. This study took shape with the aims of making the best use of available data and addressing system blind spots through targeted data collection with a focus on engaging health practitioners as key informants. The perspective of health practitioners has been given priority, recognizing their frontline expertise on the day-to-day functioning of the system and the need to complement an understanding of the existing structures at the system-level backed by the evidence on the provision of services in practice.

As such, the study was guided by an investigation into the ability of primary care to respond to priority health improvement areas. To do so, the following key questions were explored. What is the current profile of diseases and risk factors amenable to the strength of primary care? What does the performance of primary care signal about the quality of primary care services? How does the capacity of primary care, as the model of care and system structures, align with priority health improvement areas and performance?

The study applied a three-pronged approach to measure primary care's capacity, performance and impact

This study was guided by the three-pronged approach of the WHO European Framework for Action on Integrated Health Services Delivery *(8)* and its monitoring framework: the Primary Health Care Impact, Performance and Capacity Tool (PHC-IMPACT) *(9)*. The framework and suite of indicators developed by the WHO European Centre for Primary Health Care work to strengthen links to routine information systems and create primary health care performance intelligence that is tailored to the context of the 53 countries of the European Region.

PHC-IMPACT applies the classical framework of structures, processes and outcomes. In the scope of the tool, these are characterized as the capacity, performance and impact of primary care (Fig. 1). For the purposes of this application, the comprehensive approach of PHC-IMPACT was scoped to priority areas of investigation and existing and available data with a focus on indicators and questions that can be answered by health practitioners. Table 1 details the specific selection of domains, subdomains and features that were given priority for investigation in this study.

Fig. 1. The framework underpinning this study

Impact of primary care	Performance of primary care			Capacity of primary care	
Health outcomes	**Health system outcomes**	**Primary care outputs**	**Care contact**	**Model of primary care**	**Primary care structures**
Health status and well-being	Quality	Access to primary care services	Utilization	Selection of primary care services	Primary care governance
			Continuity of primar care		Primary care financing
		Responsiveness of primary care		Primary care design	Primary care workforce
	Equity		Coordination across settings		Primary care information systems
		Safety of primary care		Organization of primary care workforce	Primary care medicines
			Comprehensiveness of services		Primary care diagnostics
	Efficiency	Effectiveness of primary care services		Primary care services management	Primary care technology
			People-centredness of primary care		Primary care facility infrastructure
				Primary care quality improvement	

Social determinants and context (political, social, demographic, socioeconomic)

Note: the scope of this study is narrowed to the priority policy areas of investigation and data availability. See the methods for a detailed overview of subdomains and features explored.

Source: Barbazza et al. *(10)*.

In the approach of PHC-IMPACT's care continuum, a set of tracer conditions was applied (Table 1). The set of tracer conditions for the WHO European Region were selected considering their relevance to the overall burden of disease in Europe, responsiveness to the strength of primary care and representativeness of primary care's functions. For the purposes of this study, attention was also focused on exploring tobacco smoking as a recognized priority risk factor, and ambulatory care sensitive conditions (ACSCs)[10] were expanded on, recognizing the quality of care and the intersection of primary care and specialist services as a key policy priority.

The study was supplemented by specific measures drawn from WHO's survey for assessing the performance of existing tobacco-dependent treatment and the WHO Regional Office for Europe's approach to assessing ACSCs to generate estimates on avoidability *(11,12)*.

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10 ACSCs are defined as conditions for which it is possible, to a large extent, to prevent acute exacerbation and reduce the need for hospitalization through strong primary health care–based services delivery. There are varied national lists of ACSCs. A review for international use found the combined, non-country specific list by Bardsley et al. (11) the most robust for multicountry studies in the European context (12).

Table 1. Priority tracer conditions investigated

	Cluster	Condition or services	Classification	Target population and life-course[a]	Gender importance	Type of service
1	Reproductive, maternal, neonatal and child health	Postnatal care	Service	Infants; adolescents; adults	Women and infants	Treatment and management
2	Communicable	Influenza	Vaccine-preventable	Children Older adults	Both	Prevention
		Tuberculosis (TB)	Chronic	All	Both	Prevention, detection, treatment and management
3	Cardiovascular diseases	Hypertension	Chronic	Adults; older adults	Both	Prevention, detection, treatment and management
		Heart disease	Chronic	Adults; older adults	Both	Prevention, detection, treatment and management
4	Diabetes	Type 2 diabetes	Chronic	Adults; older adults	Both	Prevention, detection, treatment and management
5	Respiratory	Chronic obstructive pulmonary disease	Chronic	Adults; older adults	Both	Prevention, detection, treatment and management
		Asthma	Chronic	Childhood – onwards	Both	Prevention, detection, treatment and management
6	Cancer	Breast	Chronic	Adults	Women	Detection and management
		Cervical	Vaccine-preventable	Adolescents	Women	Prevention, detection and management
		Colorectal	Chronic	Older adults	Men	Detection and management
7	Mental health	Depression	Chronic	Adolescents – onwards	Both	Prevention, detection, treatment and management
8	Risk factors	Smoking cessation	–	Adults; older adults	Both	Prevention
9	Other ACSCs	Based on hospitalization data	Chronic, acute, vaccine-preventable	All	Both	Prevention, detection, treatment and management

[a] Life-course converted to age ranges: infant (0–1 years old); children (1–10 years old); adolescents (11–19 years old); adults (20–59 years old); older adults (60+ years old).

Structure of the report

The following chapter (methods) describes the process and relevant data sources that informed this study. The remainder of the report is organized in the following chapters. Chapter 3 explores the health context to describe the current burden of disease and risk factors using internationally reported health outcome data. Chapter 4 assesses the performance of primary care, focusing on the quality and utilization of services in primary care based on hospitalization data and expert estimates. Chapter 5 outlines the capacity of primary care according to the current model of primary care. Chapter 6 explores the status of relevant system structures. The seventh chapter highlights cross-cutting findings linking the impact, performance and capacity of primary care. The final chapter presents a series of recommendations to strengthen primary health care.

Table 2. Topic guide to study and themes covered in this report

Domains	Subdomains	Features
Impact		
Health outcomes	Health status and well-being	Mortality
		Burden of disease and risk factors
Performance of primary care		
Health system outcomes	Quality of care	Avoidable hospitalizations for ACSCs
Primary care outcomes	Safety of primary care	Medical errors
		Medicine safety
	Effectiveness of primary care	Effective management and control of diseases
		Effective smoking-cessation services
Care contact	Utilization	Utilization of preventive care and diagnostic services

Domains	Subdomains	Features
Capacity of primary care		
Primary care model of care	Selection of primary care services	Preventive care
		Diagnostic procedures
		Treatment
		Management of disease
		Patient engagement
	Primary care design	Referral system (including gatekeeping, referral and reply protocols)
		Care pathways
		Flexible access modes
		Shared care plans
	Primary care workforce organization	Practice population
		Primary care teams
		Collaboration of primary care with other professionals
Primary care structures	Primary care governance	Development of clinical guidelines
	Primary care financing	Provider payment methods in primary care
	Primary care workforce	Primary care workforce planning (type, scope of practice and training)
		Primary care workforce availability
	Primary care medicines	Availability of medicines in primary care, including tobacco-cessation medications
	Primary care information systems	Data capture
	Primary care diagnostics	Availability of laboratory tests in primary care
		Availability of diagnostic imaging in primary care
	Primary care technologies	Availability of basic equipment in primary care
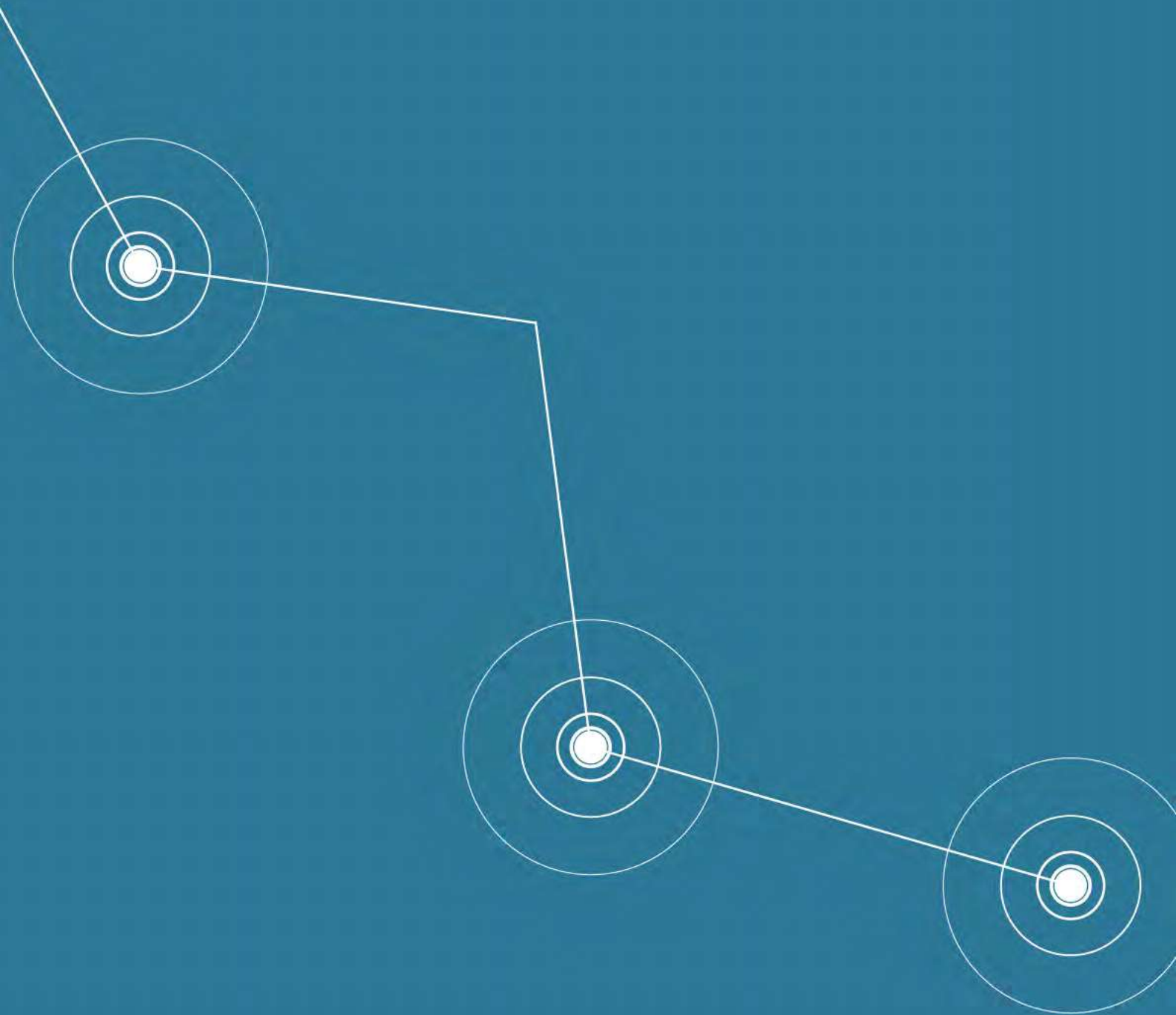
Methods

This study was performed in four main stages: scanning the available data; conducting key informant interviews; carrying out a survey of practitioners; and convening an expert consensus workshop to validate the findings and preliminary analysis. The findings were triangulated and analysed.

Existing data was drawn on as far as possible. This includes extracting data from national and international databases, surveys, reporting and policy documents available.

Additional data collection has included key informant interviews and an electronic survey targeting health practitioners as key informants on the capacity and performance of primary care in practice. As a final stage, an expert consensus workshop was organized to review and validate the results.

Limited available data ultimately narrowed the scope of the study and the possibility of fully triangulating the findings.

Overview of stages and sources of information

This study was carried out in 2018. The work was completed in the scope of technical assistance provided by the WHO Regional Office for Europe through the WHO European Centre for Primary Health Care in Almaty, Kazakhstan and the WHO Country Office in Montenegro at the request of the Ministry of Health.

The development of the study took a stepwise approach to best tailor the scope and areas of focus to the current context and policy priorities. It was performed in four main stages (Fig. 2): (1) scanning the available data through an initial document (including international reports and assessments, policy documents and presentations) and database review; (2) conducting key informant interviews as a quick scan of policy priority areas; (3) carrying out a practitioner-focused survey tailored to the country context to capture the delivery of primary care services in practice; and (4) convening an expert consensus workshop to validate the findings and preliminary analysis through a structured process of presenting and reviewing survey responses and a preliminary analysis on priority accelerating opportunities. These stages and the respective sources of data and information are described as follows.

Stage one: scanning the available data

Data from national and international databases and existing survey data

The selected indicators for analysis in the scope of the study's topic guide draw from existing, internationally standardized indicators/questions in national and international databases and surveys (Table 3). Data has been extracted for relevant indicators from international databases for the most recent year. Available survey data from 2015 and on was also consulted, providing insights specifically on the national health information system *(13,14)*.

Fig. 2. The study's four main stages and respective sources of data

This study used ACSCs as a proxy for measuring the quality of primary care as unnecessary hospital admissions, suggesting a lack of uniformity in the patterns of referral and admission procedures and inadequate management of conditions in primary care. WHO has applied the list of ACSCs from Bardsley et al. *(11)* (Table 4) in a series of multicountry studies on this topic *(12)*.

From national databases, the Institute for Public Health provided hospital discharge data representing all seven general hospitals and one of three specialized hospitals (Brezovik for pulmonary diseases) for 2016 and 2017. These data are reported as the total number of hospital discharges and were extracted for ACSCs, as indicated in a list of ACSCs by Bardsley et al. *(12)*. The data have been disaggregated by sex and age and geographical region at the level of municipalities.

Table 3. The assessment draws from more than 10 sources, including national and international databases and existing surveys

Type	Database	Years	Source
National database	Institute for Public Health	2016, 2017	Institute for Public Health
International databases	Eurostat database	2018	European Commission *(15)*
	World Population Prospects Database	2017	United Nations *(1)*
	European Health for All database	2015, 2016	WHO Regional Office for Europe *(16)*
	Global Health Observatory	2014	WHO *(17)*
	Global Burden of Disease Database	2017	*Institute for Health Metrics and Evaluation (18)*
	Universal Health Coverage Portal	2015	WHO *(19)*
	Antimicrobial medicines consumption network data	2017	WHO Regional Office for Europe *(20)*
	Global Health Estimates	2015, 2016	WHO *(21)*
Existing surveys	Data scanning survey: health services delivery data in the WHO European Region	2018	WHO Regional Office for Europe *(13)*
	Global survey on eHealth	2015	WHO *(14)*

Table 4. Codes used for extracting hospitalization data from national databases

ACSC	Corresponding ICD-10 codes
Angina	I20, I240, I248, I249
Asthma	J45, J46
Cellulitis	L03, L04, L08, L88, L980, L983
Chronic obstructive pulmonary disease	J41–J44, J47
Congestive heart failure	I110, I50, J81
Convulsions and epilepsy	G40, G41, O15, R56
Dental conditions	A690, K02–K06, K08, K098, K099, K12, K13
Diabetes (in any field)	E119, E109, E1165, E1065
Diabetes complications	E100–E108, E110–E118, E120–E128, E130–E138, E140–E148
Gastroenteritis	K522, K528, K529
Hypertension	I100, I119
Immunization-preventable conditions	J10, J11, A15, A16, A19, A35-A37, A80, B05, B06, B16.1, B169, B180, B18.1, B26, G000, M014
Iron deficiency anaemia	D501, D508, D509
Kidney or urinary infection	N10, N11, N12, N136, N390
Nutritional deficiency	E40-E43, E55, E643
Pelvic inflammatory disease	N70, N73, N74
Perforated or bleeding ulcer	K250–K252, K254–K256, K260–K262, K264–K266, K270–K272, K274–K276, K280–K282, K284–K286
Pneumonia	J13, J14, J153, J154, J157, J159, J168, J181, J188

Existing reports and normative documents

Reporting on health services delivery and the health system is relatively limited. To include materials that are available, the documents reviewed ranged considerably by type (legislation, assessments, reports and presentations), language (English and Montenegrin) and status of publication (published and drafts).

Documents were collected in large part through the repository of documents stored by the WHO Country Office in Montenegro and the WHO Library Database (WHOLIS). Documents in Montenegrin were initially reviewed using Google Translate to determine their relevance and, where needed, underwent full or partial translation. The study has also relied on key normative policy documents on health services delivery.

Stage two: conducting key informant interviews

To complement the document review, face-to-face key informant interviews were conducted in May 2018. About 10 interviews were held with informants representing the following: from the national perspective, the Ministry of Health, Institute for Public Health and Health Insurance Fund; and from the health professional perspective: health practitioners and facility managers from three primary health care centres, one city hospital and the Clinical Centre of Montenegro.

The aim of the semistructured interviews was to gather information to identify and set priorities for policy areas for strengthening primary health care. The topic of each interview was tailored to the informant, ranging from the status of the delivery of primary care services, sources of current challenges, roles and responsibilities of different health system actors and identifying possible solutions. Once the interviews were completed, common themes were identified by analysing interview notes.

Stage three: carrying out a survey of health practitioners

To supplement available data and information gathered through key informant interviews, a survey was designed to capture the current capacity and performance of primary health care in practice from the perspective of frontline practitioners. Survey data on health practitioners were otherwise not available. This method was selected as an approach to increase the number of perspectives captured while also assuring the anonymity of respondents relative to key informant interviews.

A survey was designed drawing from three existing survey instruments: PHC-IMPACT *(22)*, WHO's survey for assessing the performance of existing tobacco-dependent treatment and the WHO Regional Office for Europe's approach to assessing ACSCs *(11)*. A total of 66 questions were selected and organized into five sections spanning the following topics: (1) mapping the model of primary health care; (2) the capacity of primary care; (3) the performance of primary care; (4) delivery of tobacco-cessation ser-

Fig. 3. Profile of survey respondents
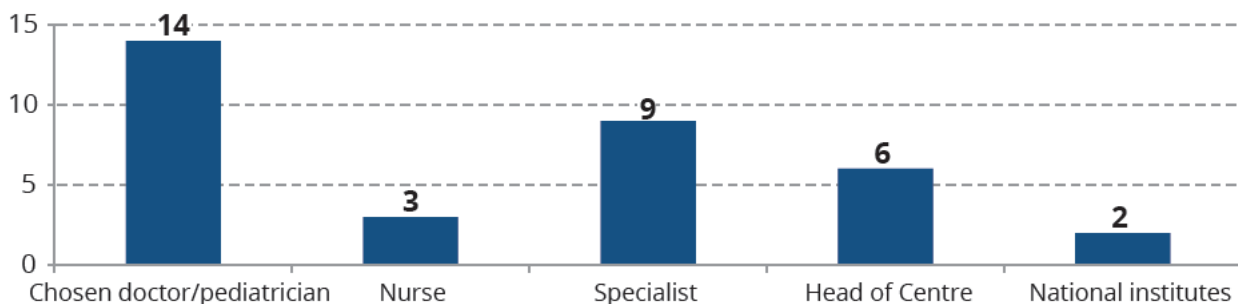
vices; and (5) the status of ACSCs. The survey was adapted to the context through a detailed technical review, resulting in the accommodation of national terms such as chosen doctor and chosen paediatrician into a refined glossary of terms and adjusted answer categories. The reviewed survey was translated into Montenegrin and built online so that answers could be completed and stored electronically.

A total of 34 informants were identified through a sampling of primary health care facilities spanning three different networks, including the city of Kotor to the west, the capital city Podgorica and the city of Berane to the north-east. Respondents included chosen doctors and paediatricians, nurses, specialists and management (Fig. 3). Two respondents were engaged from the policy perspective and used as comparators.

The survey was administered electronically in October 2018. Each respondent received a personalized survey link to submit their answers and general comments. The survey was administered with in-person support of the study's team, providing one-on-one technical guidance for respondents while completing the survey.

In the scope of generating estimates for ACSCs, survey respondents were presented with the prevalence and hospitalization rate for the top-six ACSCs in 2016 and 2017. Respondents were informed that not all hospitalizations for ACSCs can be prevented by effective ambulatory care, since patient-level factors also play an important role. Taking this into consideration, they were asked to estimate the percentage of hospitalizations for each ACSC that could have been prevented by quality primary care services, considering potential exogenous factors and based on their professional experience.

All responses were extracted from the online survey platform for analysis in Excel. For the purposes of analysis, answers completed as "do not know" or incomplete were excluded from the total response rate. Answers were

reviewed and confirmed as final answers by variable if more than 75% of the complete responses were in agreement. If agreement was less than 75%, this was flagged for discussion at a consensus workshop described later. Comments were translated to English where needed. Annex 1 provides a full record of responses following this analysis.

Stage four: convening an expert consensus workshop to validate findings and preliminary analysis

In December 2018, a structured expert consensus workshop and discussion on findings was organized in the capital city of Podgorica. Participants included initial survey respondents together with additional representatives from local primary care centres and the Ministry of Health.

