

Primary health care organization, performance and quality in North Macedonia



WHO European Framework
for Action on Integrated
Health Services Delivery



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WHO European Centre for Primary Health Care
Health Services Delivery Programme
Division of Health Systems and Public Health



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Abstract

This report presents the findings of the multipronged assessment of integrated health services delivery focusing on the organization, performance and quality of primary health care in North Macedonia. Policy directions for improvement of health services and the alignment of health system enablers are provided to inform and guide ongoing health sector reforms with specific action-oriented recommendations.

Keywords

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Abbreviations

EU	European Union
TB	tuberculosis
UNDP	United Nations Development Programme

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The following individuals contributed to this report.

Contributors

Volker Amelung, Institut für angewandte Versorgungsforschung GmbH, Berlin, Germany

Enrico Davoli, Ospedale Sant'Anna, Rome, Italy

Tino Marti, WHO Regional Office for Europe

Jordi Martinez, Parc de Salut Mar, Barcelona, Spain

Ilaria Mosca, WHO Regional Office for Europe

Rodrigo Scotini, WHO Regional Office for Europe

Editors

Tino Marti, WHO Regional Office for Europe

Juan Tello, WHO Regional Office for Europe

Technical reviewers

Bojan Boshkovski, Ministry of Health

Jihane Tawilah, WHO Country Office in North Macedonia

Juan Tello, WHO Regional Office for Europe

Publication production

Erica Barbazza (design)

David Breuer (text editing)

Jakob Heichelmann (layout)

Background

Since it became independent in 1991, North Macedonia has introduced health system reforms that have profoundly changed the organization and governance of the delivery of health services. Primary health care has been one of the focus of reforms of health services delivery to achieve greater autonomy and efficiency, with discordant results. In 2007 and again in 2016, national health strategies guided health system developments in accordance with European Region health policies. Despite these policy efforts, the country is facing challenges in achieving better health and well-being because of the fragmented governance and organization of health services (1,2). A previous assessment (3) identified the shortage of health workers and the need to more strongly emphasize primary health care to improve the quality, continuity and overall performance of health services for noncommunicable diseases as key interventions needed.

This report has five main sections. The first section provides an overview of key health outcomes as drivers for transforming the delivery of health services. The second section assesses the performance of primary care services by analysing hospital admissions for ambulatory care sensitive conditions. The third section provides an overview of the organization and governance of the system for delivering primary health care. The fourth section describes the mechanisms for ensuring the quality of care. Finally, the fifth section provides policy directions with specific action-oriented recommendations.