At the workshop, survey responses were presented anonymously for questions for which there was not clear agreement on a final answer. The assessment team moderated the sessions, and the final answers, based on the group's discussions, were recorded. Building on preliminary observations and the final answers following discussions, the group discussed cross-cutting messages as priority areas of focus for strengthening primary health care. These discussion points have informed the recommendations put forward that have been supplemented by further analysis of all collected data.

All data and information were consolidated for further analysis and reporting. The findings were synthesized in the structure of the study's underpinning framework. The findings are reported with attention to note the original sources. The results were assessed along the performance and care continuums of the underpinning assessment framework. A final technical review supported by national experts aimed to ensure the accuracy of results and to address information gaps.

Study limitations

Although Montenegro's health information system has improved, available, internationally comparable data remain limited. Moreover, reporting in English on Montenegro's health system is sparse. The reports and normative policy documents in Montenegrin that were recommended by key informants and survey respondents and available electronically were translated online and reviewed to overcome this. The limited availability of data has a few consequences. One, the study has relied considerably on survey data and the estimates generated through a structured process of expert consensus. Two, there was limited possibility to triangulate findings through a comparison across data sources. Three, some gaps in information could not be overcome. Four, the search for documents in Montenegrin was based solely on a snowballing of recommendations and may the exclude other available literature.

As previously stated, the scope of this study was tailored to policy priorities and available data. In effect, the study did not explore all possible areas of investigation, such as health services management and quality improvement, which merit further investigation. Importantly, this includes also the exclusion of patient-reported outcome and experience measures since these data were not available despite their recognized importance and relevance to PHC-IMPACT for measuring the patient-centredness of the services provided.

Data on pharmaceuticals were also unavailable. Prescribing data in primary care are also recognized as an important area of further research in the context of regional and global policy priorities on antimicrobial resistance. Assessment of the private-sector services was also excluded for reasons of scale relative to the public sector but could be explored given its importance, especially in relation to pharmaceuticals. Although hospitalizations for ACSCs were included for measuring performance, priority conditions were not explored in full across the

care pathway in a similar way as other tracer conditions due to the availability of information and possibility to fully tailor the tool to capture these priority areas.

Moreover, this application of PHC-IMPACT is part of the initial piloting of the instrument following a preliminary country test. As such, the indicators and questions continue to be improved on. This includes standardizing a protocol for the expert consensus workshop, drawing lessons on the allocation of time, presentation of results and facilitation of the discussion. A full review of the initial piloting of PHC-IMPACT in countries will be reported elsewhere.
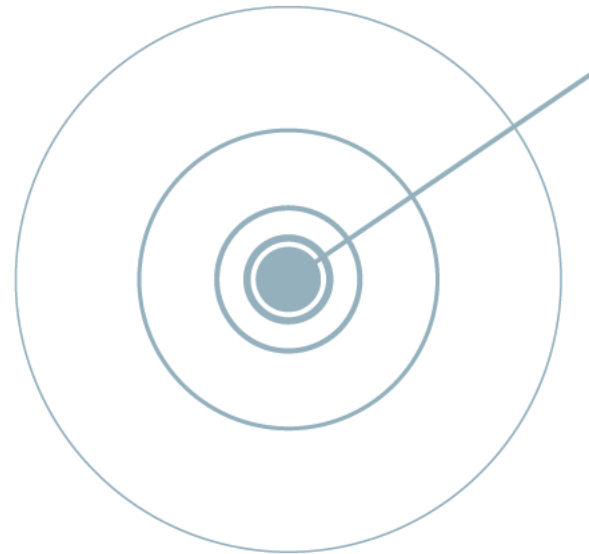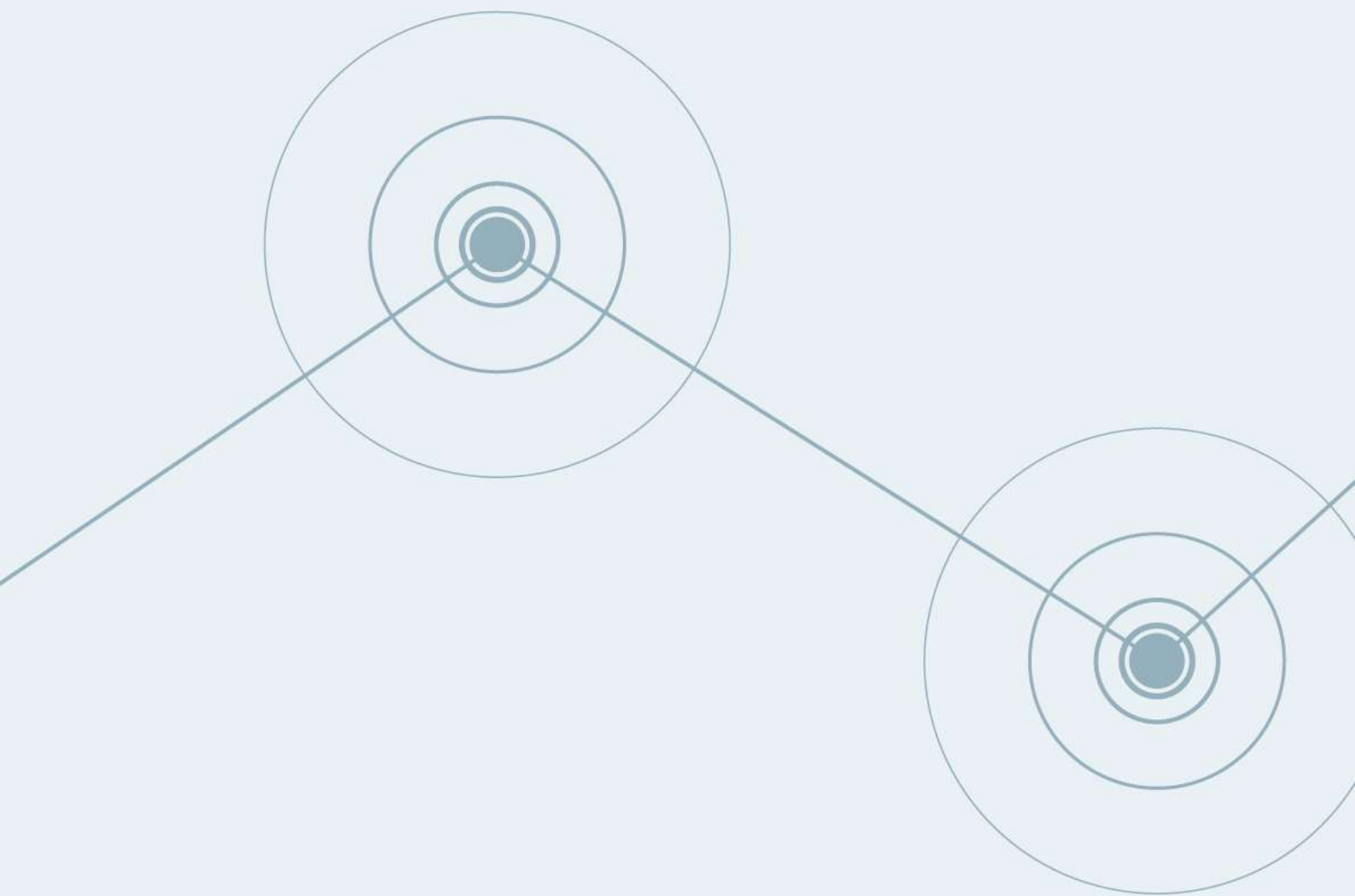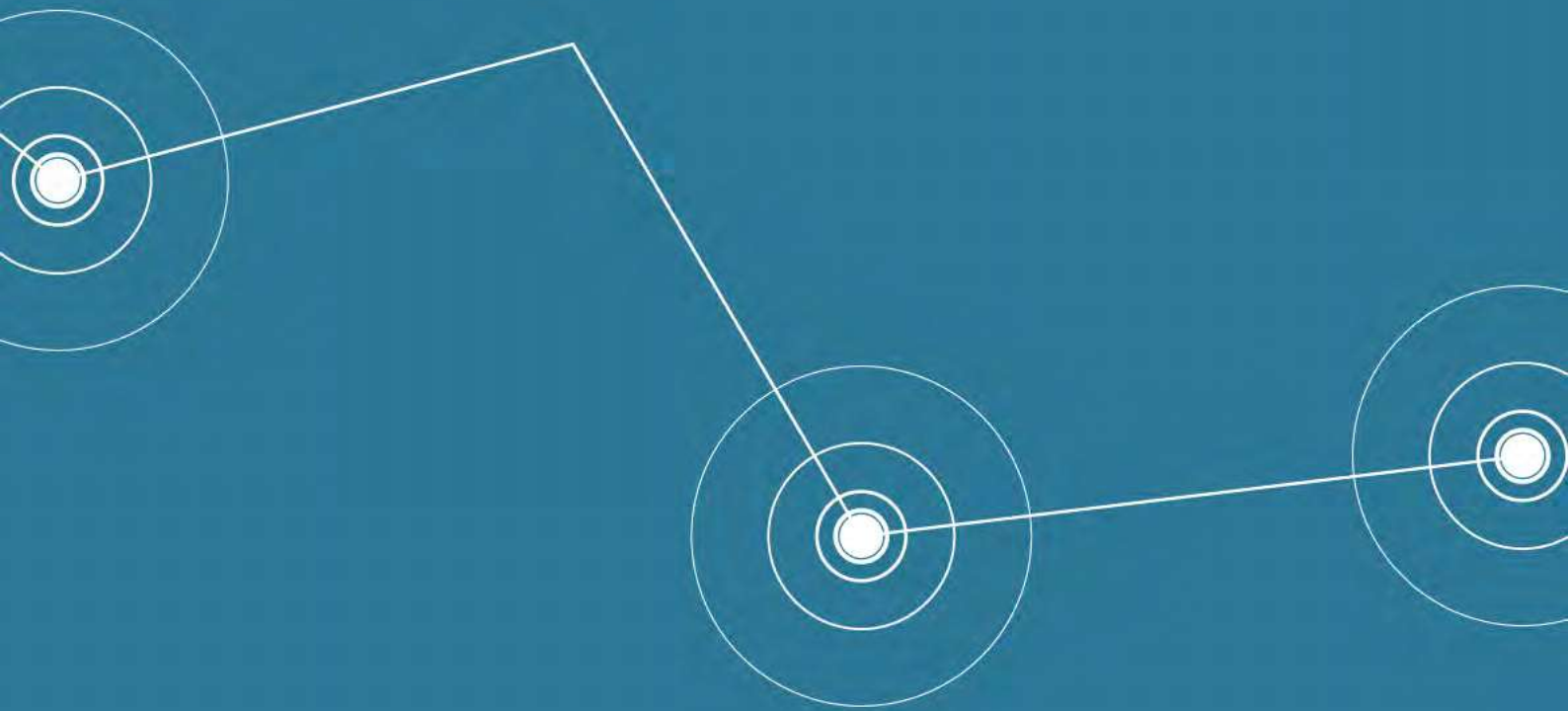
Health outcomes

⊚ Noncommunicable diseases are the leading causes of death, especially stroke, ischaemic heart disease and lung cancer.

⊚ The top-six leading causes of years lived with disability in 2017 included lower back pain, falls, diabetes, headache disorders, age-related hearing loss and depressive disorders.

⊚ Smoking is the number one risk factor driving most deaths and disability both for men and women. Lung cancer is also the leading cause of cancer-related deaths.

⊚ Other leading behavioural risk factors include dietary risks and alcohol use, and leading metabolic risk factors include high blood pressure, high fasting plasma glucose and high body mass index.

Leading causes of death

The top-10 causes of death in Montenegro are all related to noncommunicable diseases

Noncommunicable diseases (NCDs) cause most deaths in Montenegro, mostly cardiovascular diseases and cancer (Fig. 4). In 2016, NCDs accounted for an estimated 95% of all deaths *(23)*. Women have a slightly greater risk of dying from cardiovascular diseases than men (62% and 54% of total deaths, respectively). Although cancer is the second leading cause of death for both men and women, men are affected to a greater extent (25% and 18% of total deaths, respectively). Between 2007 and 2017, the top-10 leading causes of death have remained the same, although with the largest increases in atrial fibrillation (43% change) and Alzheimer's disease (42% change) (Fig. 5).
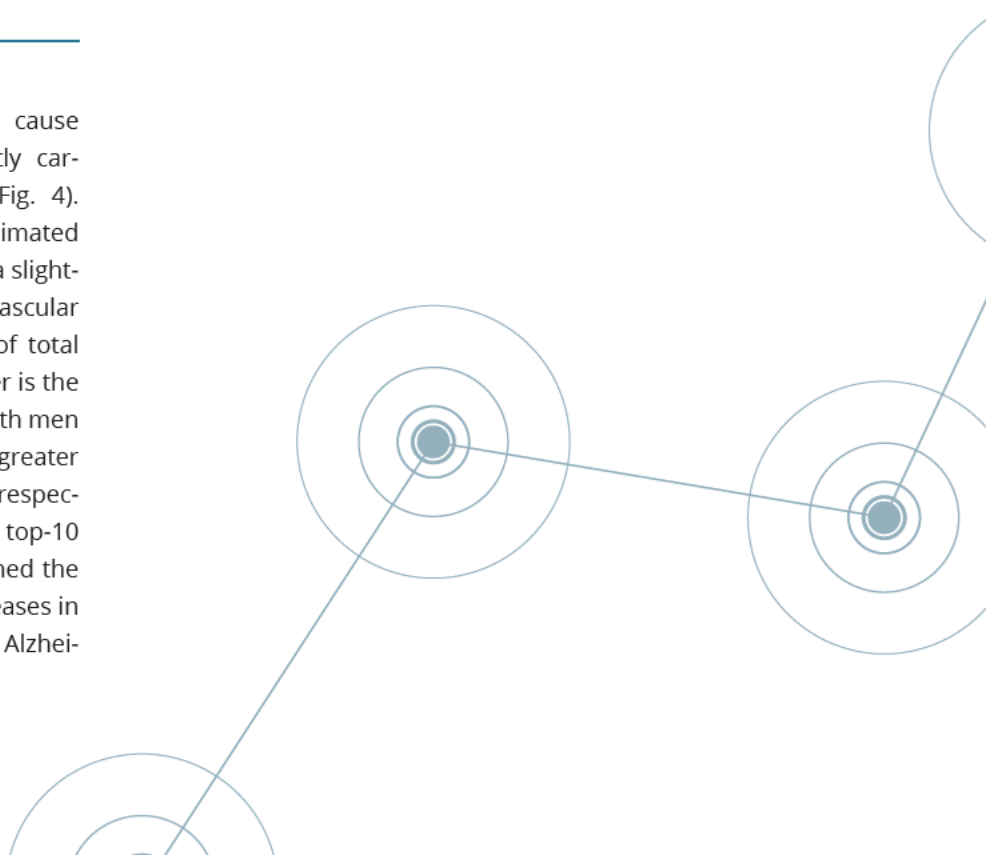
Fig. 4. Cardiovascular disease and cancer are the leading causes of death for both men and women

Women
Number of deaths: 3112 (2017)

Men
Number of deaths: 3390 (2017)

Cardiovascular diseases | Cancer | Respiratory diseases | Digestive system | Injuries | Other causes
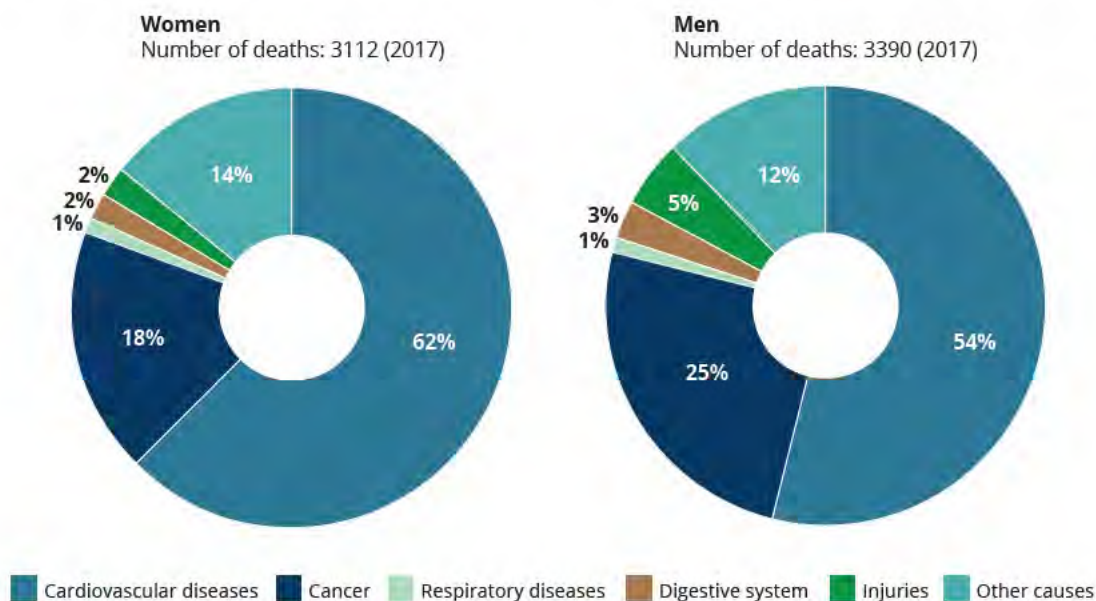
Source: IHME *(18)*.

Fig. 5. Over the past 10 years, atrial fibrillation and Alzheimer's disease have had the greatest increases among the 10 leading causes of death

2007 ranking		2017 ranking	% change 2007-2017
Stroke	1 → 1	Stroke	9.8%
Ischemic heart disease	2 → 2	Ischemic heart disease	7.9%
Lung cancer	3 → 3	Lung cancer	13.4%
Alzheimer's disease	4 → 4	Alzheimer's disease	41.9%
Cardiomyopathy	5 → 5	Cardiomyopathy	28.8%
Diabetes	6 → 6	Diabetes	10.2%
Colorectal cancer	7 → 7	Colorectal cancer	22.0%
Chronic kidney disease	8 → 8	Atrial fibrillation	42.9%
Breast cancer	9 → 9	Chronic kidney disease	10.1%
Atrial fibrillation	10 → 10	Breast cancer	6.4%

Notes: top 10 causes of death in 2017 and percentage change, 2007–2017, all ages, number.

Source: IHME *(18)*.

Burden of disease and disability

Stroke and ischaemic heart disease are leading causes of death for men and women

Cardiovascular diseases are the leading cause of death (Fig. 5) and disability-adjusted life-years (DALYs); specifically stroke (14% of total DALYs) and ischaemic heart disease (12% of total DALYs) in 2017 *(18)*. In the WHO European Region, ischaemic heart disease (12%) and stroke (6%) were also the leading causes of DALYs in 2017, although notably, the percentage of DALYs for stroke in Montenegro is double that of the European average.

Ischaemic heart disease is the number one cause of total DALYs among men, and stroke is the number one cause among women. Stroke was among the most rapidly rising causes of years of life lost since 2000.

Lung cancer is the leading cause of cancer-related deaths

After cardiovascular diseases, cancer is the leading cause of death for both men and women. In 2017, lung cancer was the third leading cause of death, contributing to 7% of all deaths that year *(18)*. In the WHO European Region, lung cancer was the fourth leading cause of death in 2017, contributing to 5% of all deaths. Importantly, the rate of DALYs caused by lung cancer in Montenegro is three times higher among men than women; 2506 versus 833 per 100 000 population, respectively *(18)*.

Type 2 diabetes is a leading cause of years lived with disease

The burden of type 2 diabetes has gradually increased since 2000. In 2017, it was the third leading cause (after lower back pain and falls) of years of life lived with disease and disorders (years lived with disability) at 6% of total years lived with disability, slightly higher than the percentage of the WHO European Region at 5% of total years lived with disability. According to 2014 data, 9% of people 18 years and older in Montenegro were reported to have raised blood glucose *(23)*.

While respiratory diseases are not among the top-10 causes of years lived with disability, in 2017 chronic obstructive pulmonary disease contributed to 3% of total years lived with disability, up 12% from 2000

In 2017, respiratory diseases were not among the top-10 leading causes of years lived with disability or DALYs. Nevertheless, chronic obstructive pulmonary disease is the leading cause of years lived with disability and DALYs for respiratory conditions and is among the most rapidly rising conditions between 2000 and 2017 *(18)*. This change is especially pronounced among men, rising to 3% of total years lived with disability (18% increase from 2000 to 2017) with women also being at 3% of total years lived with disability (6% increase from 2000 to 2017) *(18)*.

Depressive disorders are among leading causes of years lived with disability, although the accuracy of reporting remains a challenge in the entire European Region

In 2017, self-harm was among the top 10 causes of premature mortality in Montenegro, at 363 per 100 000 population *(18)*. Depressive disorders were the sixth leading cause of disability, after lower back pain, falls, diabetes, headache disorders and age-related hearing loss *(18)*. Importantly, this ranking varies for men and women: depressive disorders rank 12th for men (3% of total years lived with disability) and the fifth leading cause for women (4% of total years lived with disability) in 2017. The percentage of total years lived with disability for depressive disorders for both men and women is slightly lower (4% of total years lived with disability) than the WHO European Region average (5% of total years lived with disability), although it is widely recognized that detection and reporting across the WHO European Region is an area of ongoing improvement.

Risk factors

Smoking is a major preventable risk factor

Similar to other European countries, Montenegro has a high prevalence of behavioural risk factors. Tobacco accounts for 24% of the overall burden of disease in 2017 (measured in DALYs) *(18)* (Fig. 6). Dietary risks and alcohol use are also among the top three behavioural risk factors *(18)*. In 2016, an estimated nearly 60% of the population (18 years and older) was overweight and 23% obese *(23)*.

According to a 2012 household survey, the prevalence of smoking among people 15 years and older was 31% (35% for men and 27% for women). Compared with 2013 data for the WHO European Region, the prevalence of smoking is slightly above the WHO European Region average at 29% but below that of SEEHN countries (33%) *(3)*. According to more recent WHO data from 2016, 48% of men and 44% of women 15 years and older reported currently smoking, for an average of 46% of people 15 years and older *(23)*.

Fig. 6. Tobacco and dietary risks are the top behavioural risk factors for men and women
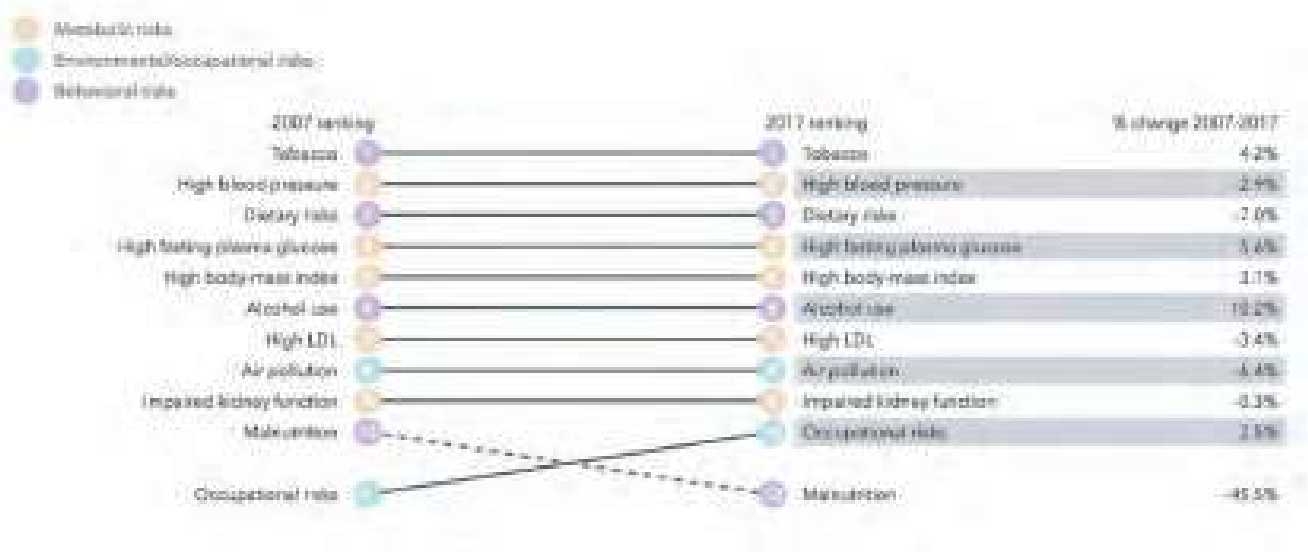
Source: IHME *(18)*.

Other behavioural risk factors include dietary risk and alcohol use (Fig. 6). According to WHO data, in 2016 the total per capita alcohol consumption of people 15 years and older was 13 litres (of pure alcohol) for men and 3 for women *(23)*. The three leading metabolic risk factors include high body mass index, high fasting plasma glucose and high systolic blood pressure.
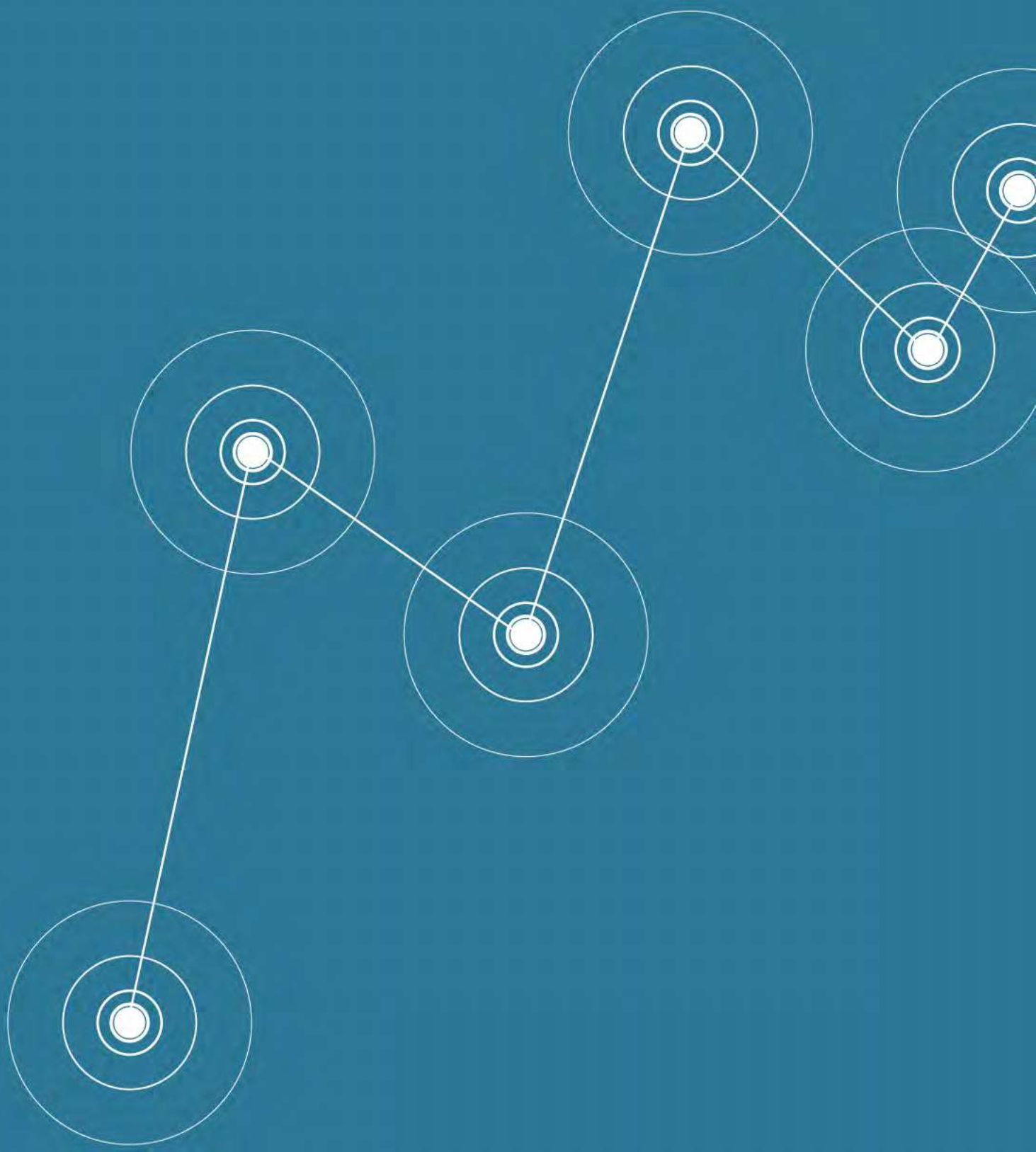
Performance of primary care

◉ The top six ACSCs leading to hospitalization are pneumonia, angina, chronic obstructive pulmonary disease, ear, nose and throat infections, diabetes complications and hypertension. They account for 67% of the total of hospitalization for ACSCs.

◉ Hospitalizations for ACSC are higher among men than women.

◉ The older population has the highest rates of hospitalizations for the top-six ACSCs, especially angina, hypertension and diabetes complications.

◉ Estimates of the coverage of services signal important areas of focus for services currently unavailable in primary care, specifically, quitline services and specialized tobacco dependence treatment, cardiovascular disease risk assessment, human papillomavirus (HPV) vaccination and screening and treatment for depression.

Quality of care for chronic conditions

Pneumonia, angina and chronic obstructive pulmonary disease were the top causes of hospitalization for ACSCs in 2017

In Montenegro, 14 434 patients were discharged from hospital for the ACSCs assessed in this study in 2016 and 14 384 in 2017 (Table 4). In 2017, the top six conditions leading to hospitalizations were the following (total number of hospitalizations):

pneumonia (2484), angina (1906), chronic obstructive pulmonary disease (1566), ear, nose and throat infections (1361), diabetes complications (1354), and hypertension (950) (24) (Table 5). Together these conditions accounted for 67% of all ACSC hospitalizations. The same conditions caused most hospitalizations in 2016, although in a different order (total number of hospitalizations): pneumonia (2181), angina (1889), diabetes complications (1675), chronic obstructive pulmonary disease (1519), ear, nose and throat infections (1480) and hypertension (980). They again accounted for 67% of all ACSC-related hospitalizations.

Table 5. Overview of the most common ACSC hospitalizations in Montenegro, 2016 and 2017

ACSCs	2016		2017	
	Number of hospitalizations	% of total	Number of hospitalizations	% of total
Pneumonia	2 181	15.1	2 484	17.3
Angina	1 889	13.1	1 906	13.3
Chronic obstructive pulmonary disease	1 519	10.5	1 566	10.9
Ear, nose and throat infections	1 480	10.3	1 361	9.5
Diabetes complications	1 675	11.6	1 354	9.4
Hypertension	980	6.8	950	6.6
Convulsions and epilepsy	666	4.6	710	4.9
Kidney and urinary infection	655	4.5	685	4.8
Iron deficiency	648	4.5	645	4.5
Congestive heart failure	525	3.6	582	4.0
Asthma	463	3.2	410	2.9
Gastroenteritis	318	2.2	389	2.7
Cellulitis	301	2.1	338	2.3
Perforated or bleeding ulcer	292	2.0	310	2.2
Vaccine-preventable conditions	254	1.8	114	0.8
Dental conditions	165	1.1	187	1.3
Other vaccine-preventable conditions	114	0.8	108	0.8
Gangrene	111	0.8	100	0.7
TB	90	0.6	85	0.6
Pelvic inflammatory disease	69	0.5	74	0.5
Dehydration	27	0.2	24	0.2
Nutritional deficiency	12	0.1	2	0.0
Total hospitalizations	**14 434**	**100**	**14 384**	**100**

Source: Institute for Public Health, Montenegro.

In 2017, hospitalizations were higher among men than women across all top-six ACSCs and age categories (Fig. 7). The pattern was similar in 2016. The analysis of ACSC hospitalizations by age groups shows two peaks, the first among children younger than five years. Reviewed by causes, these hospitalizations are mostly from ear, nose, throat infections and pneumonia. Importantly, hospitalizations for this age group are not mandatory. Decisions for the hospitalization of children should be based on combined consideration for the age, clinical status and possibilities for home treatment according to clinical practice guidelines. The second peak of hospitalizations is among people 60–69 years old.

Fig. 7. Men have more hospitalizations for the top-six ACSCs than women across all age categories

2016

2017
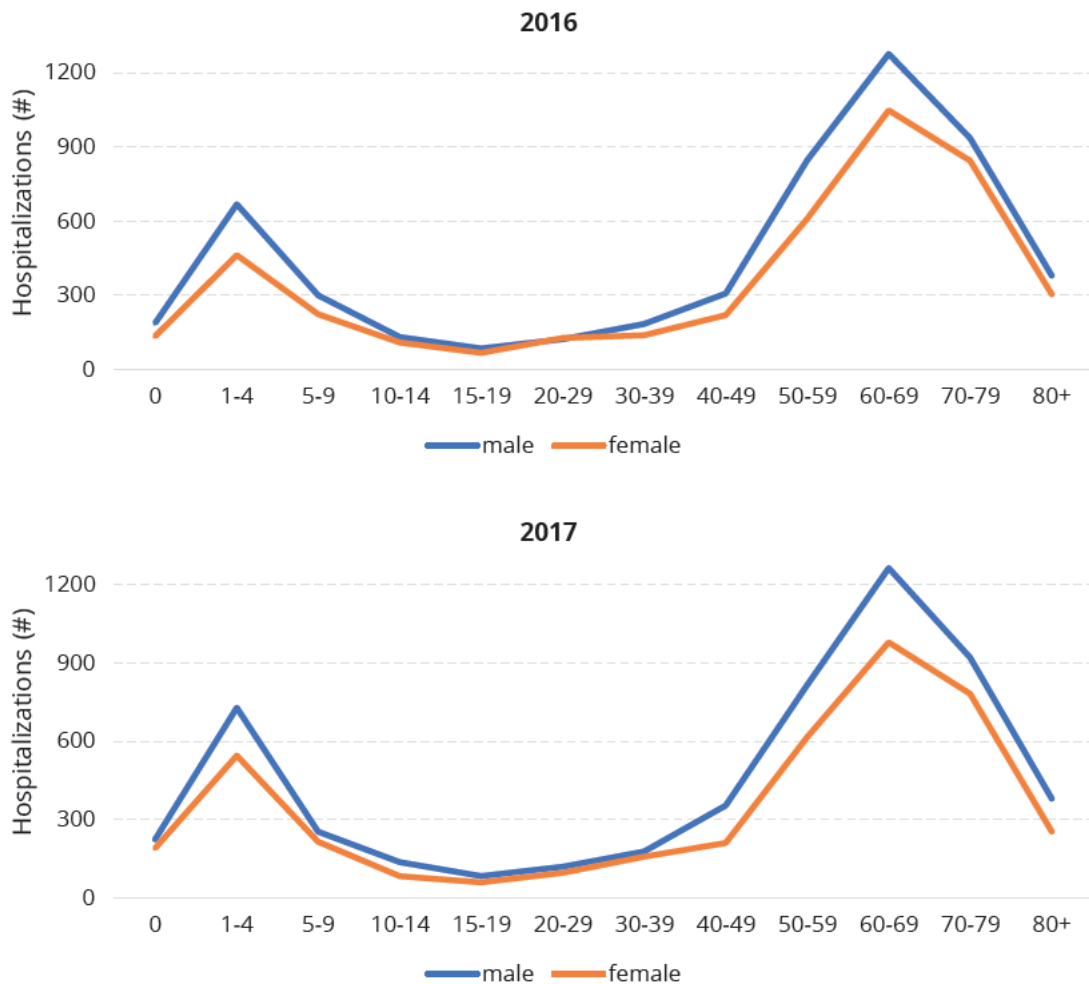
Note: top-six ACSCs by age group and sex.

Source: Institute for Public Health, Montenegro.

For the population 20 years and older, the peak in hospitalizations among people 60–69 years old results from angina, diabetes complications, pneumonia and chronic obstructive pulmonary disease (Fig. 8).

Fig. 8. Peaks in hospitalizations for the top-six ACSCs among people 20 years and older, 2016 and 2017
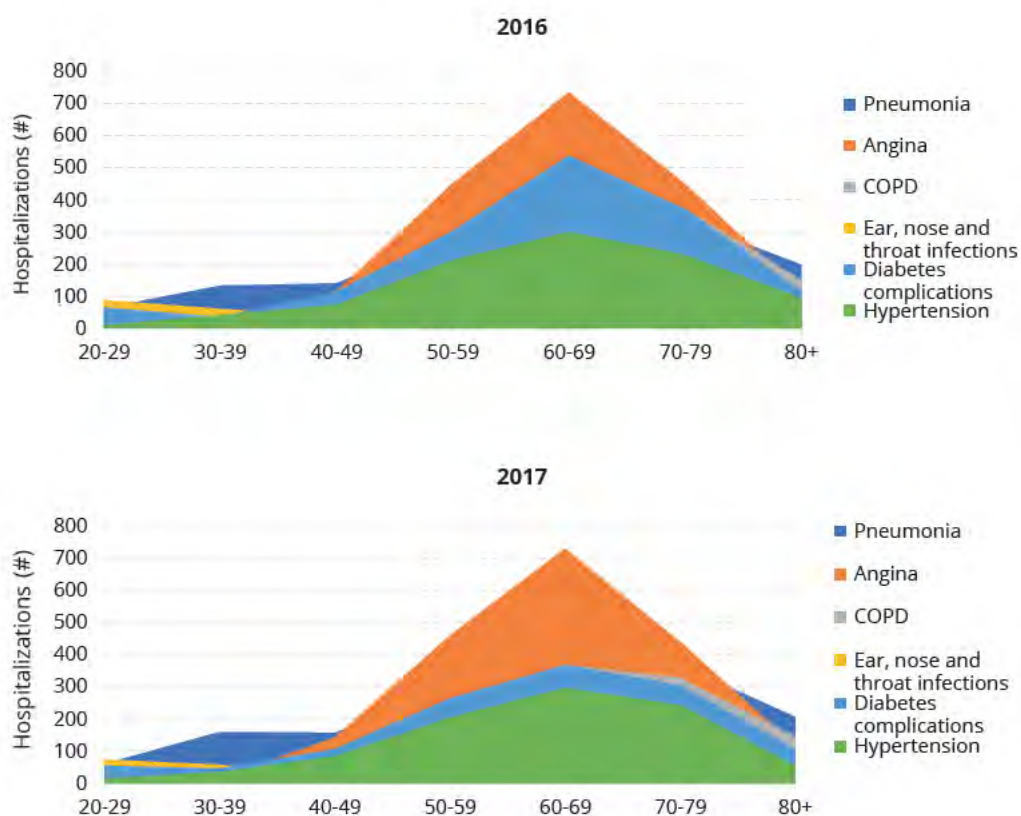
Note: top-six hospitalizations by age group. COPD: chronic obstructive pulmonary disease.

Source: Institute for Public Health, Montenegro.

Health practitioners in Montenegro estimate that more than half of the most frequent hospitalization for ACSCs could have been avoided

Based on hospitalization data for 2016 and 2017, a set of six priority ACSCs that together account for about 67% of ACSC hospitalizations in 2017 were selected for further study: ear, nose and throat infections, diabetes complications, pneumonia, chronic obstructive pulmonary disease, hypertension and angina. The number of hospitalizations for these six ACSCs were presented to health practitioners responding to the survey. The estimated avoidability of hospitalization for these conditions was calculated as an average across respondents and presented at the expert consensus workshop for validation.

According to the final estimates in this study, the average degree of preventability of hospitalization for ACSCs ranged from 36% (angina) to 68% (ear, nose and throat infections) (Fig. 9). For three conditions (ear, nose and throat infections; diabetes complications and pneumonia) the estimated share of avoidable hospitalizations is about 60%. Importantly, these estimates exclude hospitalizations for ear, nose and throat infections because hospitalizing children is mandatory.

Compared with existing studies of countries in the WHO European Region *(25–28)*, the estimated share of avoidable hospitalizations in Montenegro for diabetes (61%) is higher than in Latvia (39%) and in the Republic of Moldova (40%) but lower than in Germany (81%). The estimated shares of avoidable hospitalizations are 55% for chronic obstructive pulmonary disease and 50% for hypertension. The estimated share of avoidable hospitalizations for hypertension in Montenegro is lower than in the United Kingdom (60–90%), Portugal (66%), the Republic of Moldova (70%), Kazakhstan (75%) and Germany (83%).

Fig. 9. Estimated share of avoidable hospitalizations for the top-six ACSCs in Montenegro
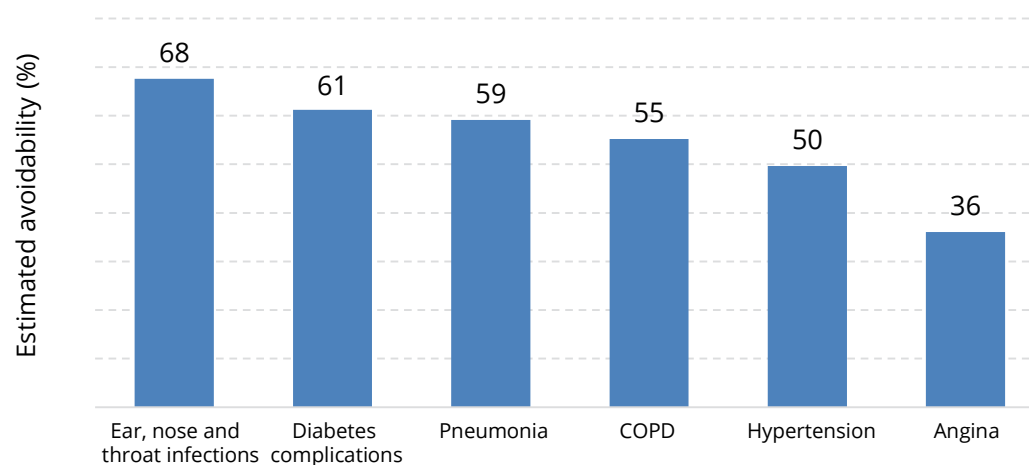
Note: Answered according to expert consensus. COPD: chronic obstructive pulmonary disease.