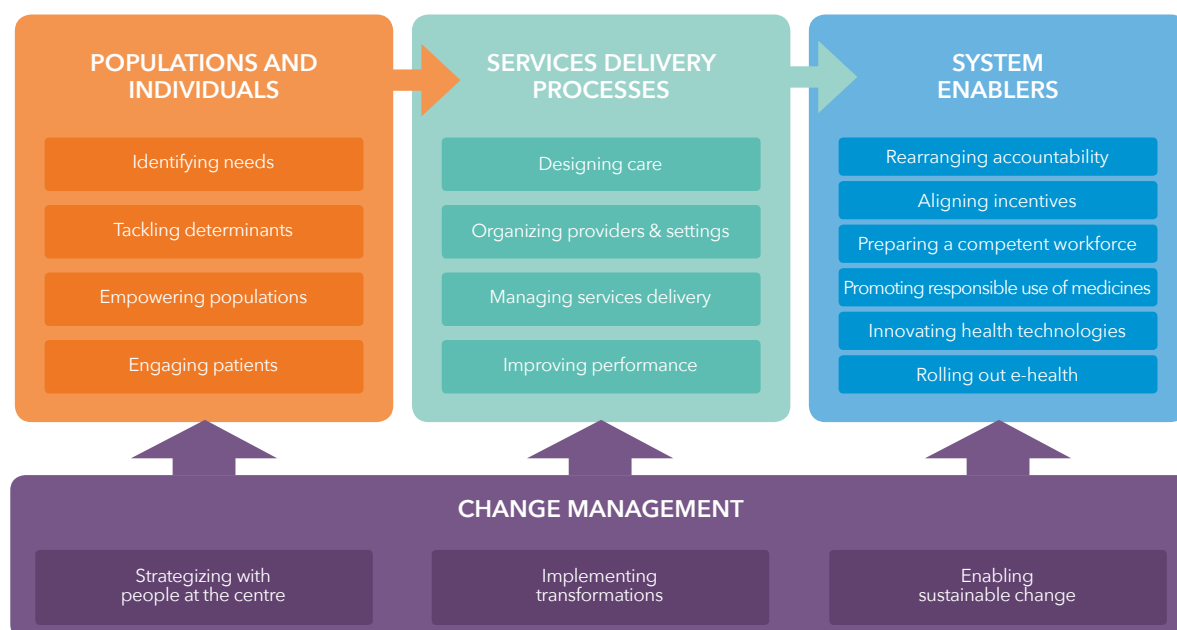
Methods

This assessment draws on interviews and direct observation performed during visits from May to November 2018. The assessment also consolidates findings of data analysis from the health information system, input from a national expert consultation conducted on 15 and 16 November 2018 and a desk review on health services delivery and builds on key messages of the following missions: maternal and perinatal health (23 to 26 October 2018), noncommunicable diseases (18 to 21 December 2018) and public health (25 to 28 February 2019). The findings of the report were reviewed considering the main directions of the white paper (22) and the discussions held during the National Health Forum that took place on 13 February 2019.

Meetings were held with representatives of the Ministry of Health, the Health Insurance Fund, the Agency for Quality and Accreditation of Health Care Institutions, the Chamber of Doctors, the Directorate for e-Health, the Institute of Public Health, professional associations of family doctors, private primary care doctors, nurses and midwives, health providers, UNFPA, UNICEF and non-state actors. In May and November, health facilities were visited and practising primary health care doctors and nurses and community nurses (also called patronage nurses) were interviewed.

The facilities visited include the Primary Health Care Unit in Shuto Orizari, polyclinics Bit Pazar and Giorce Petrov in Skopje and primary health care facilities in the cities of Tetovo, Shtip and Kochani. Other visits included Skopje City General Hospital, 8 September, University Clinic for Cardiovascular Diseases and University Clinic for

Fig. 1. Overview of the European Framework for Action on Integrated Health Services Delivery



Source: (4).

Surgery in Skopje, Clinic Hospital in Tetovo, Clinic Hospital in Shtip and Psychiatric Hospital and Gerontology Institute, 13 November in Skopje.

This report adopts a comprehensive health system approach to assessing the current situation and to propose action-oriented policy recommendations guided by the European Framework for Action on Integrated Health Services Delivery and its approach to transforming health services delivery (Fig. 1). The Framework is anchored in the alignment of four key domains: population and individual health needs; health services delivery processes; health system enablers; and change management (4).

The assessment focused on selected areas and variables from the European Framework for Action on Integrated Health Services Delivery (Table 1).

Table 1. Areas for action reviewed in the assessment applying the European Framework for Action on Integrated Health Services Delivery

Domains	Areas	Variables
Populations and Individuals	Identifying needs Tackling determinants of health Empowering populations Engaging patients	• Addressing population health needs • Mapping support needed beyond health services • Supporting the development of community health • Supporting patient self-management
Services delivery processes	Designing care Organizing providers and settings Managing services delivery Improving performance	• Structuring primary care practices • Determining the mix of disciplines • Using clinical guidelines and protocols • Organizing providers and settings for equitable access • Patient transitions, referrals and discharge • Measuring performance and the quality of care
System enablers	Rearranging accountability Aligning incentives Ensuring a competent workforce Rolling out e-health	• Aligning organizational structures • Matching provider incentives to services • Recruiting and training primary care staff members • Granting access to health data in secure and safe ways

Source: (4).

Between July and September 2018, data were analysed to cross-check the findings and explore primary health care features in depth such as medical demography, models of care, practice profiles, responsive capacity and disease management. This analysis was conducted in collaboration with the Directorate for E-health, a semi-independent authority for health data collection and management that provided data and exploited the health information database.

The section on performance, such as ambulatory care sensitive conditions, is based on data analysis and qualitative information collected through interviews and literature research. Data were extracted from Moj Termin (My Appointment),

the health information system launched nationwide in 2013 and institutionalized at the Directorate for E-health (see Box 2). Moj Termin data covers three-time periods: 1 July 2016–31 December 2016; 1 January 2017–31 December 2017; and 1 January 2018–31 July 2018. Data from 2017 was used for the performance assessment. Data from 2016 and 2018 were used to ensure consistency and quality. Interviews with key stakeholders took place during an in-country mission on 24–28 September 2018. Additional qualitative information was collected through desk research on health services delivery.

Documents published in recent years were reviewed and analysed (1–7). Reviewing these documents provided solid understanding of health status and the challenges the health system currently faces. The WHO Country Office in North Macedonia provided relevant background documentation. Other documents were consulted on the websites of the Ministry of Health; the European Observatory on Health Systems and Policies and the World Bank.

Health status and risk factors

The estimated population is of 2.1 million. Life expectancy has been increasing slowly in recent years. In 2017, life expectancy at birth was 79.7 years for females and 73.9 years for males; both below the European average (8).

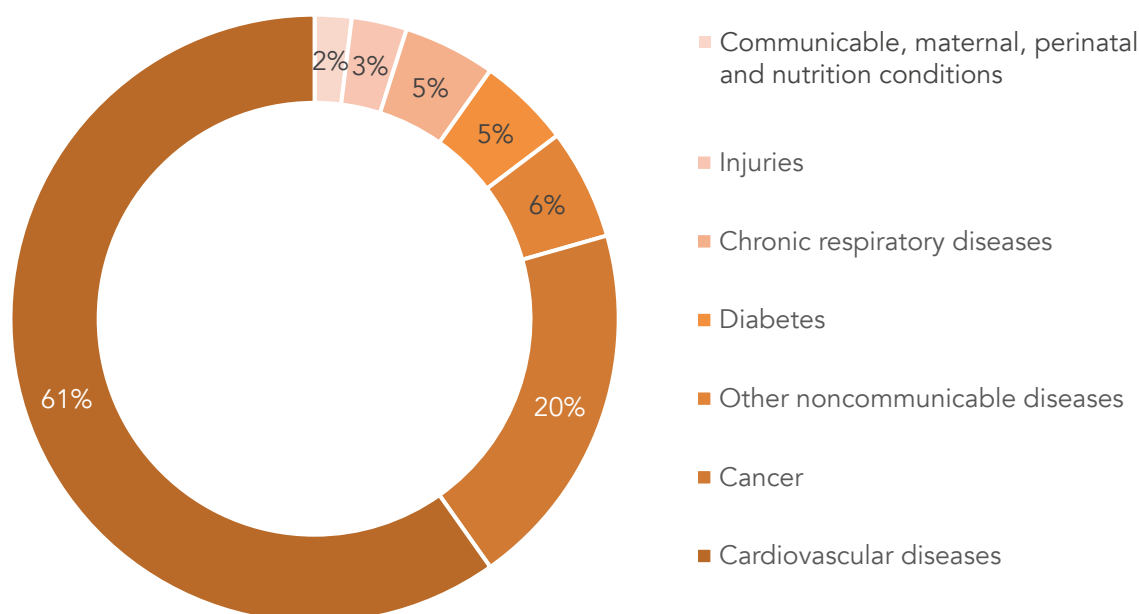
The proportion of the population older than 65 years increased from 8.0% in 1991 to 12.2% in 2013, signalling a rising ageing population living with chronic and comorbid conditions. Although the country is young, population ageing will certainly pose challenges in the future needs for long-term care.

Raising rates of overweight and obesity and a high prevalence of smoking, especially among young people, coexist with an increasing burden of noncommunicable diseases.

Noncommunicable diseases

Noncommunicable diseases account for an estimated 95% of total deaths: 61% from cardiovascular diseases and 20% from cancer (Fig. 2). Premature mortality is higher than in the European Region, for both sexes, although generally declining except for cancer. Infant mortality is also increasing.

Fig. 2. Causes of death in 2016 (% of total deaths, all ages, both sexes)



Source: (9).

Stroke and ischaemic heart disease are the leading causes of death, followed by lung cancer and Alzheimer's disease, which increased by 21% and 48%, respectively, from 2007 to 2017 (Table 2) (9).

Table 2. Top 10 causes of death by rate in 2017 and change, 2007–2017

Rank	Cause	Change from 2007 to 2017 (%)
1	Stroke	2.5
2	Ischaemic heart disease	2.5
3	Lung cancer	21.5
4	Alzheimer's disease	48.0
5	Diabetes	7.8
6	Hypertensive heart disease	17.2
7	Colorectal cancer	20.5
8	Chronic obstructive pulmonary disease	11.3
9	Cardiomyopathy	30.2
10	Stomach cancer	-0.3

Source: (9).

Increasing mortality from and prevalence of noncommunicable diseases, especially cardiovascular diseases, diabetes and cancer, provides directions on the needed reforms of the system for delivering primary health care.