Estimated coverage and follow-up of services in primary care

Overall, experts estimate that chosen doctors handle 10–50% of total contacts solely without referrals to other health professionals. The consensus method applied also generated estimates for the utilization and coverage of preventive care, treatment and follow-up services (Table 6).

Table 6. Practitioner-estimated coverage of services in primary care

Tracer conditions	Not available	<10% of the target population	10–50% of the target population	More than 50% but less than 70% of the target population	≥70% of the target population
Smoking cessation	Quitline services Specialized tobacco-dependence treatment	Six-month quit rate 12-month quit rate		Counselling services	
Cardiovascular diseases	Individual risk assessment (ad hoc)		Secondary prevention/ high-risk control		Controlled blood pressure six months after treatment initiation
Cancer	HPV vaccination		Cervical cancer screening	Breast cancer screening	Colon cancer screening
Diabetes		Eye exams	Foot exams Blood glucose under control at last visit	Urine protein test	Blood pressure measurement Overweight screening
Chronic obstructive pulmonary disease				Follow-up visit for chronic obstructive pulmonary disease Lung function measurement	
Mental health	Depression treatment coverage Depression treatment follow-up				

Answered according to survey respondents and workshop participants. Annex 1 specifies the target population by the respective service.

Accordingly, for smoking-cessation services, a primary care health professional advises an estimated 50–70% of smokers 15 years and older to quit smoking, but less than 10% of smokers are estimated to quit for at least six or 12 months from these brief advice interventions. Importantly, services such as quitline services, tobacco-cessation medications and specialized tobacco treatment are reportedly not available.

For cardiovascular diseases, the greatest barrier to effective management is reportedly individual risk assessment, since respondents indicate that this service is not currently in place and provided only on an ad-hoc basis. For people identified as being at risk, practitioners estimate that 10–50% of those who are eligible receive drug therapy and counselling (including glycaemic control). For the people who are detected and registered as hypertensive, more than 70% are estimated to have a controlled blood pressure status at six months. Importantly, without a service in place for standardized risk detection, the number of people diagnosed is likely underestimated.

The practitioners estimated that more than 50% but less than 70% of people older than 18 years with chronic obstructive pulmonary disease had a follow-up visit in primary care. Similarly, the surveyed practitioners reported that more than 50% but less than 70% of the people with hypertension older than 18 years had a follow-up consultation in primary care (excluding visits only for refilling medication) in the 12-month reference period.

For people with type 2 diabetes 18 years and older, practitioners estimated that 70% or more had their blood pressure and weight screened in primary care in the previous year. Fewer (50–70%) were estimated to have had a urine protein test and foot exam and even fewer (less than 10%) an eye exam in the previous year. Ultimately, 10–50% of people with type 2 diabetes 18 years and

older are estimated to have had their blood glucose under control at their last visit.

For mental health services, chosen doctors do not provide depression treatment and follow-up. This may indicate an area of high unmet need.
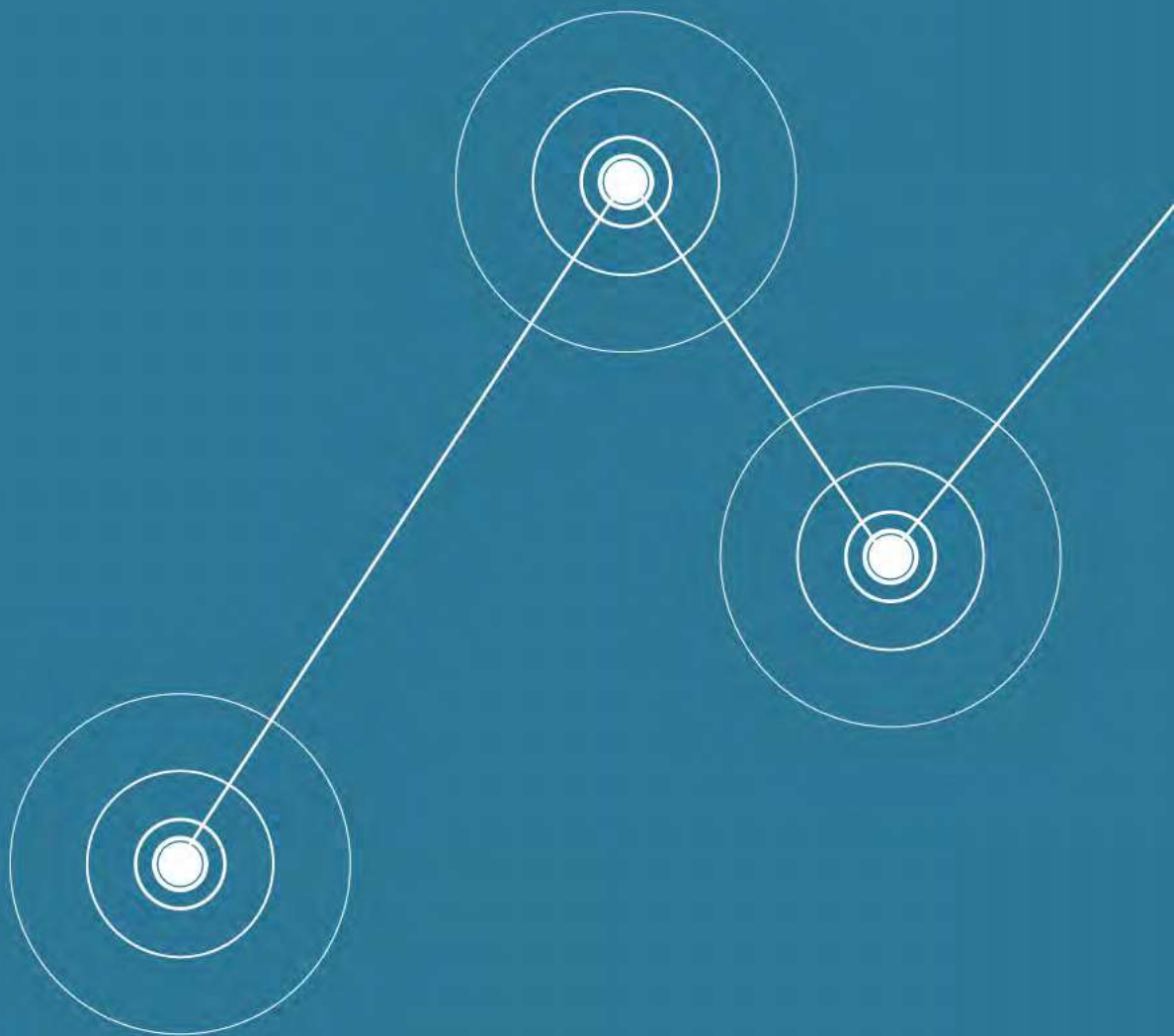
Model of care

◎ Primary care services are delivered by general practitioners (chosen doctors for adults in general, children and women (gynaecologists)); midwives (gynaecological nurses) and nurses working in primary care (patronage nurses); specialist doctors (consulting specialists); and dentists.

◎ The services available in primary care vary by type, with diverse counselling and follow-up services and, to a lesser extent, risk assessment, diagnostics and prescribing. Risk assessment in primary care is limited; primary care practitioners do not systematically provide such services as cardiovascular risk assessment and stratification and mental health risk assessment. Diagnostic examinations in primary care are also limited, and this area is currently being given priority, with attention focused on improving the training and skill set of chosen doctors.

◎ Chosen doctors act as a gatekeeper for specialist services. However, responses from practitioners indicate that patients often access specialists directly. This contributes to repeat tests and hinders coordination and continuity.

◎ Primary care practices (clinics) are organized as group practices, totalling 403 (as of 2015), comprising chosen doctors and nurses working at 18 primary health care centres across the country and supported by a range of supporting centres of consulting specialists.

Model of primary care

In 2003, the delivery of health services underwent a major reform, introducing the approach to primary care that is still in place today. Specifically, the role of chosen doctors as primary care providers equivalent to general practitioners was introduced as well as their function as the gatekeeper to the health system *(2)*. Key policy documents guiding the area of health services delivery include the Law on Health Care Protection (Official Gazette of Montenegro, No. 39/2004, 14/10) and the Law on Health Insurance (Official Gazette of Montenegro, No. 39/2004, 14/12).

The Law on Health Care Protection (Official Gazette of Montenegro, No. 39/2004, 14/10) stipulates the health professionals working in primary care. According to legislation, primary care services are delivered by (Table 7): general practitioners (chosen doctors for adults in general, children and women (gynaecologists); midwives (gynaecological nurses) and nurses working in primary care (patronage nurses); specialist doctors (consulting and supporting specialists); and dentists. Consulting specialists to primary care include social workers, psychologists, specialist doctors, physiotherapists and occupational therapists. Public health professionals working in primary care include epidemiologists and sanitary technicians.

Table 7. Types of primary health care professionals in Montenegro

Type	Local terms
General practitioners	Chosen doctors (adults)
Paediatricians	Chosen doctors (children)
Midwives	Gynaecological nurses
Nurses	Patronage nurses
Social workersa	-
Psychologistsa	-
Specialist doctors	Consulting specialistsa
Dietitian	
Physiotherapists in ambulatory settingsa	–
Occupational therapistsa	–
Dentists	–
Public health professionalsa	–
Other: gynaecologists	Chosen doctors (women)

Answered according to the policy regulating practitioners working in primary care (Law on Health Care Protection, Official Gazette of Montenegro, No. 39/2004, 14/10) and tailored to the country context according to survey respondents.

aConsulting specialists include psychologists, endocrinologists, ophthalmologists, laboratory specialists, radiologists, occupational specialists and sanitary specialists.
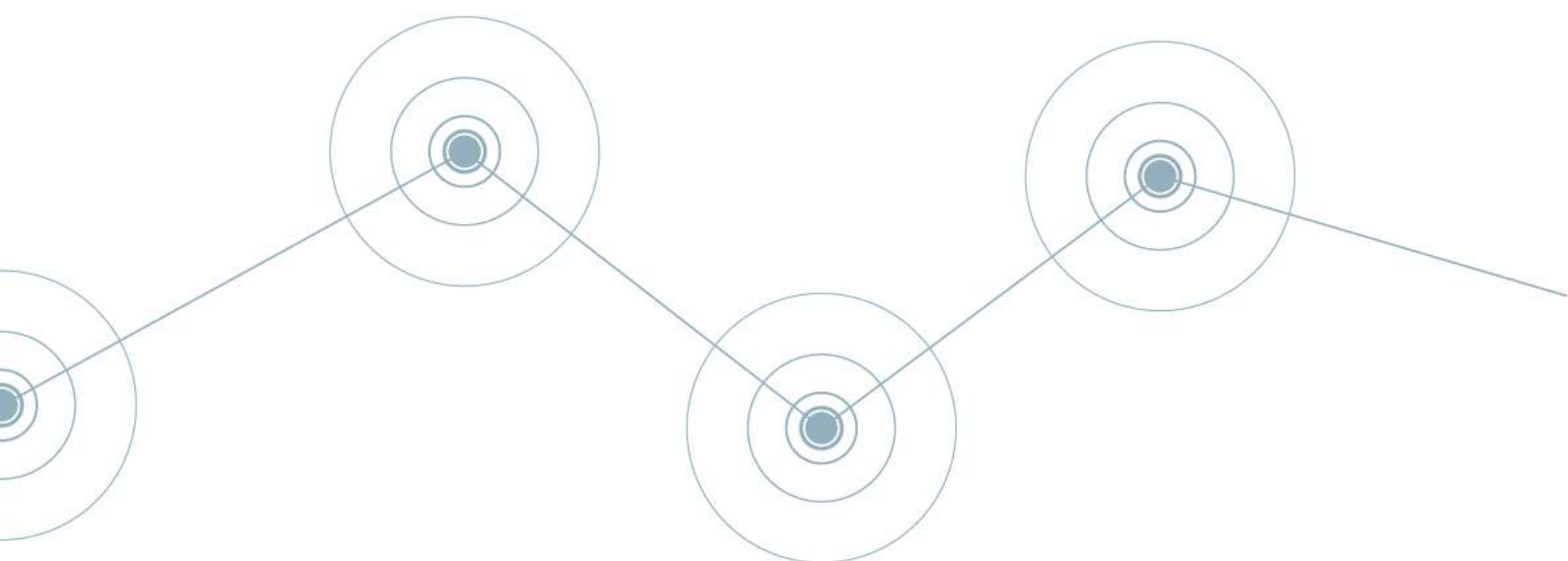
Primary care services are provided by 18 centres and a network of supporting centres with consulting specialists

In Montenegro, health services are provided at the following types of public facilities: one clinical centre in Podgorica; seven general hospitals; three specialized hospitals; and 18 primary health care centres called *dom zdravlja* (home health centres) (Fig. 10). Other public health service organizations include the Institute for Public Health, Emergency Medical Assistance, 55 public pharmacies called *Montefarm*, Institute for Health Emergencies and the Blood Transfusion Institute.

Fig. 10. Primary care services are distributed across Montenegro with priority referring facilities

- Primary care teams (403)
- Primary care centres (18)
- General hospitals (7)
- Special hospitals (3)
- Clinical centre (1)
- Regional centres (8)
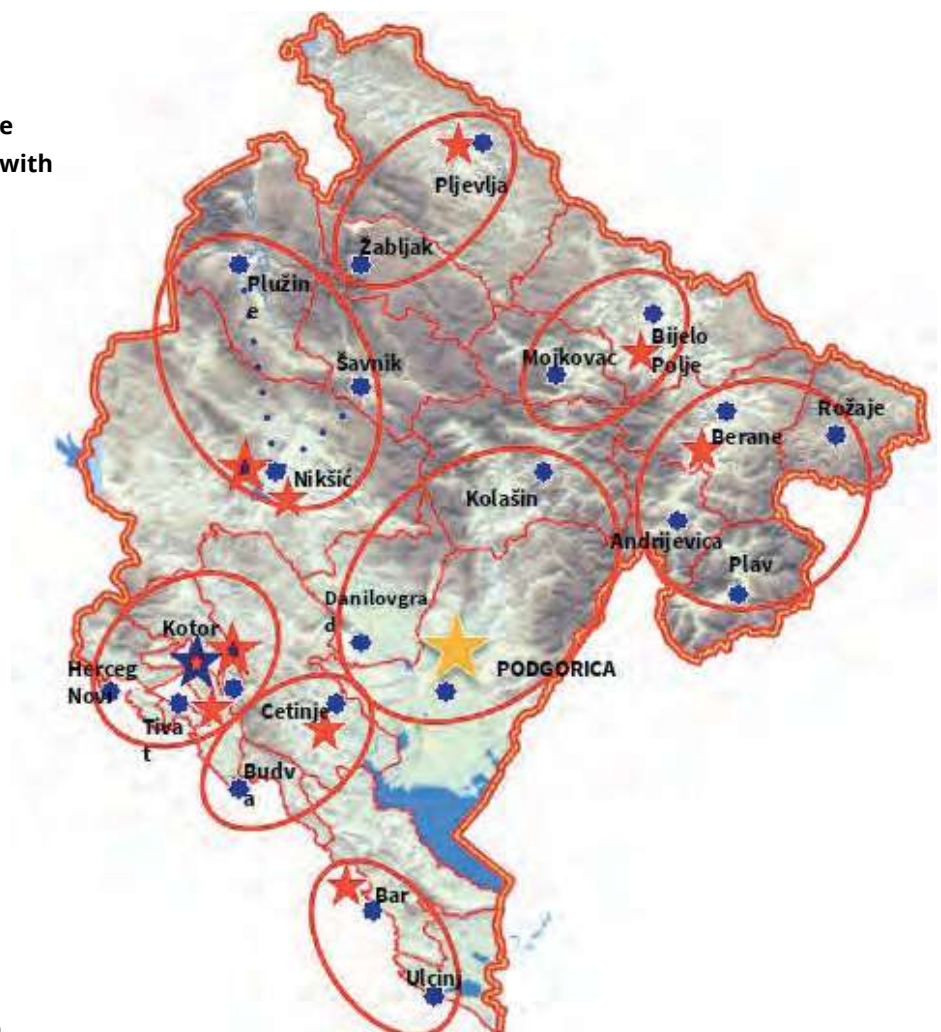
Source: Ministry of Health, Montenegro *(29)*.

Primary care services

Counselling services

A range of counselling services are offered in primary care (Table 8). These include services for tobacco, physical activity, intake of salt, consumption of fruits and vegetables, use of alcohol, bodyweight, family planning services, and psychological counselling for mental disorders.

Counselling services are predominately provided by chosen doctor, having a role in the provision of all available counselling services. Nurses are reportedly responsible to a lesser extent in the provision of counselling services. When counselling services are provided by nurses this currently takes a focus on dietary intake, with nurses at supporting centres having a role in counselling and early detection of patients with type 2 diabetes. Supporting centres are organized differently throughout Montenegro and the scope of services provided by nurses ultimately varies by facility (primary health care centre and supporting centres).

Counselling services for mental health are the role of supporting specialist. Dedicated supporting centres on mental are the primary responsible authority for the provision of psychological counselling.

Table 8. Availability and provision of counselling services in primary care

Counselling services	Available in primary care	Health professionals providing service		
		Chosen doctor	Nurse	Consulting specialist
Tobacco	Yes	×	×	–
Physical activity	Yes	×	×	–
Intake of salt	Yes	×	–	–
Consumption of fruits and vegetables	Yes	×	–	–
Use of alcohol	Yes	×	–	–
Bodyweight	Yes	×	×	–
Family planning	Yes	×	×	×
Psychological counselling for mental disorders	Yes	–	–	×

×: health professionals providing service.

Source: answered according to survey respondents and expert consensus.

Risk assessment

On a whole, risk assessment for early detection and screening is quite limited for the tracer conditions applied. There is no cardiovascular disease population risk assessment, population risk stratification or hypertension total risk approach for managing individuals at high risk of heart attack and stroke in primary care. Workshop participants described the legal requirement to report cardiovascular events to the Institute for Public Health, the responsible authority of the registry for cardiovascular disease and diabetes. This practice, however, does not capture the intention of risk assessment services intended for initial risk detection.

For mental health, risk assessments are primarily provided by supporting specialists, although HEADSS assessment (home, education and employment, eating, activities, drug use, sexual activity, suicide and depression and safety) for adolescents is not currently in use according to survey respondents and workshop participants.

For diabetes risk detection, risk prediction charts are currently provided in primary care and delivered solely by chosen doctors. Although it was recognized that nurses could provide diabetes risk detection services during home visits to patients, workshop participants described a lack of incentives to do so.

Table 9. Availability and provision of risk assessment in primary care

Risk assessments	Available in primary care	Health professionals providing service		
		Chosen doctor	Nurse	Consulting specialist
Annual physical examination or health evaluation	Yes	×	–	–
Cardiovascular disease risk assessment	No			
Cardiovascular risk stratification	No			
Hypertension detection using a risk prediction chart	No			
Type 2 diabetes detection using a total risk approach	Yes	×	×	–
Detecting TB symptoms in at-risk populations	No			
Mental health risk assessment	Yes	–	–	×
HEADSS assessment for adolescents	No			

×: health professionals providing service.

Source: answered according to survey respondents and expert consensus.

Diagnostic services in primary care

The range of diagnostic services provided in primary care is limited. Of the nine diagnostic examinations considered relevant for the tracer conditions applied, only two are available from chosen doctors (electrocardiography and peak flow measurement). Workshop participants report plans to train chosen doctors and paediatricians to deliver ultrasound services in the future.

Additional services, including dilated fundus examination, peak flow measurement, X-ray and ultrasounds are available through consulting specialists at supporting centres. This means that, for such conditions as diabetes, the clinics of chosen doctors do not perform diagnostic tests such as dilated fundus ex-

amination and Doppler ultrasound for foot vascular status, although workshop participants recognized the potential for chosen doctor providing these tests (Table 10).

Diagnostic tests performed by nurses in primary care are limited. Of the diagnostic examinations surveyed, nurses reportedly perform only electrocardiography.

Consulting specialists provide a wider array of tests at specialized centres. For example, the specialized centre for lung diseases performs several diagnostic tests, including peak flow measurement, oximetry and spirometry. Access to the lung centre requires referral from a chosen doctor and ultimately means first accurately detecting the need for these tests.

Table 10. Availability and provision of diagnostic examinations in primary care

Diagnostic examination	Available in primary care	Health professionals providing service		
		Chosen doctors	Nurses	Consulting specialists
Dilated fundus examination	Yes	–	–	×
Doppler ultrasound for foot vascular status	No			
Electrocardiography	Yes	×	×	×
Peak flow measurement	Yes	–	–	×
Pulse oximetry	Yes	×	–	–
Regular ultrasound	Yes	–	–	×
Sigmoidoscopy	No			
Spirometry	No			
X-ray	Yes	–	–	×

×: health professionals providing service.

Source: answered according to survey respondents and expert consensus.