Main behavioural risk factors: smoking and unhealthy diet

Tobacco, high blood pressure and unhealthy diet are the top risk factors driving mortality and disability (1).

Increasing rates of overweight (58% of the population) and obesity (24% of the population) together with a rising prevalence of smokers among people 15–64 years old (from 43% in 2002 to 46% in 2017) indicate concerning trends, especially in vulnerable populations. It also indicates the need for addressing the determinants of health and for improving equity through population-based interventions.

Communicable diseases

Deaths attributable to infectious and parasitic diseases and tuberculosis (TB) have declined since 1995 and 2000, respectively. However, the incidence of hepatitis B remains 6.5 times higher than the European Union (EU) average (7.5 and 1.1 per 100 000 population, respectively) despite the introduction of mandatory hepatitis B vaccination for all babies born after November 2004 (6).

The vaccination coverage has been traditionally high (between 93% and 98%), including TB, tetanus, poliomyelitis, diphtheria, measles and mumps thanks to the network of preventive services universally provided to all citizens and funded by the Ministry of Health. Nevertheless, some alarming trends are observed in the declining proportion of children vaccinated against measles: 89% in 2015 and far below the WHO European Region (94%), EU countries joining after 2004 (94%) and South-eastern European Health Network (91%) averages.

Performance of health services

Ambulatory care sensitive conditions are health conditions that can be effectively prevented, diagnosed and treated in primary health care. They include acute, chronic and vaccine-preventable conditions that do not require inpatient treatment if timely and appropriate primary care is received. Ambulatory care sensitive conditions are a proxy for the quality of care. Unnecessary hospital admissions suggest a lack of uniformity in health providers' patterns of referral and admission procedures.

This section draws on data from Moj Termin to identify the number of people being hospitalized for the 22 ambulatory care sensitive conditions analysed in 2017.

Ambulatory care sensitive conditions referrals and hospitalizations

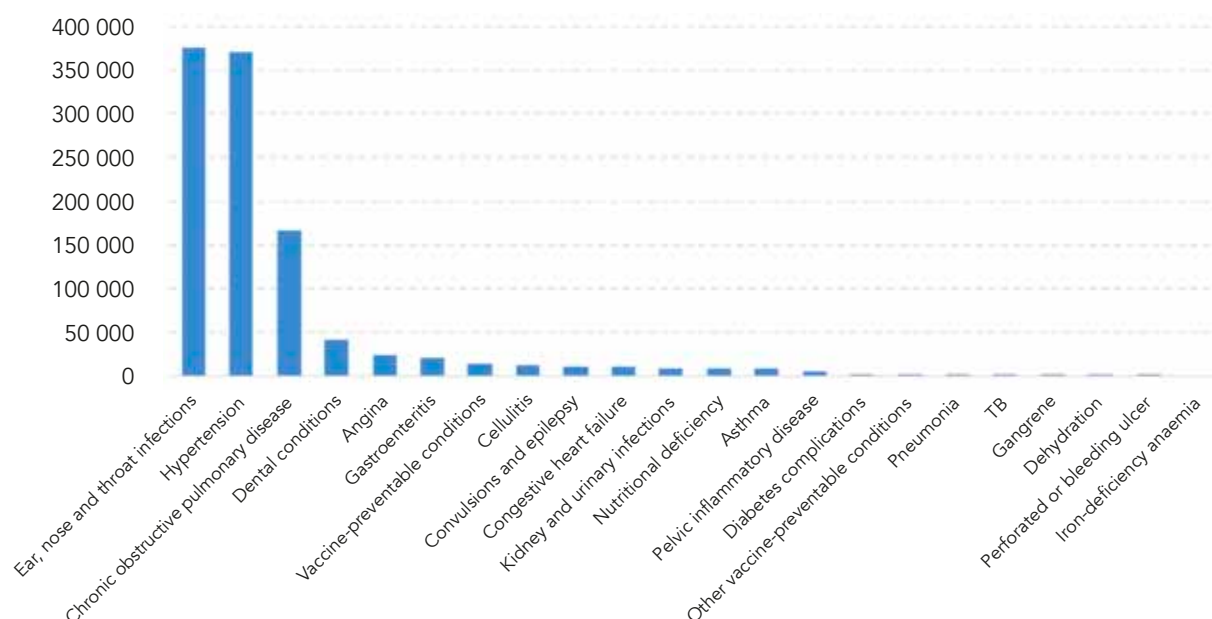
The list of ambulatory care sensitive conditions used in this study comes from Bardsley et al. (10) (Annex 1) and has been applied by WHO in a series of multicountry studies on this topic (11).