A chosen doctor has the authority to diagnose type 2 diabetes and hypertension. For the other tracer conditions explored, a specialist doctor must confirm the diagnosis. For example, the chosen doctor's role in chronic obstructive pulmonary disease is limited to initially detecting symptoms, and a supporting centre confirms the diagnosis.

Table 11. Confirmation of diagnosis in primary care

Confirmation of diagnosis	Available in primary care	Health professionals providing service		
		Chosen doctor	Nurse	Consulting specialist
Hypertension	Yes	×	–	×
Ischaemic heart disease	Yes		–	×
Type 2 diabetes	Yes	×	–	×
Asthma	Yes		–	×
Chronic obstructive pulmonary disease	Yes	–	–	×
Cancer – breast	Yes	–	–	×
Cancer – cervical	Yes	–	–	×
Cancer – colorectal	Yes	–	–	×
TB	Yes	–	–	×
Depression	Yes	–	–	×

×: health professionals providing service.

Source: answered according to survey respondents and expert consensus.
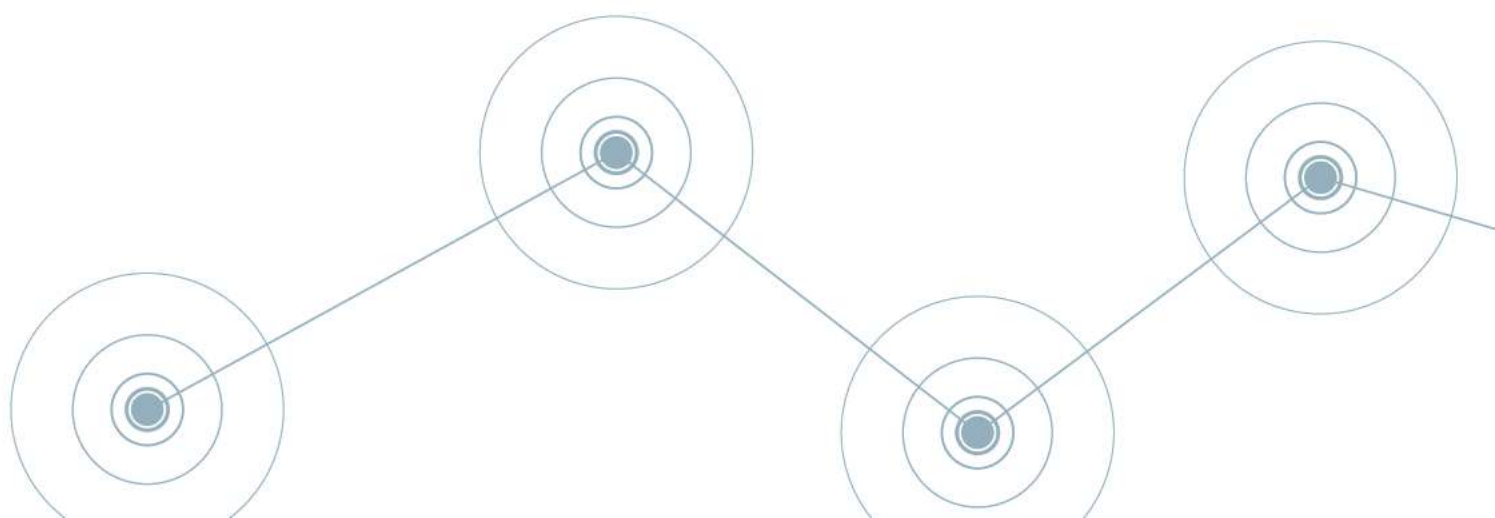
Prescribing by chosen doctors

The prescribing authority of chosen doctors was explored according to relevant medications for the set of tracer conditions studied. According to survey respondents, based on existing protocols, chosen doctors may prescribe a range of medications related to treating people with cardiovascular diseases except statins. For statins, a specialist must initially recommend prescription, and the chosen doctor may prescribe refills.

However, survey respondents and stakeholder interviews outline a situation in which chosen doctors may not carry out the initial prescriptions for most of the ACSCs. For medications related to diabetes and respiratory diseases, chosen doctors may not prescribe common medicines such as insulin and metformin for people with diabetes;

the initial prescription from a specialist is required, although chosen doctors may issue refills. Chosen doctors must refer patients to specialists for initial prescriptions.

For medications related to treating people with mental health conditions (antipsychotic agents for psychotic disorders, antidepressants for depression and anxiety disorders, anxiolytic agents and anticonvulsant medicines for bipolar disorders), initial prescriptions and refills require the recommendation of specialists. The same applies to oral morphine.

Importantly, only specialists may prescribe medications for treating people with drug-susceptible TB, and nicotine replacement therapy is reportedly not available.

Table 12. Prescribing authority of chosen doctors for medications for the tracer conditions

May prescribe and refill without recommendation from a specialist doctor	Can prescribe only with recommendation from specialist doctor but may refill without recommendation	May prescribe and refill only with recommendation from specialist doctor	May not prescribe or refill
• Aspirin as secondary prevention for individuals diagnosed with ischaemic heart disease • Angiotensin-converting enzyme inhibitor • Beta-blocker • Calcium-channel blockers • Penicillin as secondary prophylaxis for rheumatic fever and rheumatic heart disease • Thiazide or thiazide-like diuretic • Metformin • Sulfonyl urea	• Statins as secondary prevention • Insulin • Bronchodilators • Inhaled steroids	• Oral morphine • Antipsychotic agents for psychotic disorders • Antidepressants for depression and anxiety disorders • Anxiolytic agents and anticonvulsant medicines for bipolar disorder	• Nicotine replacement therapy • Treatment for drug-susceptible TB

Source: answered according to survey respondents and expert consensus.

Follow-up services

Follow-up services are provided in primary care for the tracer conditions investigated aside for depression. The chosen doctor has a predominant role in follow-up care, providing services across conditions aside from cervical cancer, TB and depression. Follow-up services for mental health are currently not provided in primary care.

Table 13. Availability and provision of follow-up services in primary care

Conditions	Available in primary care	Health professionals providing service		
		Chosen doctors	Nurses	Consulting specialists
Hypertension	Yes	×	–	–
Ischaemic heart disease	Yes	×	–	–
Type 2 diabetes	Yes	×	–	
Asthma	Yes	×	–	
Chronic obstructive pulmonary disease	Yes	×	–	
Cancer – breast	Yes	×	–	
Cancer – cervical	Yes	–	–	
Cancer – colorectal	Yes	×	–	
TB	Yes	–	–	×
Depression	No	–	–	–

×: health professionals providing service.

Source: answered according to survey respondents and expert consensus.

Design of primary care

Chosen doctors act as a gatekeeper for services offered by specialist doctors and other health professionals. A standard letter is required for the chosen doctor to refer an individual to specialized care. This letter includes the individual's identification information, reason for referral, such as investigation, diagnosis, treatment or reassurance, information related to the illness, such as history, and findings and information related to relevant investigations already undertaken. Key informants, however, note that, in practice, specialist doctors often receive patients without the relevant medical history details and they therefore often undergo repeat tests.

A standard reply letter is required when specialist doctors discharge a person from their care. The letter should include an assessment of the current patient's health problems, the investigations undertaken, the medications prescribed and the next steps in the care of the patient. In practice, key informants signal that reply letters are not consistently used. Discharge planning is required on discharge from hospital. There is not, however, any integrated health and social care plan based on need on discharge from hospital.

For most tracer conditions – breast, cervical and colorectal cancer, asthma, chronic obstructive pulmonary disease, TB and latent TB infection – there are no national or subnational guidelines that define care pathways. Cardiovascular diseases and depression have clinical guidelines. The clinical guidelines do not state clearly the role of primary care.

Organization of providers

Primary care services are organized in three main types of practices

Primary care practitioners are organized in three main ways *(30)*.

- Solo practices and group practices (chosen doctor clinics). These are chosen doctor outpatient facilities or chosen doctor teams consisting of chosen doctors for children, adults and/or women. Chosen doctor clinics are organized at the 18 primary health care centres across the country locally referred to as *dom zdravlja* (Fig. 10). Home health care services are also provided by teams of chosen doctors and nurses. Group practices of chosen doctors are organized in some health centres and allow patients to access services regardless of whether their regular chosen doctor is specifically available.

- Multi-profile practices (support centres). Chosen doctor clinics are supported by multidisciplinary teams of support centres (or guidance clinics). Support centres are organized at the local and regional level and have a mix of generalists and specialists providing support to chosen doctors. Examples of consulting specialists include the following: pulmonary diseases and TB, diagnostics, mental health, children with special needs, health promotion and reproductive health. Consulting specialists can also work in single practices, like is the case for TB specialists.

- Providers of ancillary services (support units). Under the organizational umbrella of primary care centres are also the units for patronage, physical therapy and medical transport. These varied services available are organized into eight regional networks that directly refer between primary care centres and general and specialized hospitals. At the primary care level there are also family planning counselling centres (in 17 primary health care centres) and dialysis units (in the cities of Herceg Novi, Cetinje, Plav, Rožaje, Berane).

Practice population

Primary care teams operate according to a registered list of people. Individuals are free to choose their primary care provider. However, the choice may be limited owing to a small geographical area or to a specific network of providers. Individuals can freely select their chosen doctor and have the right to change this after six months, although the extent that this occurs in practice was not assessed.

According to regulations, the number of people that may be registered with a chosen doctor varies from 1200 to 2200 (chosen doctors for adults), 1000–2000 (chosen doctors for children) and 5000–8000 (chosen doctors for women: gynaecologists). In 2015, there were 403 primary care teams, of which more than half (276) were chosen doctor practices for adults, nearly one quarter were chosen doctor practices for children (94) and the remaining were chosen doctor practices for women (33) (Table 14).

Table 14. Expected practice population and number of chosen doctor teams by type in 2015

Category of chosen doctors	Expected practice population	Number of teams
Chosen doctor for adults	1200–2000	276
Chosen doctor for children	1000–2000	94
Chosen doctor for women	5000–8000	33
	Total	**403**

Source: Institute of Public Health.
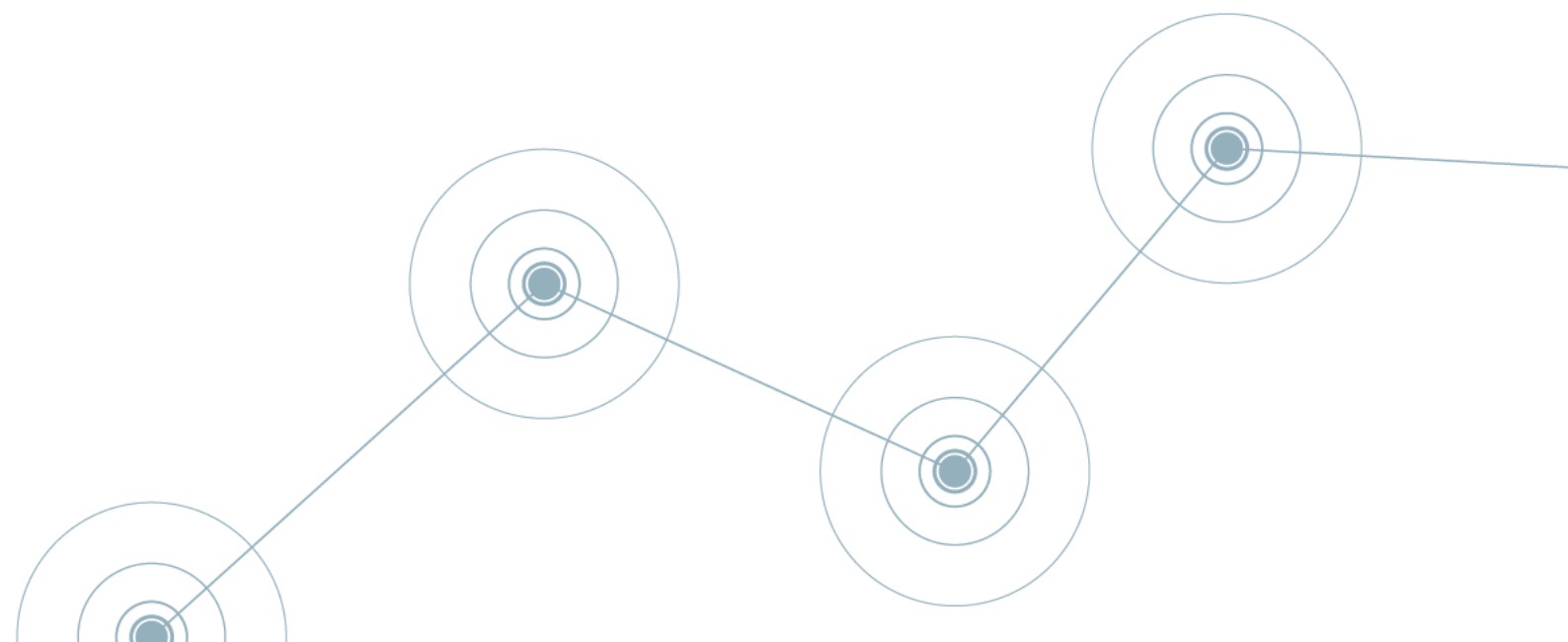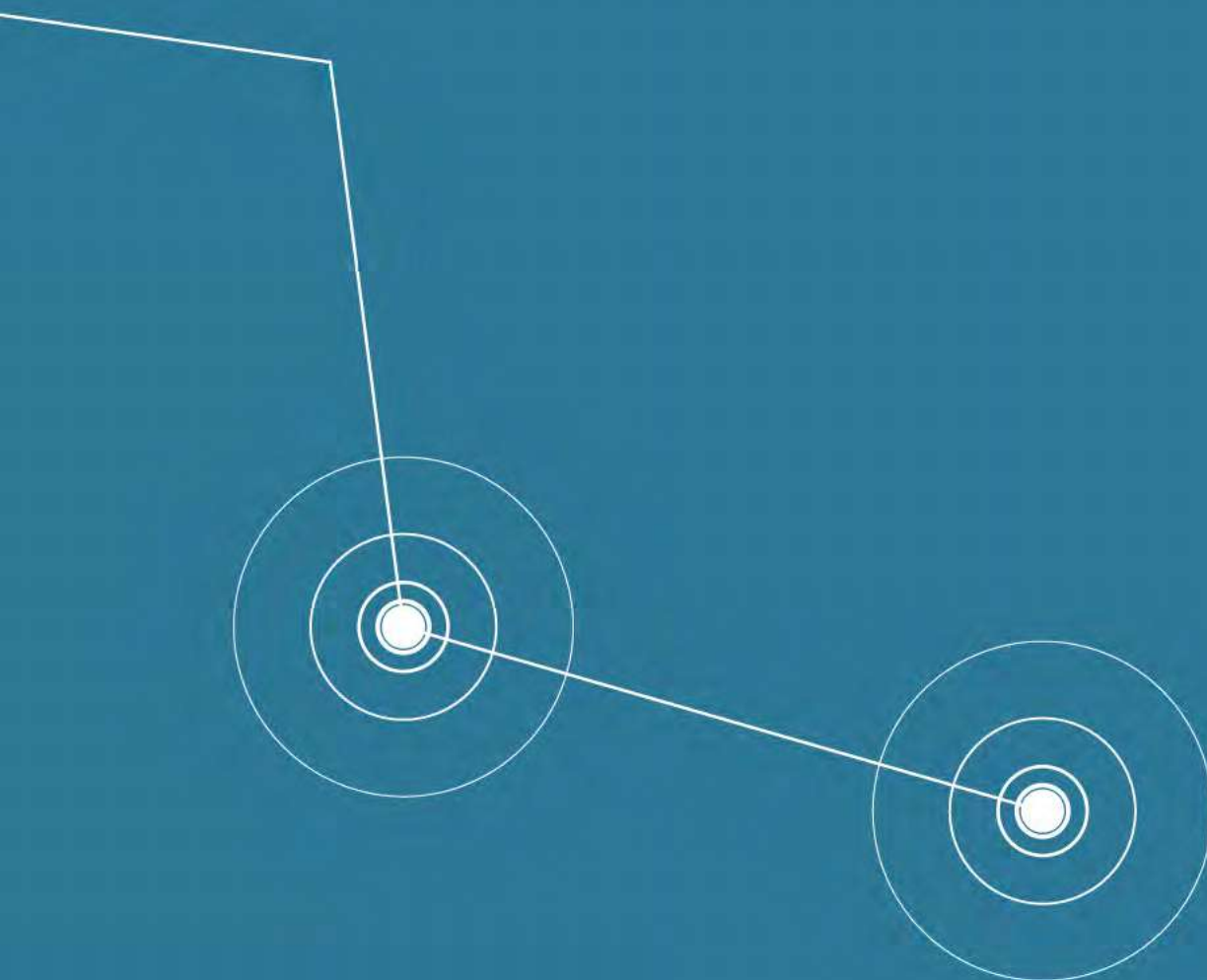
System structures

◎ Evidence-informed clinical guidelines are available for cardiovascular diseases, acute ischaemic stroke, arterial hypertension and depression. Referral criteria, however, are not part of the guidelines.

◎ Montenegro has 43 general practitioners (chosen doctors) per 100 000 population, lagging behind the averages of SEEHN countries (52) and European Union countries (80).

◎ Chosen doctors generate about half their revenue through capitation adjusted by geographical location (rural versus urban) and the other half by billing for predefined services.

◎ A health information system is in place in primary care for all health centres and private dental clinics contracted by the Health Insurance Fund and the Department of Emergency Medical Care.

◎ The limited ability of chosen doctors to prescribe certain medicines for chronic conditions and NCDs leads to avoidable referrals to specialized care.

Primary care clinical guidelines

All available guidelines are published on the website of the Ministry of Health *(31)*. In 2012, evidence-informed clinical guidelines were published for the prevention of cardiovascular diseases, acute ischaemic stroke and arterial hypertension. In 2017, an evidence-informed guideline for depression was developed.

The competent authorities have not approved any evidence-informed guideline, protocol or standard for managing (diagnosis and treatment) people with diabetes, cancer, chronic respiratory disease, TB and latent TB infection in primary care. Doctors refer to international recommendations. For example, a guideline for diabetes care is currently being developed. It is being adapted from the Scottish guidelines. Therefore, there are no standard criteria for referring patients from primary care to specialized care. The available guidelines do not contain standard criteria for referrals.

Most of the survey participants (85%) were aware of the existing guidelines for cardiovascular diseases. Only 53% of the respondents, however, knew about the existing guideline on depression. For all other tracer conditions (diabetes, cancer, chronic respiratory disease, TB and latent TB infection), relatively few of the survey respondents could accurately report the existence or not of specific guidelines: 62% for diabetes, TB and latent TB infection, 50% for cancer and 29% for chronic respiratory disease.

Primary care workforce availability

In 2015, 7476 people were employed in public health facilities; about 78% were health practitioners. The primary care workforce represents about 38% of the total health workforce according to national statistics.

Between 2005 and 2015, the number of chosen doctors grew, although not steadily. It grew from 2005 to 2008, followed a roughly U-shaped trend between 2008 and 2013 and grew again from 2014. In 2015, Montenegro had 43 chosen doctors per 100 000 population. Over time, Montenegro lags behind the averages of the SEEHN countries and the European Union member countries with 52 and 80 general practitioners per 100 000 population, respectively (Fig. 11).

The number of nurses follows a similar pattern as the number of chosen doctors.

Data on the number of nurses are reported as the total number of nurses and therefore do not indicate the number of nurses working in primary care. This total number of nurses grew slightly between 2005 and 2009, fell between 2010 and 2012, grew again until 2014 and then fell slightly in 2015. In 2015, 3346 nurses were reported *(3)*.

Over time, Montenegro has experienced internal migration of the health workforce from the public sector to the private sector. No statistics are available to confirm this trend nor is there information on the type of health workers leaving the public sector.

The number of health professionals varies across Montenegro's municipalities. In 2018, the availability of doctors and other health professionals was unequally distributed across municipalities. Access to primary care depends on the geographical location (Table 15).

Fig. 11. General practitioners per 100 000 population
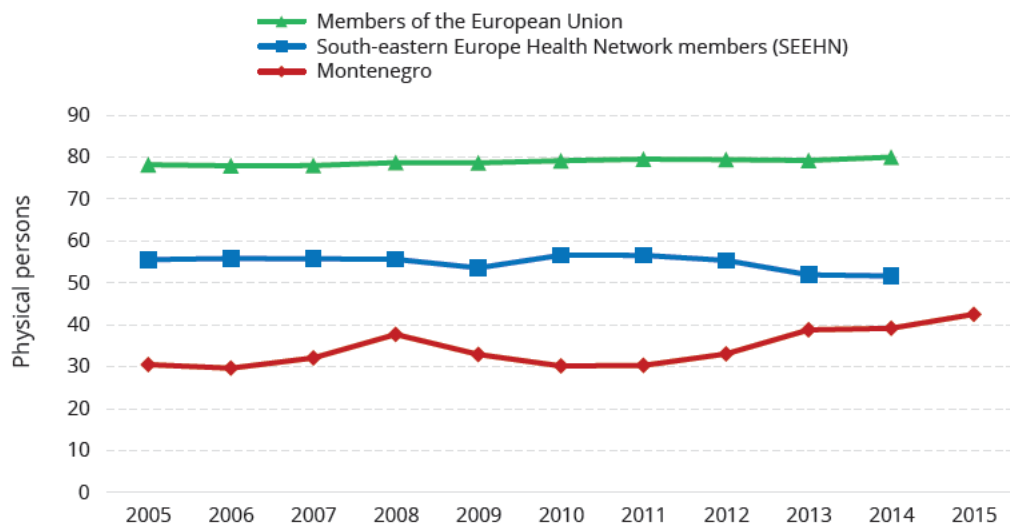
Source: European Health for All database [online database] *(16)*.

Table 15. Population coverage for primary care, 2018

Municipality	Number of doctors	Number of health professionals with higher and secondary education	Number of inhabitants per doctor in outpatient care	Number of inhabitants per health worker with higher and secondary education
Andrijevica	5	17	941	277
Bar	40	60	1097	731
Berane	34	52	945	618
Bijelo Polje	41	70	1044	612
Budva	25	53	862	407
Cetinje	19	37	808	415
Danilovgrad	19	32	961	571
Herceg Novi	24	57	1277	538
Kolašin	9	25	822	296
Kotor	21	32	1080	709
Mojkovac	12	39	646	199
Nikšić	56	92	1244	757
Plav	17	50	734	250
Pljevlja	29	47	949	586
Plužine	1	9	2688	299
Podgorica	162	240	1233	832
Rožaje	29	59	796	391
Šavnik	2	8	842	211
Tivat	14	23	1066	649
Ulcinj	23	40	876	504
Žabljak	3	6	1053	526
Total	**585**	**1048**	**1064**	**594**

Source: Institute for Public Health, Montenegro.

Provider payment mechanisms in primary care

Since 2007, the 18 primary health care centres have been funded through a combination of capitation (roughly 50% of income), fees for services and adjustments for geographical location. Chosen doctors working in rural areas receive higher capitation fees than those working in urban areas. Chosen doctors generate half of their revenue through capitation and the other half by billing for predefined services *(32)*.

Financial incentives in the form of pay for performance have been tested in primary care. In 2013, a World Bank project to improve the financial basis of the health system included introducing pay for performance in primary care. The project called for the extended use of performance pay in primary care but recognized the need for additional mechanisms for accountability and monitoring, citing collective bargaining agreements as an issue among participating doctors *(33)*.

Data capture and information flows

Since 2004, Montenegro has invested in developing an integrated health information system connecting the Health Insurance Fund, primary care, pharmacy activity, dentistry in primary care, general hospitals, the Institute for Emergency Medical Assistance, the Blood Transfusion Institute, the Institute for Public Health and the Agency for Medicines. Individual electronic services were also developed to support the electronic data exchange (eHealth) *(4)*. Fig. 12 illustrates the type of information and their flows.

Each individual has an electronic health record that is accessible to all health professionals, organizations and institutions connected to the information system. Primary care facilities (clinics and health care centres), hospitals and emergency care use the electronic health records. Specialized care and referral from primary and specialized care do not yet use electronic health records *(4)*.

**Fig. 12. Flows in the health information system**
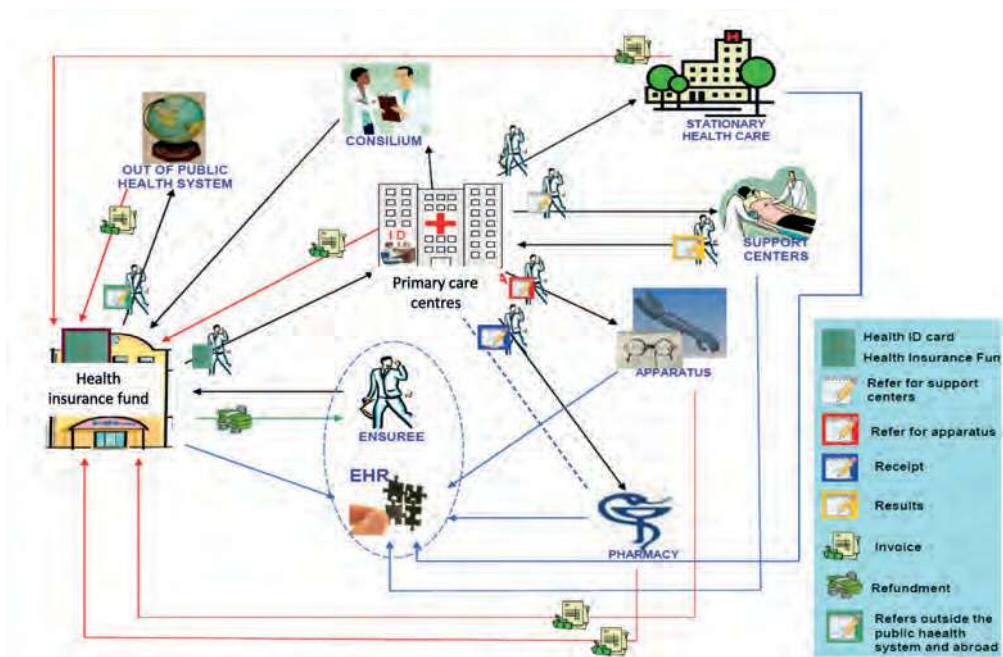
Source: adapted from the Health Insurance Fund (2010).

Since 2013, registries for cancer, diabetes, acute coronary syndrome and cerebrovascular disease have been established *(4)*. More comprehensive data from these registries are expected in the coming period. Other registries *(14)* are for communicable diseases, drug abuse and cardiovascular diseases.

Primary care medicines

In 2018, the positive list of medicines had 1156 medicines available publicly through the Health Insurance Fund. The list has been recently expanded with 114 new medicines that cover a wide range of diseases: hypertension, diabetes, cancer, thrombolytic therapy, new medicines for infectious diseases such as HIV and hepatitis C, medicines for transplantation, autoimmune diseases and mental disorders. Nevertheless, which medicines on the list chosen doctors may prescribe is unclear.

Prescribing data for primary care were not available for analysis. Nevertheless, the importance of prescribing practices in primary care is recognized, especially given antimicrobial resistance. In general, general practitioners have been found in previous studies to issue about 80–90% of all antibiotic prescriptions, making it a high-volume activity *(39).* Further efforts are needed to improve the available data and understanding of the current context.
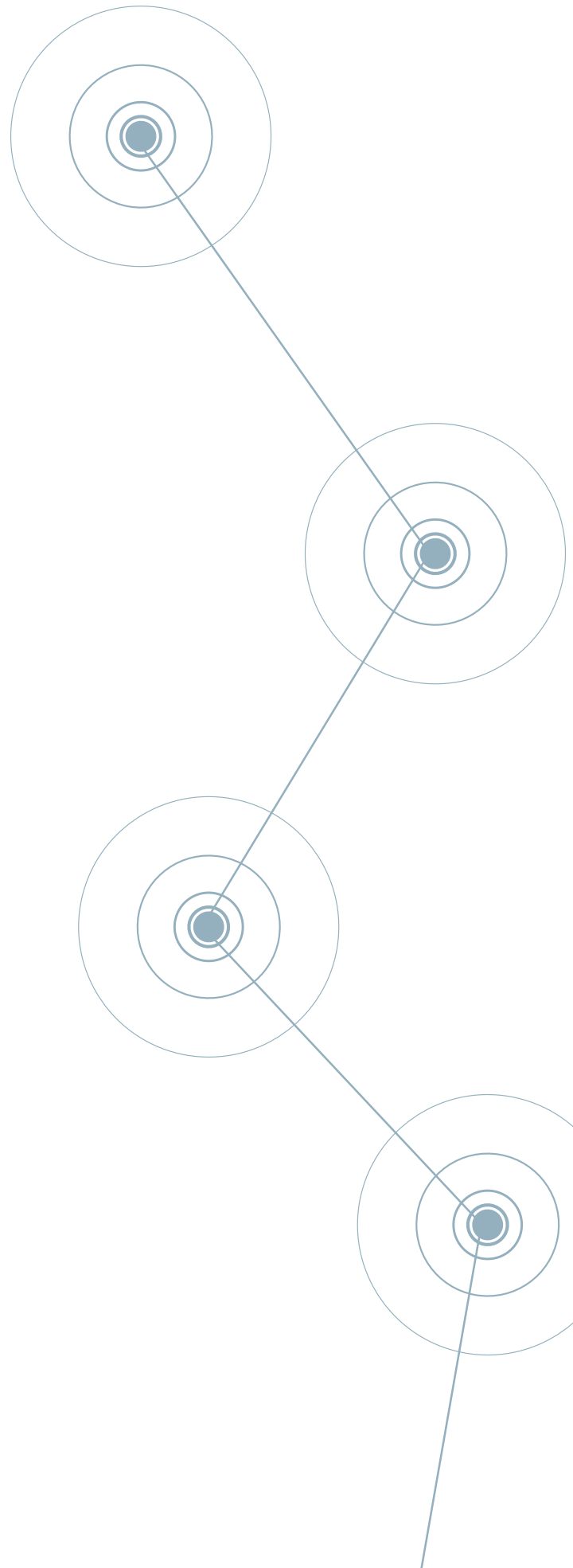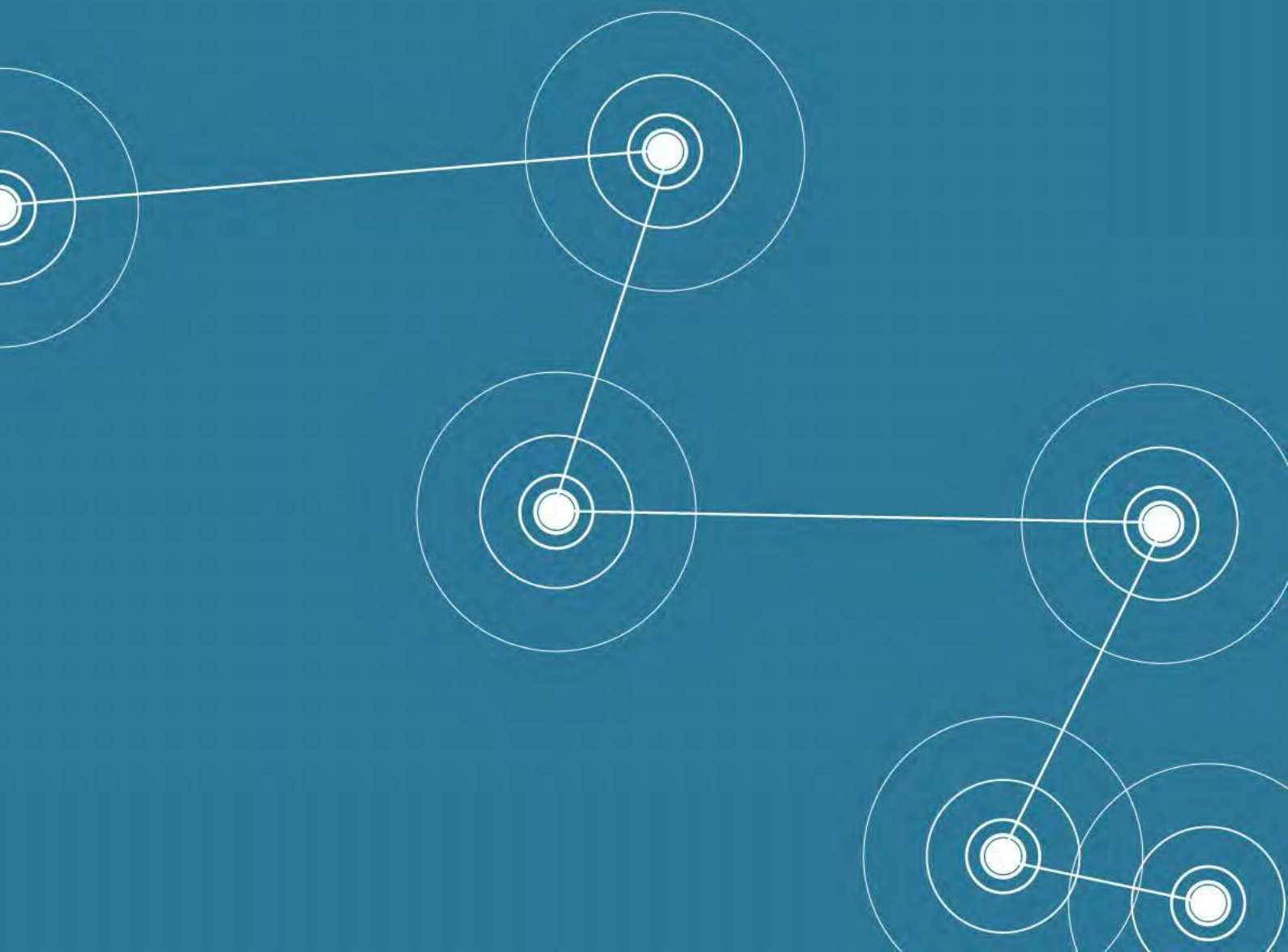
Highlights

The current model of primary care and system structures is conducive to referrals to specialized levels of care and avoidable hospitalizations

According to practitioners' estimates, ensuring quality primary care services could avoid more than half of all hospitalizations. The following cross-cutting themes were repeatedly signalled as related areas contributing to performance and health outcomes.

NCDs are the leading contributor to the burden of disease, which requires bolstering the disease prevention function of primary care and risk assessment and diagnosis

NCDs account for an estimated 95% of all deaths in Montenegro. Cardiovascular diseases and cancer cause the largest share of total deaths for both men and women. Specific causes include stroke, ischaemic heart disease and lung cancer. However, risk assessment services, especially for cardiovascular diseases, are among the most pronounced gaps in the services provided in primary care for the tracer conditions assessed (Fig. 13). The absence of clinical guidelines in primary care likely contribute to unnecessary referrals to secondary care for (chronic) conditions for which chosen doctors and nurses could provide treatment.

Fig. 13. Overview of the availability and provision of services by primary care practitioners
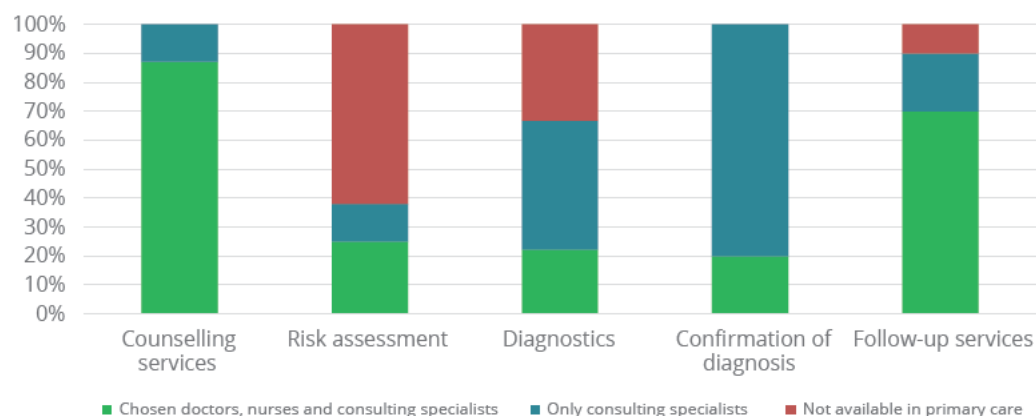

According to the services for tracer conditions surveyed. See Annex 1 for full details.

Source: answered according to survey respondents and expert consensus.

Fig. 14 specifically examines services for cardiovascular diseases, including initial prescribing for relevant medications. The cascade further illustrates the lack of risk assessment services in primary care as a critical bottleneck for initially detecting people at risk of hypertension and ischaemic heart disease. The role and scope of primary care in mental health services is also limited.

Fig. 14. Cascade of cardiovascular disease services in primary care
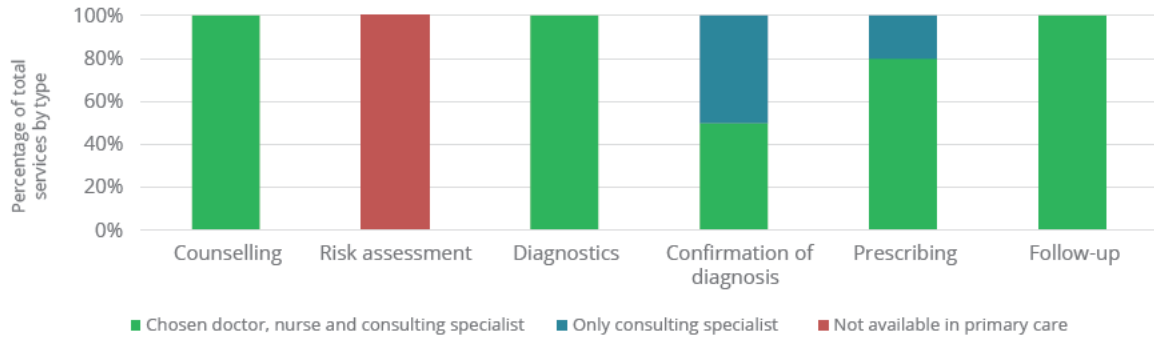
Note: according to services for tracer conditions surveyed. See Annex 1 for full details.

Source: answered according to survey respondents and expert consensus.

Smoking is a major preventable behavioural risk factor with important potential for improvement

The risk factors identified are predominantly behavioural, especially smoking. Tobacco-related conditions are an important cause of morbidity and mortality in Montenegro. Bottlenecks identified include gaps in system structures; specifically, the lack of evidence-informed clinical guidelines or protocols hinders services such as delivering brief tobacco interventions, quitline counselling and delivering specialized interventions to treat tobacco dependence. There is also a reported lack of training for health professionals to provide tobacco-cessation services.

According to the health practitioners surveyed, chosen doctors record tobacco-use status in individual medical records, and most offer self-help materials for tobacco cessation. However, interventions beyond counselling are not available in primary care, and in effect, chosen doctors may not prescribe nicotine replacement therapy. Quitline services are also reportedly not available. The quit rate for 6 and 12 months of less than 10% for smokers 15 years and older according to practitioner estimates further underscore this area for both services delivery and system interventions.

The response capacity of chosen doctors is limited to counselling and follow-up

Chosen doctors have a prominent role in providing counselling services and follow-up but are limited in their capacity to provide risk assessment and diagnosis and to confirm the diagnosis for the tracer conditions investigated (Fig. 15). Specialist doctors play a prominent role in diagnosis and confirming diagnosis.

These findings are consistent with reflections from practitioners on the tendency for people to directly access specialist doctors, despite the gatekeeping system. The combined absence of early risk detection and diagnostic tests ultimately compromises the leading role of chosen doctors in providing services for conditions amenable to the quality of primary care services.

Initial prescribing and diagnostic tests by chosen doctors are also limited for some tracer conditions

The scope of practice for chosen doctors for prescribing and diagnostic tests is especially narrow for mental health needs, nicotine replacement therapy, diabetes and respiratory-related medication. This can contribute to otherwise avoidable referrals to higher levels of care.

**Fig. 15. Scope of practice of primary care practitioners**

According to the services for tracer conditions surveyed. See Annex 1 for full details.

Source: answered according to survey respondents and expert consensus.

The scope of practice of nurses is limited despite the available workforce

The study signals that nurses working in primary care (patronage and gynaecological nurses) primarily complete administrative roles with limited or no role in providing services beyond counselling. Survey respondents identified the important yet underutilized role of nurses as a key area for attention. Further, the shortages of chosen doctors in some municipalities require viewing the availability of the existing nursing workforce as a resource to be used. In this regard, investing in the competencies and installing the supportive structures for nurses working in primary care require investment.