The dataset has information on patients registered with a primary care doctor that were hospitalized and had an outpatient visit for ambulatory care sensitive conditions.

In 2017, 1 087 601 patients resulted registered with a primary health doctor for one of the 22 ambulatory care sensitive conditions analysed; 263 761 (24%) visited an outpatient specialist at a hospital and 23 745 (2%) were hospitalized for one of these conditions. For comparison, in the second semester of 2016, 764 774 resulted registered in primary care, 168 507 (22%) visited an outpatient specialist and 11 690 (1.5%) were hospitalized for an ambulatory care sensitive condition. In the first half of 2018, 847 571 resulted registered, 164 209 (19%) visited an outpatient specialist in hospital and 15 722 (2%) were hospitalized for an ambulatory care sensitive condition.

In 2017, the top prevalent ambulatory care sensitive conditions for registered patients were ear, nose and throat infections (375 654), hypertension (370 901), chronic obstructive pulmonary disease (166 302), dental conditions (42 172) and angina (24 244). Fig. 3 shows the number of patients registered with a primary care doctor visited by ambulatory care sensitive condition.

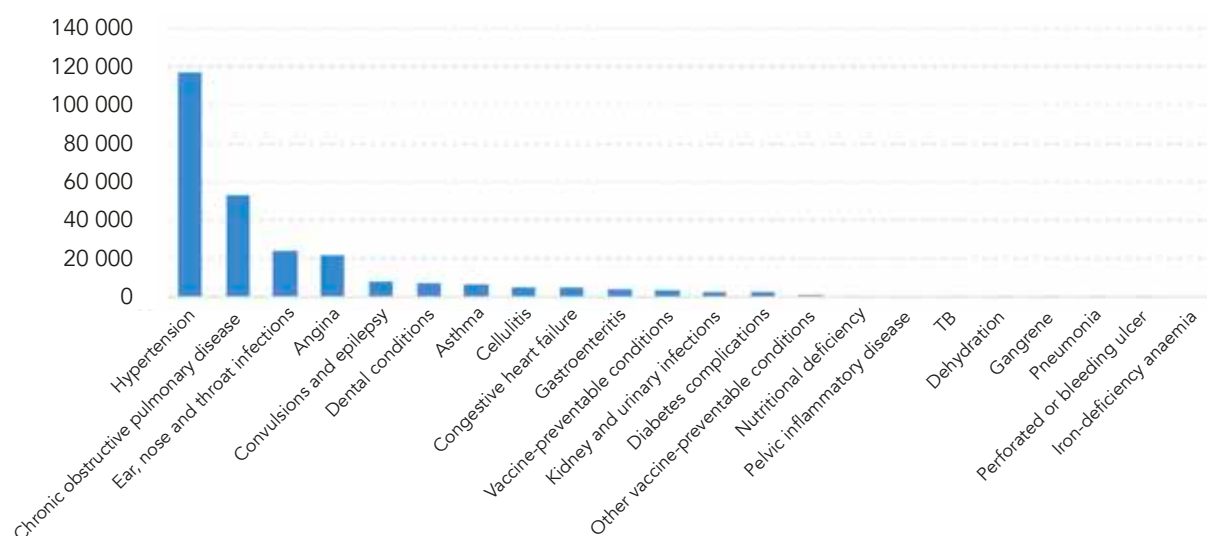
Fig 3. Number of patients registered at primary health care visited for ambulatory care sensitive conditions, 2017



Source: Moj Termin (2018).

Fig. 4 shows the conditions for which patients visited an outpatient specialist in hospital in 2017. The top ambulatory care sensitive conditions were hypertension (117 345), chronic obstructive pulmonary disease (52 960), ear, nose and throat infections (24 238), angina (21 452) and convulsions and epilepsy (7970).

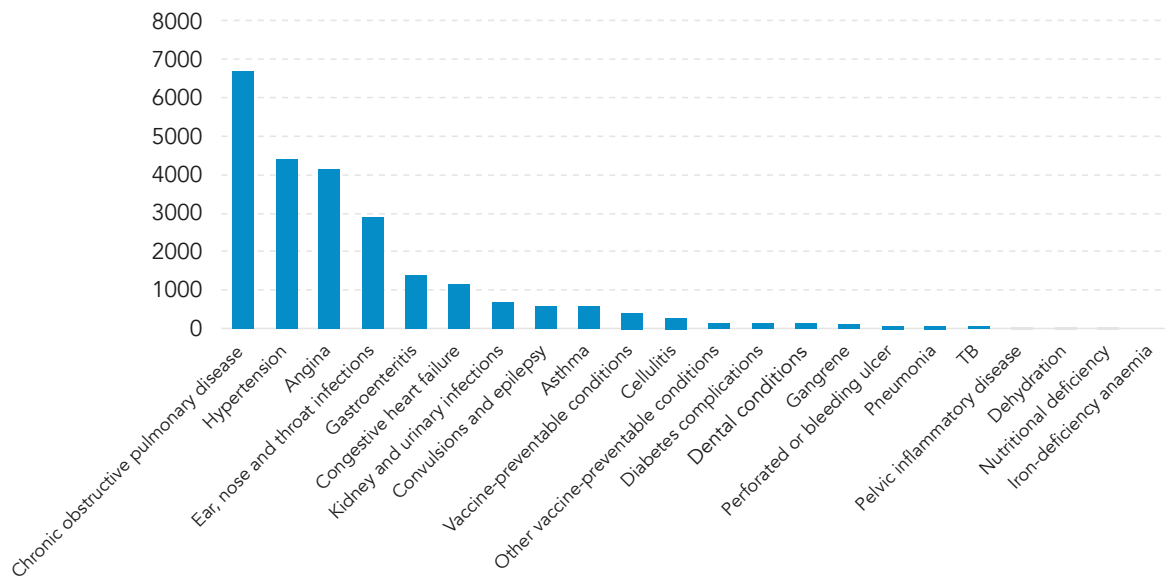
Fig 4. Number of patients by ambulatory care sensitive conditions that visited an outpatient specialist, 2017



Source: Moj Termin (2018).

In 2017, the top five ambulatory care sensitive conditions that accounted for almost 82% of all hospitalizations of ambulatory care sensitive conditions (Fig. 5) were: chronic obstructive pulmonary disease (6675), hypertension (4398), angina (4122), ear, nose and throat infections (2880), gastroenteritis (1374) and congestive heart failure (1151).

Fig 5. Number of hospitalizations for ambulatory care sensitive conditions, 2017



Source: Moj Termin (2018).

The hospitalizations of the top three ambulatory care sensitive conditions in 2017, chronic obstructive pulmonary disease (28% of related hospitalizations), hypertension (19%) and angina (17%) account for 64% of all hospitalizations of ambulatory care sensitive conditions.

All three conditions can potentially be addressed in primary health care by tackling behavioural and metabolic risk factors. The 2016 WHO noncommunicable disease country profile highlighted the challenges and opportunities for the health system to properly address these conditions. Among the challenges identified were an effective model of services delivery and coordination across providers with a pattern of far too many referrals to secondary and tertiary care for similar patient profiles (3).

Table 3 captures the share of patients diagnosed with one of the three top ambulatory care sensitive conditions leading to hospitalizations that were also registered with a primary health care doctor and who visited outpatient specialists in 2017. The numbers are estimated based on the number of unique patients, meaning for example, that if a patient presented at more than one consultation, it is counted as one single episode for the same ICD10 diagnosis group.

Table 3. Patients diagnosed with angina pectoris or chronic obstructive pulmonary disease or hypertension, registered with a primary care doctor, who visited outpatient specialists, 2017

	Number of patients diagnosed and register with a primary health care doctor	Number of patients that visited outpatient specialists	Percentage
Angina	24 244	21 452	88.5
COPD*	166 302	52 960	31.8
Hypertension	370 901	117 345	31.6

*COPD: Chronic obstructive pulmonary disease

Source: Moj Termin (2018). Authors' elaboration

In 2017, 89% of patients diagnosed with angina pectoris and registered with a primary health care doctor consulted outpatient specialists. Similarly, 32% of patients with diagnosed chronic obstructive pulmonary disease or with hypertension visited outpatient specialists, respectively. These figures provide a proxy measure of the level of improvements that could be achieved in order to diagnose, treat and manage these conditions in primary health care.

Sex- and age-related factors

Two of three selected conditions show a different pattern by sex. In 2017, the people hospitalized for angina were 39% men and 61% women. The people hospitalized for hypertension were 58% men and 42% women. Chronic obstructive pulmonary disease hospitalization did not differ significantly by sex.

Angina and hypertension arise in adulthood. People 19–65 years old represent 58% of the patients discharged from a hospital for angina and 48% for hypertension. No discharged patients for angina or hypertension were 18 years or younger.