Lack of professional accountability to the population of primary care practices appears to be a symptom of misaligned incentives and information flows

This study did not investigate in detail the management and quality improvement of primary care services. Nevertheless, in addition to the identified services delivery interventions that could be improved (such as individual risk profiling and population stratification), there appears to be a general absence of professional accountability of primary care practices to their assigned practice population. A lack of financial incentives for this was signalled as a relevant and contributing factor to the current situation. Moreover, although information flows have been improved and continue to advance as this information system develops, the extent to which these data are used is not clear.
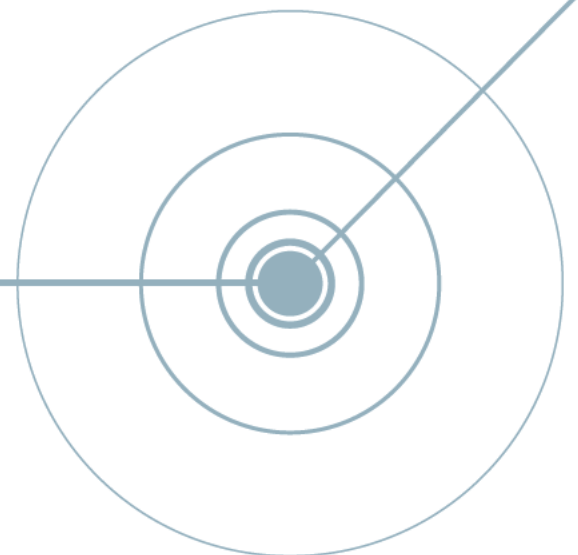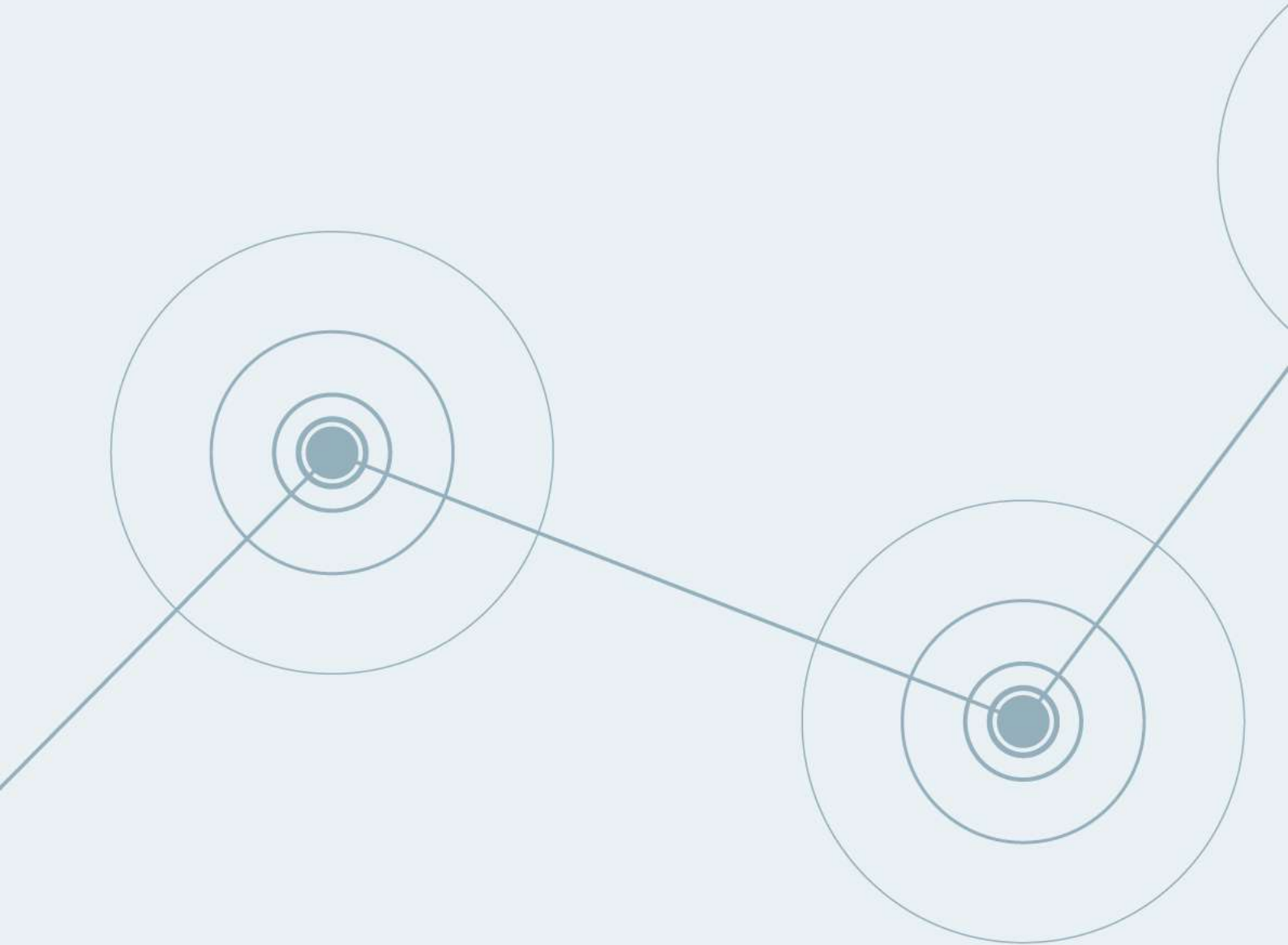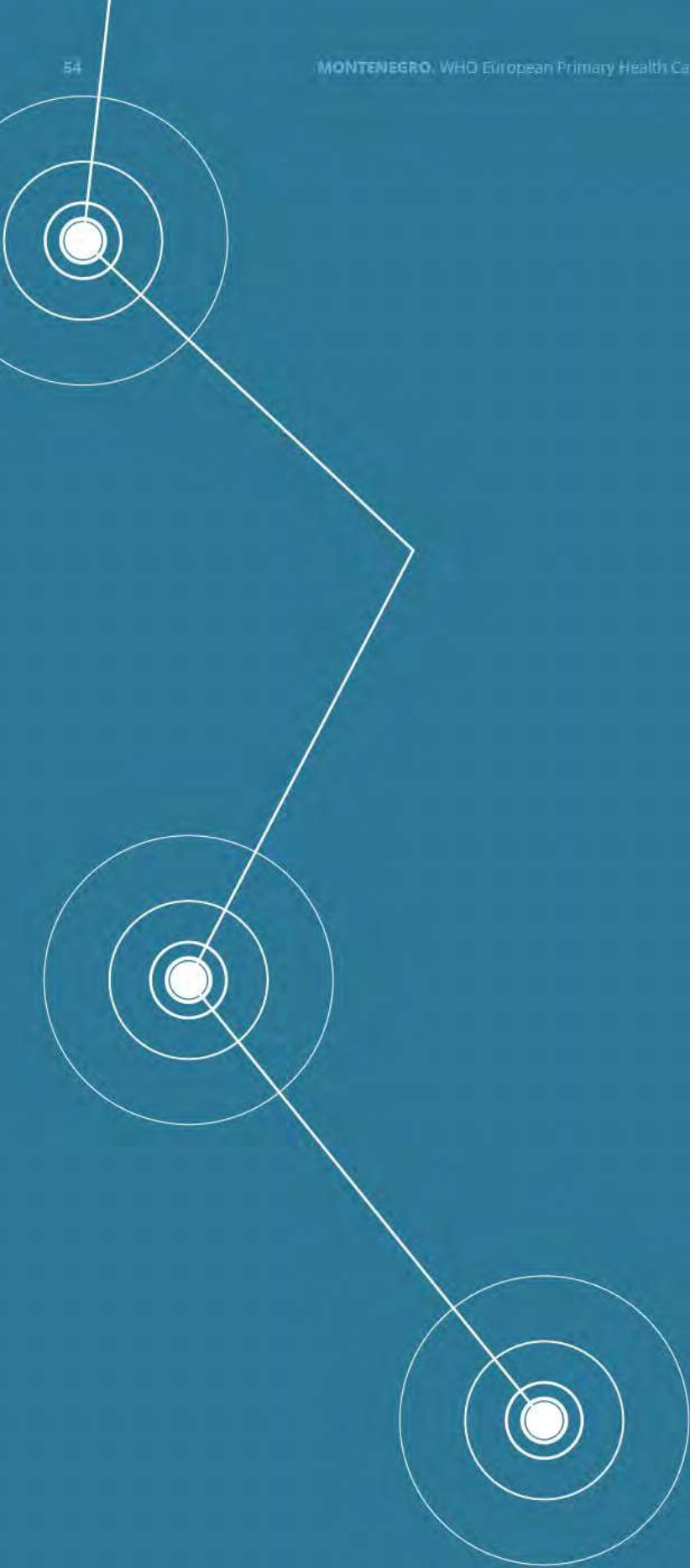
Policy recommendations

This section describes opportunities to accelerate the strengthening of primary health care. It sets out policy recommendations for the short term to improve the performance and capacity of primary care. The section also highlights longer-term recommendations to respond to and sustain priority health improvements through system changes. The key strategies highlighted as policy options draw on existing European policy documents and country practices (8,34–36).

Ensuring a competent workforce – the role of chosen doctors

Enhancing the overall response capacity of primary care requires giving the role of chosen doctors utmost priority. Analysing the services provided by chosen doctors signalled the crucial need to increase their role in initial risk detection for effective monitoring and diagnosis of at-risk people across the tracer conditions studied. Putting aside issues of volume and distribution challenges, there is potential to optimize the existing primary care workforce by investing in the competencies of chosen doctors for adults in general for children and for women (gynaecologists). Links to continuing medical education and professional development should be optimized to ensure that chosen doctors are sufficiently trained to confidently identify at-risk people and initiate diagnostic tests accordingly.

Short term	Longer term
Optimize the competencies of chosen doctors with short-term capacity-building training focusing on detecting hypertension, detecting and treating people with mental health conditions and diagnosis and prescribing for respiratory diseases Identify and remove potential barriers to participating in continuing medical education programmes, such as insufficient interaction between the trainees and providers, an undifferentiated approach and abstract continuing medical education Introduce a core set of indicators for primary care practices so that chosen doctors can monitor their practice and its performance	Gradually train more chosen doctors in medical school and increase the number of residency positions for family medicine Strengthen the programmes of continuing medical education and development Install mechanisms throughout the system to ensure the analysis and feedback of performance data across the system

Expanded scope of practice of nurses working in primary care

The pivotal role of nurses in managing chronic conditions such as diabetes and hypertension and in handling risk factors is widely recognized. The increasing gap between the population's demand for primary care and the number of chosen doctors available to meet that demand will ultimately demand rethinking on the role of nurses, who can act as care managers for people with (multiple) chronic conditions. Doing this will enable chosen doctors to focus on diagnosis and treatment and on leading teams caring for people with complex health-care needs.

To get ahead of this trend, nurses should be trained to confidently triage patients to streamline the delivery of care so that patients with greater needs can be treated in a timely manner by the chosen doctor. Nurses should also have a clearly defined role in the follow-up of patients, an important function for building trust and establishing continuity of care with patients over time.

Short term	Longer term
Identify barriers that currently limit the nurses' scope of practice, including state laws, outdated insurance reimbursement models and institutional practices and culture Implement the use of evidence-informed nursing and midwifery guidelines, systematic reviews and recommendations that provide the most reliable available evidence that can be applied to clinical practice **Improve nurses' competences with specific capacity-building training** Introduce continual cycles of evaluation of care outcomes Invest in the capacity of nurses and guidelines available to effectively triage the in-take of patients and optimally distribute tasks between wnurses, chosen doctors and specialists	Scale up and transform the educational curriculum of nurses Plan nurses' workforce to optimize the skill mix Promote evidence-informed practice and innovation Introduce tools for disseminating evidence-informed practice in nursing and midwifery

Enhance diagnosis capacity in primary care

It is not possible to infer whether the limited diagnosis capacity is caused by a lack of skill of health professionals in primary care and/or limited availability of technologies. Certain regulations do not allow primary care professionals to use diagnostic tests such as Doppler ultrasound for foot vascular status, pulse oximetry, spirometry, etc.

Short term	Longer term
Identify and address barriers that impede the enhanced use of diagnostic tests in primary care, such as health regulations, the skill set of chosen doctors and the availability of equipment Improve the competencies of chosen doctors and nurses to use diagnostic tests through capacity-building training	Include the use of technology-enabled care **as a tool to enable effective chronic disease management** Ensure the consistent availability of technologies and their maintenance across facilities by investing in practice management

Increase the prescribing capacity in primary care and align with the essential list of medicines

The essential positive medicines list (for which full or partial reimbursement from the insurance company is guaranteed) needs to be better aligned with the medicines prescribed by chosen doctors. This will enable patients to afford the prescribed medicines without incurring financial hardship. These medicines need to be added to the essential positive medicines list.

The electronic information system also reportedly needs to be updated. Currently, chosen doctors cannot search for generics in the system but need to look for brand medicines. A system that recognizes the generic names and counterparts of brand medicines is strongly recommended.

To strengthen the national capacity to respond to NCDs, WHO has designed a minimum set of interventions in the Package of Essential Noncommunicable Disease Interventions (WHO PEN) for primary care. These interventions are delivered by health professionals in primary care – chosen doctors, nurses and other non-physician health workers – to detect, prevent and treat cardiovascular diseases and risk factors (heart disease, stroke and hypertension), diabetes, chronic respiratory diseases (asthma and chronic obstructive pulmonary disease) and cancer. If the interventions are effectively integrated into primary care, they can significantly contribute to reducing morbidity and mortality from NCDs and possibly other health conditions. The interventions also contribute to overall reduced health-care costs.

Treating people with such conditions in primary care requires that chosen doctors be able to prescribe certain medicines.

Short term	Longer term
Review the essential positive medicines list and identify medicines that should and can be prescribed in primary care; the prescribing capacity of chosen doctors should include chronic conditions and NCDs that lead to a high burden of morbidity Enhance the rationalization of the consumption of medicines with greater use of generics	Adopt the WHO PEN as an instrument that sets a core set of interventions in primary care that require a modest increase in investment but effectively contribute to reducing morbidity, premature mortality and overall costs Update the electronic system to enable search by generics

Invest in risk factor management

The main driver of deaths and disabilities is tobacco. Tobacco leads to several conditions such as chronic obstructive pulmonary disease, including emphysema and chronic bronchitis, and lung cancer and other types of cancer. According to the United States Centers for Disease Control and Prevention, smoking is directly responsible for almost 90% of deaths from lung cancer and chronic obstructive pulmonary disease.

The main challenge is the absence of smoking counselling and cessation services in primary health care. There seem to be no specific guidelines, primary care professionals are not trained to provide these services and the payment mechanism does not give incentives to provide these services.

Short term	Longer term
Initiate strong implementation of tobacco control policies by reviewing and enforcing tobacco control policies, legislation and regulations Increase the availability of smoking-cessation medications in primary care; they should not cause financial hardship to users, so (partial) compensation by health insurance is required	Develop a national tobacco control policy that provides a framework for coordinating all the main actors and their activities Match the implementation plans for the tobacco control policy with the available financial and human resources, and monitor and evaluate the tobacco control policy over time

Ensure a comprehensive package of services for disease prevention, early detection and risk factor management

Based on the current societal and epidemiological context, a comprehensive package of services must be defined for disease prevention, early detection and risk factor management. This involves counselling services on tobacco, physical activity, intake of salt, use of alcohol, body weight, family planning services, healthy lifestyles and psychological counselling for mental disorders. It also entails services for individual risk assessment and stratification such as annual physical examinations, HEEADSSS assessment for adolescents and cardiovascular risk stratification for managing individuals at high risk of heart attack and stroke. If these measures are applied, they could considerably lower hospitalizations from such ACSCs as diabetes, cardiovascular diseases, TB and mental health.

Not only do the services need to be defined to be included in the package but also who or which provider can best fulfil this role. Improving understanding of the underlying causes contributing to the current limited package of preventive services is part of this exercise.

To raise awareness of the guidelines among health professionals, standard approaches can be used that include notifying all registered stakeholders of publications, publishing the guideline through a health ministry newsletter and alerts and a press release on the health ministry website also using social media channels. Other ways to raise awareness are training programmes, conferences, implementation workshops, health ministry field team support and other speaking engagements. Each guideline is different, and activities for raising awareness will vary depending on the type and content of the guideline. Referral criteria – if included in the guidelines – will likely improve the appropriateness of care by enhancing pre-referral investigation and treatment (37).

Short term	Longer term
Identify the underlying causes that contribute Identify the underlying causes that contribute to the current limited provision of disease prevention services in primary care: legislation, regulations, skill set of chosen doctors and nurses, lack of incentives, practice variation etc. Prioritize the selection of services and clear division of responsibility among providers in order to target disease prevention, early detection and screening services and risk factor management of priority cardiovascular diseases and cancers Use tools to raise the awareness of guidelines among health professionals	Invest in the development of national guidelines, starting with the most prevalent chronic diseases and NCDs, most of which lead to avoidable hospitalizations; the guidelines should clearly indicate a strengthened role of primary care in the prevention and early detection of disease and when a patient should be referred to higher levels of care

Enhance the health information infrastructure for monitoring and evaluation

The absence of clear indicators for measuring performance consistently hinders the understanding of system performance. Survey respondents consistently recommended clear and transparent indicators that could be used to measure and evaluate performance across primary care facilities, regular meetings for exchanging data and experiences and a platform to exchange data as important tools to strengthen primary care. A 2017 study (38) also flagged health intelligence as an issue that merits attention.

Short term	Longer term
Explore in depth the quality-of-care mechanisms currently in use and the actors responsible for their implementation for a full overview of the current system supporting the quality of care Develop a limited set of indicators to be monitored and evaluated in primary care that covers the identified priority conditions on which to formulate actionable policy recommendations	Install mechanisms that complement and support a system of data collection, analysis and decision-making for continual learning and performance improvement Invest in data analysis to set up a system of monitoring and evaluation of data in an integrated health system to identify priority health problems, plan the training of the primary health care workforce, provide a regular supply of essential medicines and formulate actionable policy recommendations Standardize the information technology system for reporting and monitoring, especially since the number of private providers is increasing

Align incentives

The existing payment scheme could be further developed to account for outcomes, quality and overall performance. It should, for example, provide incentives for responsible prescribing practices in primary care. Incentives should reward the teams that assess the risk of patients with chronic conditions. They could be explicit or extrinsic incentives such as bonuses and cash or other in-kind financial incentives for providers and patients to engage in specific proventive care or health promotion practices.

Short term	Longer term
Account for performance in primary health care by developing a set of indicators to be monitored and evaluated and could be linked to the strategic use of incentives to reward good performance; the initial set should focus on the effective management of chronic conditions and risk factors; the use of incentives should draw on best available evidence that indicates key characteristics for optimally influencing provider performance (e.g. timeliness of incentives, amount) [40] Initiate supervision from the Health Insurance Fund of primary care professionals' prescribing behaviour and referrals to higher levels of care linked to performance payments	Encourage performance payments for activities related to better screening and early detection, treatment of people with chronic diseases and NCDs, promoting healthy behaviour (such as healthy diet, regular physical exercise and tobacco cessation) and consider payment incentives to promote the coordination of care

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Annex 1. Survey results

Note: [workshop] denotes answers for which the response was confirmed through discussions at the consensus workshop in December 2018.