The situation differs for chronic obstructive pulmonary disease: 26% of discharged chronic obstructive pulmonary disease patients are 18 years or younger, 39% are 19–65 years old and 35% are 66 years or older.

In summary, in 2017, chronic obstructive pulmonary disease (6675), hypertension (4398) and angina pectoris (4122) were the main hospitalized ambulatory care sensitive conditions. All three conditions can potentially be resolved if behavioural and metabolic risk factors are properly addressed in primary care. This implies removing challenges to facilitate an effective model of services delivery and enhance coordination across providers.

For the three conditions, far too many patients are referred from primary care to outpatient specialist visits at the hospital. For angina, the referral rate is as high as 89% but less for chronic obstructive pulmonary disease and hypertension at 32% each.

The data show that more women are hospitalized for angina and more men for hypertension. The adult population mainly has these two conditions. For chronic obstructive pulmonary disease, no sex differences were found, and 26% of chronic obstructive pulmonary disease patients 18 years or younger were hospitalized in 2017.

Primary health care delivery system

In 2007, a structural reform of the primary health care delivery system privatized the production of primary care services provided by general practitioners, paediatricians, dentists, gynaecologists, school doctors and pharmacists. These health providers were compelled to establish formal contracts with the Health Insurance Fund based on a newly introduced capitation payment model.

Since then, the major efforts in strengthening primary health care have been the creation of a health network introduced in 2012 to make all general practitioners and paediatricians become family physicians by 2020 and the deployment of the health information system, called Moj Termin, to streamline the processes of referral to specialists and prescription of medicines by primary care doctors.

Table 4. Primary health care policy milestones

Date	Policy	Described
2000	Health Insurance Law	Provided the legal basis for the establishment of a social health insurance system through the Health Insurance Fund, an independent agency and purchaser of services.
2004–2007	Primary health care reforms	All primary care providers were obliged to obtain private ownership to continue service provision under the Health Insurance Fund scheme based on a new capitation payment model.
2007	Health Strategy of North Macedonia 2020 (1)	Set out a long-term health strategy to achieve a safer, more efficient and fairer health system and set the intention that all primary care doctors become family physicians by 2020.
2009–2010	Introduction of the family medicine specialty	Introduction of the three-year specialty in family medicine, extended to experienced general practitioners, paediatricians and occupational medicine specialists.
2012	Law on Health Care	Enabled the Health Insurance Fund to contract services from private providers at the secondary and tertiary levels. Established a health network of certified providers to ensure geographical access to health and introduced an accreditation system for quality of care.
2013	Introduction of electronic appointments for specialists	Deployed the integrated health information system Moj Termin for referrals to specialists and electronic prescribing of primary care doctors.
2016	Health 2020 Strategy of North Macedonia (2)	Strategic health policy document in the context of Health 2020, the WHO European policy framework for health and well-being, and the United Nations 2030 Agenda for Sustainable Development.

Source: WHO European Centre for Primary Health Care and European Observatory of Health Systems and Policies.

In 2016, the Health 2020 Strategy set out through a participatory process the vision and strategic goals based on a multisectoral, systemic and life-course approach in the context of the WHO European policy framework for health and well-being and the 2030 Agenda for Sustainable Development (2).

Patients' rights and benefit package

A definition of patients' rights was adopted in 2008. A broadened scope of rights and obligations was incorporated into the Law on the Protection of Patients' Rights, including the right to seek a second opinion paid for by the health insurance, the right to privacy and confidentiality, the right to personalized care within the possibilities of the system, the right to avoid unnecessary suffering and pain, the right to personal safety and the right to refuse a treatment and to leave the hospital. To protect patients' rights and claim the violation of rights, the law established the Counsellor on Patients' Rights, who provides information and process claims in addition to administrative and court procedures and the Office of the Ombudsperson.

Citizen participation in health planning and resource allocation is narrow. However, the country has experienced public participatory processes such as the open consultation process initiated by the Ministry of Health in 2009 to propose solutions for better health care for all. The production of the Health 2020 Strategy (2) followed a similar participatory approach in 2016.

Insured patients have the right and obligation to choose a doctor – family doctor, gynaecologist and dentist – with whom they register regardless of where they live or work. Patients can switch to a new chosen doctor twice per year. However, the Health Insurance Fund has not clearly specified the benefit package. Patients cannot make electronic appointments with primary care doctors, causing bottlenecks and unnecessary waiting times for patients the day of the visit and reducing patient and professional satisfaction.