#	Indicator title	Indicator sub-question	Consensus answer, including the consensus workshop
Mapping primary health care			
1a	Formally defined scope of practice of primary care professionals Nurses (health professional) Nurses (associate professional) Feldschers or paramedical practitioners	Generalist medical practitioners	Yes
		Yes	
		Yes	
		Not applicable	
1b	Formally defined scope of practice of primary care professionals	Existing regulation	Yes
2a	Type of primary care health professionals	Existing regulation	Yes, Law on Health Care Protection
2b	Type of primary care health professionals – who work in primary care	General practitioner or family medicine doctor	Yes, chosen doctor (for adults in general, for children and for women)
		District therapeutist	No, not applicable
		Paediatrician or district paediatric doctor	Yes, chosen doctor for children
		Feldscher	No, not applicable
		Midwife	Yes, gynaecological nurse
		Nurse (health professional or associate professional)	Yes, patronage nurse
		Social worker	Yes
		Psychologist	No, but as consulting doctor yes
		Narrow specialist	Not applicable
		Specialist doctor	Yes, consulting doctor
		Physiotherapist in ambulatory settings	Yes
		Dietitian or nutritionist	Yes
		Occupational therapist	No, but as consulting specialist yes
		Speech therapist	Yes
		Dentist	Yes
		Pharmacist	No
		Public health professional	No, but as consulting doctor yes
		Other	Facility-specific specialists

#	Indicator title	Indicator sub-question	Consensus answer, including the consensus workshop
3a	Settings of primary care – who works in primary care facilities?	Existing regulation	Yes, Law on Health Care Protection
3b	Settings of primary care – who works in primary care facilities?	Offices of general practitioners – solo practices	Yes, general practitioner (chosen doctor); nurse; paediatrician
		yes, general practitioner (chosen doctor); nurse; paediatrician)	
	Ambulatory group practice Polyclinic/ambulatory multi-profile group practice	Yes, called supporting centres; general practitioner (chosen doctor); nurse; paediatrician; consulting doctors	
		Nurse and midwife office	Not applicable
		Offices of other specialist doctors	Not applicable (called supporting centres)
		Dental practices	Yes, dentist (chosen dentist)
		Providers of home health-care services	Not applicable [workshop]; patronage nurses provide some services at home
3c	Primary health care and ambulatory services settings	Outpatient departments of hospitals (general hospitals providing outpatient, day care services)	Not applicable [workshop]
		Residential long-term care facilities (such as long-term nursing care facilities)	Not applicable [workshop]
		Providers of ancillary services	Yes
		Pharmacies, retailers and other providers of medical goods	Yes
		Providers of preventive care	Yes
4	Counselling services in the health benefit package – availability and provision*	Tobacco	Yes, general practitioner [chosen doctor), nurse [workshop]
		Physical activity	Yes, general practitioner [chosen doctor), nurse, paediatrician [workshop]
		Intake of salt	Yes, general practitioner [chosen doctor) [workshop]
		Consumption of fruits and vegetables	Yes, general practitioner [chosen doctor) [workshop]
		Use of alcohol	Yes, general practitioner [chosen doctor) [workshop]
		Body weight	Yes, general practitioner [chosen doctor), nurse, paediatrician [workshop]
		Family planning services	Yes, general practitioner [chosen doctor), nurse, supporting specialist [workshop]
		Psychological counselling for mental disorders	Yes, supporting specialist [workshop]

#	Indicator title	Indicator sub-question	Consensus answer, including the consensus workshop
5	Management of individual risk assessments/stratification in primary care	Annual physical examination or health evaluation	Yes, general practitioner [chosen doctor], paediatrician [workshop]
		Cardiovascular disease risk assessment (using WHO/ISH risk charts)	No, not currently available [workshop]
		Cardiovascular disease risk stratification for managing individuals at high risk of heart attack and stroke	No, not currently available [workshop]
		Detecting hypertension using a risk prediction chart	No, not currently available [workshop]
		Detecting type 2 diabetes using a total risk approach	Yes, chosen doctor
		Detecting TB symptoms in at-risk populations	No, not currently available [workshop]
		Mental health risk assessment	Yes, supporting specialist
		HEEADSSS assessment for adolescents	No, not currently available [workshop]
6	Diagnostic examinations in primary care - availability of select services	Dilated fundus examination	Yes, supporting specialist [workshop]
		Doppler ultrasound for foot vascular status	No, not currently available [workshop]
		Electrocardiography	Yes, chosen doctor, nurse, supporting specialist
		Peak flow measurement	Yes, supporting specialists [workshop]
		Pulse oximetry	Yes, chosen doctor
		Regular ultrasound	Yes, supporting specialist [workshop]
		Sigmoidoscopy	No, not currently available [workshop]
		Spirometry	No, not currently available [workshop]
		X-ray	Yes, supporting specialist [workshop]

#	Indicator title	Indicator sub-question	Consensus answer, including the consensus workshop
7	Diagnostic procedures in primary care - who can make the final diagnosis?	Hypertension	Yes, chosen doctor, supporting specialist
		Ischaemic heart disease	Yes, supporting specialist [workshop]
		Type 2 diabetes	Yes, chosen doctor, supporting specialist [workshop]
		Asthma	Yes, supporting specialist [workshop]
		Chronic obstructive pulmonary disease	Yes, supporting specialist [workshop]
		TB	Yes, supporting specialist [workshop]
		Latent TB infection	Yes, supporting specialist [workshop]
		Depression	Yes, supporting specialist [workshop]
8	Prescribing authority – ability of general practitioner to prescribe or refill prescriptions for medicine	Statin as secondary prevention for individuals with prior cardiovascular disease (heart attacks, strokes, and peripheral vascular disease)	Can prescribe only with recommendation from specialist doctor but can refill without recommendation [workshop]
		Statin as secondary prevention for individuals 40+ years, registered for treatment with type 2 diabetes	Can prescribe only with recommendation from specialist doctor but can refill without recommendation [workshop]
		Penicillin as secondary prophylaxis for rheumatic fever and rheumatic heart disease	Can prescribe/refill without recommendation from specialist doctor [workshop]
		Aspirin as secondary prevention for individuals diagnosed with ischaemic heart disease	Can prescribe and refill without recommendation from specialist doctor
		Angiotensin-converting enzyme inhibitors	Can prescribe and refill without recommendation from specialist doctor
		Beta-blocker	Can prescribe and refill without recommendation from specialist doctor
		Calcium-channel blockers (such as amlodipine)	Can prescribe and refill without recommendation from specialist doctor
		Thiazide or thiazide-like diuretic	Can prescribe and refill without recommendation from specialist doctor
		Metformin	Can prescribe and refill without recommendation from specialist doctor
		Insulin	Can prescribe only with recommendation from specialist doctor but can refill without recommendation [workshop]

#	Indicator title	Indicator sub-question	Consensus answer, including the consensus workshop
		Sulfonylurea (such as glibenclamide)	Can prescribe and refill without recommendation from specialist doctor
		Bronchodilators (such as oral short-acting beta2 agonists, inhaled short-acting beta2 agonists)	Can prescribe only with recommendation from specialist doctor but can refill without recommendation [workshop]
		Inhaled steroids	Can prescribe only with recommendation from specialist doctor but can refill without recommendation [workshop]
		Nicotine replacement therapy	Not applicable, not currently available [workshop]
		Oral morphine	Can prescribe and refill only with recommendation from specialist doctor [workshop]
		Treatment for drug-susceptible TB: isoniazid, rifampicin, pyrazinamide, ethambutol (first-line treatment: 2HRZE/4HR)	Cannot prescribe and refill
		Antipsychotics for psychotic disorders (chlorpromazine, fluphenazine, haloperidol, risperidone)	Can prescribe and refill only with recommendation from specialist doctor
		Antidepressants for depression and anxiety disorders (amitriptyline, fluoxetine)	Can prescribe and refill only with recommendation from specialist doctor
		Anxiolytics and tranquilizers for anxiety disorders and sleep disorders (diazepam)	Can prescribe and refill only with recommendation from specialist doctor
		Mood stabilizers and anticonvulsant medicine for bipolar disorder (carbamazepine, lithium carbonate, valproic acid)	Can prescribe and refill only with recommendation from specialist doctor
9	Follow-up of noncommunicable diseases in primary care – who manages the patients?	Hypertension	Yes, chosen doctor [workshop]
		Ischaemic heart disease	Yes, chosen doctor [workshop]
		Type 2 diabetes	Yes, chosen doctor [workshop]
		Asthma	Yes, chosen doctor [workshop]
		Chronic obstructive pulmonary disease	Yes, chosen doctor [workshop]
		Cancer – breast	Yes, chosen doctor [workshop]
		Cancer – cervical	Yes, chosen doctor [workshop]
		Cancer – colorectal	Yes, chosen doctor [workshop]
		TB and latent TB infection (treatment management)	Yes, supporting specialist [workshop]
		depression	Yes, supporting specialist [workshop]

#	Indicator title	Indicator sub-question	Consensus answer, including the consensus workshop
10	Services in primary care – who provides the services?	Administration of intravenous fluids or drips	Yes, chosen doctor; nurse; consulting specialist
		Administration of oxygen (mask or tube)	Yes, chosen doctor; nurse; consulting specialist
		Cardiopulmonary resuscitation	Yes, chosen doctor; nurse; consulting specialist
		Foot vibration perception by tuning fork	No, not currently available [workshop]
		Intramuscular or subcutaneous injection	Yes, nurse
		Manual ventilation with a bag valve mask resuscitator (Ambu bag)	Yes, chosen doctor, nurse, paediatrician, consulting specialist
		Ophthalmoscopy	Yes, consulting specialist
		Postnatal care check of mother	Yes, nurse
		Visual acuity examination	Yes, supporting specialist [workshop]
		Visual inspection and examination of the feet of people with diabetes for detecting risk factors for ulceration	Yes, consulting specialist
11	Services available in primary care to enhance self-management and health literacy	Telephone-based services	Yes, countrywide
		Computer-based programmes (such as Internet-based chat rooms, virtual support group)	No
		Printed resources (such as pictograms, pamphlets, brochures, etc.)	Yes, in some regions
		in-home electronic aids (such as blood pressure cuff, blood glucose device, etc.)	Yes, countrywide
		One-on-one patient education (such as nurse and patient)	Yes, ad hoc
		Patients' school	Yes, ad hoc
		Peer support groups	Yes, ad hoc
12a	Clinical guidelines for management of diseases in primary care · existence	Cardiovascular disease	Yes
		Diabetes	No
		Cancer	No
		Chronic respiratory disease	No
		TB and latent TB infection	No
		Mental health condition	No

#	Indicator title	Indicator sub-question	Consensus answer, including the consensus workshop
12b	Clinical guidelines for managing diseases in primary care – inclusion of referral guidelines criteria from primary care to higher levels of care	Cardiovascular disease	No
		Diabetes	Not applicable [workshop]
		Cancer	Not applicable [workshop]
		Chronic respiratory disease	Not applicable [workshop]
		TB	Not applicable [workshop]
		Mental health conditions	Not applicable [workshop]
13a	Availability of laboratory tests, diagnostic imaging and equipment in primary care	Most predominant facility	Offices of general practitioners – ambulatory group practice
13b	Available tests – premises of the most predominant type of facility	Blood glucose measurement	70% or more of facilities
		Oral glucose tolerance test	70% or more of facilities
		HbA$_{1c}$, diabetes testing	70% or more of facilities
		Urine test glucose/sugar	70% or more of facilities
		Urine test ketone bodies	70% or more of facilities
		Total cholesterol measurement	70% or more of facilities
		Urine strips for albumin assay	70% or more of facilities
		Faecal occult blood test	More than 50% but less than 70% of facilities
		Pap smear (cervical cytology)	70% or more of facilities
		HPV test	Not applicable, not currently available
		Rapid TB diagnosis using WHO-recommended rapid test such as Xpert MTB/RIF	10–50% of facilities
		Rapid streptococcal test for throat swab	10–50% of facilities
13c	Diagnostic imaging equipment – most predominant type of facility	X-ray	70% or more of facilities
		Electrocardiography	70% or more of facilities
		Regular ultrasound	More than 50% but less than 70% of facilities
		DOPPLER ultrasound (for foot vascular status)	Not applicable, not currently available [workshop]
		Sigmoidoscopy	Not applicable, not currently available [workshop]

#	Indicator title	Indicator sub-question	Consensus answer, including the consensus workshop
13d	Available equipment – premises of the most predominant type of facility	Bag valve mask for manual resuscitation (such as Ambu bag)	70% or more of facilities
		Blood pressure instruments	70% or more of facilities
		Defibrillator	70% or more of facilities
		Height scale	70% or more of facilities
		Ophthalmoscope	More than 50% but less than 70% of facilities
		Peak flow meter or spirometer	More than 50% but less than 70% of facilities
		Tuning fork	Not applicable, not currently available [workshop]
		Weighing machine	70% or more of facilities
14a	Availability of laboratory tests, diagnostic imaging and equipment in primary care (second most predominant)	Second most predominant	Ambulatory multi-profile (speciality) group practice / polyclinic
14b	Availability of tests - second most predominant type of facility	Blood glucose measurement	70% or more of facilities
		Oral glucose tolerance test	10–50% of facilities
		HbA$_{1c}$, diabetes testing	10–50% of facilities
		Urine test glucose/sugar	10–50% of facilities
		Urine test ketone bodies	10–50% of facilities
		Total cholesterol measurement	10–50% of facilities
		Urine strips for albumin assay	10–50% of facilities
		Faecal occult blood test	10–50% of facilities
		Pap smear (cervical cytology)	10–50% of facilities
		HPV test	Not applicable, not currently available
		Rapid TB diagnosis using WHO recommended rapid test such as Xpert MTB/RIF	Less than 10% of facilities
		Rapid streptococcal test for throat swab	Less than 10% of facilities
14c	Availability of diagnostic imaging – second most predominant type of facility	X-ray	10–50% of facilities
		Electrocardiography	70% or more of facilities
		Regular ultrasound	10–50% of facilities
		Doppler ultrasound (for foot vascular status)	not applicable, not currently available [workshop]
		Sigmoidoscopy	not applicable, not currently available [workshop]

#	Indicator title	Indicator sub-question	Consensus answer, including the consensus workshop
14d	Availability of equipment - second most predominant type of facility	Bag valve mask for manual resuscitation (such as Ambu bag)	10–50% of facilities
		Blood pressure instruments	70% or more of facilities
		Defibrillator	More than 50% but less than 70% of facilities
		Height scale	More than 50% but less than 70% of facilities
		Ophthalmoscope	10–50% of facilities
		Peak flow meter/spirometer	10–50% of facilities
		Tuning fork	not applicable, not currently available [workshop]
		Weighing machine	70% or more of facilities
15	Gatekeeping system	General practitioners act as a gatekeeper to services offered by specialist doctors	yes, a general practitioner's referral is compulsory to access most types of specialist care (except in case of emergency) though very often this requirement is bypassed
16a	Referral protocol from primary care to a higher level of care – requirement for a structured referral letter	None specified	Yes, country-wide
16b	Referral protocol from primary care to a higher level of care – components of a referral letter	Individual's identification information	Yes
		Reason for referral	Yes
		Information related to illness	Yes
		Information related to relevant investigations already undertaken	No
		Medication list	No
		Socio-psychological factors	No
		General practitioner's contact details	No
17a	Reply protocol from specialist care to primary care	Existence of structured reply letter	Yes, country-wide
17b	Reply protocol from specialist care to primary care – components of reply letter	Assessment of current problem	Yes
		Investigation undertaken	Yes
		Medication prescribed	Yes
		Next steps in the care of the patient	Yes
17c	Reply protocol from hospital care to primary care	Existence of discharge letter	Yes, country-wide
17d	Reply protocol form hospital care to primary care – components of discharge letter	Assessment of current problem	Yes
		Investigation undertaken	Yes
		Medication prescribed	Yes
		Next steps in the care of the patient	Yes

#	Indicator title	Indicator sub-question	Consensus answer, including the consensus workshop
17e	Reply protocol from hospital care to primary care	Discharge planning required	Yes, country-wide
17f	Reply protocol from hospital care to primary care – integrated health and social care plan required		No
18	Shared care pathways for coordination between levels of care – existence by condition	Cardiovascular diseases	National guidelines exist
		Type 2 diabetes	No guidelines
		Cancer – breast	No guidelines
		Cancer – cervical	No guidelines
		Cancer – colorectal	No guidelines
		Asthma	No guidelines
		Chronic obstructive pulmonary disease	No guidelines
		TB	No guidelines
		Latent TB infection	No guidelines
		Depression	No guidelines
19	Different access modes offered in primary care – percentage of primary care providers that offer the following modes of care	Individuals can telephone their regular primary care provider or support staff for questions or a consultation	Incomplete
		Less than 10% of facilities	
	Individuals can email their regular primary care provider or support staff for questions or a consultation Make home visits	Incomplete	
20	Developing shared care plans for people with multiple chronic conditions – percentage of primary care health professionals who engage with relevant specialists		Incomplete
21a	Patients' choice of general practitioner · ability to choose the primary care provider overall	None specified	Yes, the individual is free to choose the provider, but the choice is limited (such as to a small geographical area, or to a specific network of providers)
21b	Patients' choice of general practitioner – ability to choose the general practitioner within chosen or assigned provider/practice	None specified	Yes, the individual is free to choose the general practitioner within the chosen or assigned practice
22	Patient list used by general practitioners – existence	None specified	Yes

#	Indicator title	Indicator sub-question	Consensus answer, including the consensus workshop
23	Coordination within primary care – percentage of general practitioners who have regular meetings with other health professionals	Other general practitioners	Incomplete
		Nurse	Incomplete
		Psychologist	Incomplete
		Dietitian	Incomplete
		Pharmacist	Incomplete
		Public health professionals	Less than 10% of chosen doctors
24	Coordination across sectors – percentage of professionals from different sectors who are integrated in a care team to care for people with multiple chronic conditions		Less than 10% of primary care teams
25	Existence of care coordinator – percentage of primary care providers that use a care coordinator to monitor and manage care for people with chronic conditions	Care coordinator	10–50% of practices
		Case manager	Not applicable
		Nurse dispensarization	Not applicable
26	Cooperation with specialist doctors	Specialist doctors visit a primary care practice to provide outpatient consultations/visits normally provided in hospital (replaced specialist care)	Less than 10% of chosen doctors
		Specialist doctors visit a primary care practice to provide joint outpatient consultations or visits with general practitioners	Less than 10% of chosen doctors
		General practitioners receive clinical lessons or training from specialist doctors	Less than 10% of chosen doctors
27	Job satisfaction	None specified	Incidentally, country-wide
Performance of primary care			
28	Influenza vaccination coverage	Pregnant women	Less than 10% of pregnant women (note: cultural fears)
		Clinical risk groups	10–50% of clinical risk groups
		Residents of long-term care facilities	70% of residents of long-term care facilities (note: protocol)
		population 65+ years	More than 50% but less than 70% of 65+ years old
29	HPV vaccination coverage	Coverage	Not applicable
30	Education of people with diabetes	Coverage	Incomplete
31	Counselling services for tobacco cessation	Coverage	More than 50% but less than 70% of smokers, age 15+ years

#	Indicator title	Indicator sub-question	Consensus answer, including the consensus workshop
32a	National cancer screening programs targeting the general population for cancer	Cervical cancer screening	10–50% of target female population
32b		Breast cancer screening	more than 50% but less than 70% of target female population
32c		Colon cancer screening	70% or more of target population
33	Individual risk assessments	Cardiovascular disease risk assessment	not applicable, not in practice
34	Treatment coverage	Controlled blood pressure	more than 50% but less than 70% of hypertensive individuals at health facilities
35	Depression treatment coverage	None specified	not applicable
36	Hypertension follow-up	Hypertensive individuals aged 18+ years who had a follow-up visit in primary care in the 12-month reference period	incomplete
37	Diabetes monitoring	Foot examination – people with type 2 diabetes aged 18+ years	10–50% of patients monitored in primary care
		Eye examination – people with type 2 diabetes aged 18+ years	Less than 10% patients monitored in primary care
		Urine protein test– people with type 2 diabetes aged 18+ years	More than 50% but less than 70% patients monitored in primary care
		Blood pressure measurement – people with type 2 diabetes aged 18+ years	70% or more of patients monitored in primary care
		Overweight screening – people with type 2 diabetes aged 18+ years	70% or more of patients monitored in primary care
38	Chronic obstructive pulmonary disease follow-up (previous 12 months)	General follow-up visit – people with chronic obstructive pulmonary disease 18+ years	More than 50% but less than 70% of patients
		Lung function measurement – people with chronic obstructive pulmonary disease 18+ years	More than 50% but less than 70% of patients
39	Postnatal care	Days 7–14 after delivery	70% or more of women
		Six weeks after delivery	More than 50% but less than 70% of women
40	Depression treatment follow-up	None specified	Not applicable, not in practice
41	Incoming clinical information procedures	None specified	Incomplete
42	Generalist–specialist doctor communication	Receive a report or reply letter back from specialist	More than 50% but less than 70% of chosen doctors
43	General practitioner–social worker	Frequency of coordination	Incomplete
44	Referral feedback to primary care	None specified	Less than 48 hours
45	General practitioner contacts without referral (resolution capacity)	Percentage of total contacts	10–50% of total contacts handled solely by chosen doctors
46	Correct diagnosis	None specified	Not applicable, not in practice

#	Indicator title	Indicator sub-question	Consensus answer, including the consensus workshop
47	Prescription of anticoagulating drug with NSAIDs	None specified	Less than 10% of population with a long-term prescription of any anticoagulating drug in combination with an oral NSAID
48	Prescription safeguards	None specified	70% or more primary care facilities
49	Medication review	Pharmacists actively medically review prescriptions	No
		Members of the primary care team (such as primary care practitioner or nurse) actively perform medication reconciliation of patients (such as after hospital discharge)	Yes
50	Effective detection and management of hypertension	None specified	70% or more of patients registered for hypertensive treatment at primary care facilities whose blood pressure is controlled 6-months after treatment initiation
51a	Effective management of type 2 diabetes	Blood glucose under control at last visit	10–50% of people with type 2 diabetes age 18+ years
51b		People with diabetes with at least one prescription of cholesterol-lowering medication	More than 50% but less than 70% of patients
52	Secondary prevention or high-risk control	None specified	10–50% of eligible individuals
53	Prescription from essential list	None specified	70% or more of drugs prescribed in primary care from essential medicines list
Tobacco-cessation service outputs			
54	Development of primary care clinical guidelines – tobacco cessation	Delivering brief tobacco interventions	No
		Quitline counselling	No
		Delivering specialized tobacco dependence treatment	No
55	Training for smoking-cessation services	On brief tobacco interventions	No
		On providing counselling through quitline	No
		On providing specialized tobacco dependence treatment	No
56	Tobacco-use status in medical records	None specified	Yes
57	Services to enhance self-management and health literacy	None specified	Yes
58	Tobacco-cessation medications: availability	None specified	Not applicable, medicines not currently available [workshop]

#	Indicator title	Indicator sub-question	Consensus answer, including the consensus workshop
59	Brief advice or brief tobacco interventions quit rate	Quit rate for at least 6 months in your practice	Less than 10% of tobacco users
		Quit rate for at least 12 months in your practice	Less than 10% of tobacco users
60	Quitline quit rate	Quit rate for at least 6 months	Not applicable, quitline not currently available [workshop]
		Quit rate for at least 12 months	Not applicable, quitline not currently available [workshop]
61a	Specialized tobacco dependence treatment quit rate	Quit rate for at least 6 months	Not applicable, treatment not currently available [workshop]
61b		Quit rate for at least 12 months	Not applicable, treatment not currently available [workshop]
62a	Tobacco-cessation medications quit rate	Quit rate for at least 6 months	Not applicable, medication not currently available [workshop]
62b		Quit rate for at least 12 months	Not applicable, medication not currently available [workshop]
63	Tobacco-cessation medications safety	None specified	Not applicable, medication not currently available [workshop]