The delivery of activities for public health services is fragmented. Primary care professionals generally do not engage in health promotion. The Ministry of Health leads 17 specific programmes for specific diseases (cancer, HIV, etc.), but health literacy among the population is generally low.

Interviewees reported patients' general distrust towards primary health care, with about 20–30% of patients requesting the primary care physician to hospitalize them. This also influences referral rates.

Some hospitalizations of ambulatory care sensitive conditions are attributable to the low adherence of patients to prescribed medicines. Patients often engage in self-care or simply do not take the prescribed medicines for different reasons, but mostly due to their affordability.

Some vulnerable groups, such as Roma, are underserved and face barriers to accessing primary health care. Roma face more major infectious diseases (such as TB, hepatitis or HIV), higher risks related to unhealthy lifestyles such as smoking and alcohol consumption and a high prevalence of chronic noncommunicable conditions such as heart disease, stroke, cancer, diabetes and arthritis (12).

A measure to increase accountability to population health needs is introducing risk stratification in the capitation adjustment formula, recognizing the burden of comorbidities and the determinants of health.

Organization of primary health care

The health system is based on statutory health insurance, with a purchaser–provider split and public and private providers of care. Resources are raised mainly through compulsory wage-based contributions and a substantial share of out-of-pocket spending. The Health Insurance Fund is the body collecting the contributions and the main purchaser of health services. The health system is strongly centralized and the Ministry of Health has a wide range of responsibilities.

A multi-profile range of health providers delivers primary health services in various settings organized predominantly in solo practices. Primary care doctors, who mostly work in solo practices (68% of all practices), have a relatively high number of patients registered at their practice, usually 2000–4000 per practice, although regional differences exist. For example, a primary care practice has 500 registered patients on average in a rural area. With so many patients and administration, there is not much time left to examine the patient, who is then referred to a specialist. Some respondents claim that primary care doctors cannot refuse a new patient in their practices and that employing a new primary care doctor in the same practice is too complicated. The considerable number of registered patients at primary care practices partly explains the high rate of referrals to secondary care.

Overall, primary health services delivered include health-promoting, disease-preventive, curative and rehabilitative services (Table 5). However, primary care services are mostly reactive rather than oriented to anticipate health needs. This is due to a fragmented scope of practice and non-consolidated implementation of the family medicine model. Only about one fifth of primary care doctors have the speciality of family medicine or paediatrics.

Primary care doctors act as gatekeepers and are individually contracted by the Health Insurance Fund. Doctors are required to employ a nurse who assists in care and maintains registries. Doctors practice either in independent health stations or renting office space in health centres. Health centres are responsible for providing new equipment and renovation according to the contract with the Health Insurance Fund.

Public health doctors, community nurses and midwives are employed by the Ministry of Health in preventive programmes and work in the 34 publicly owned health centres. Their services are accessible regardless the health insurance status of the individuals. Community nurses and midwives perform home visits.

Secondary care specialists are mainly public employees under salary, while some are private and have an individual contract with the Health Insurance Fund. Specialists work in health centres, outpatient clinics or hospitals.

Table 5. Primary health services by health providers

Services	Public health doctors, community nurses and midwives	Primary care doctors and nurses	Secondary care specialists
Promoting healthy lifestyles and health literacy	•	•	
Vaccination and immunization	•		
Treating rare diseases and TB and HIV prevention			
Preventive check-ups of schoolchildren	•		
Preventive check-ups of adults		•	
Antenatal and postnatal care	•	Gynaecologists	
Reproductive health		Gynaecologists	
Services for acute conditions, including diagnostic procedures and treatment		•	•
Managing chronic conditions		•	•
Diagnosis and prescription		•	•
Cardiovascular risk assessment		•	•
Services delivered at home, including home visits by a physician and/or nurse	•	•	
Rehabilitation			•
Community-based mental health care			•
Palliative care			•

Source: WHO European Centre for Primary Health Care and Policies.

Accountability and referral patterns of health providers

Interviewees report a general feeling of lack of communication between the Health Insurance Fund, the Ministry of Health, the Health Inspectorate and the Institute of Public Health. Some respondents, for example, do not know who is responsible for clinical guidelines. The development of health policies is often attributed to the Ministry of Health but also to the Health Insurance Fund. The roles of these institutions needs further clarity. The Health Insurance Fund, for example, does not procure services with primary care doctors but does engage partly in negotiating the contract with the association of providers for primary care and with the heads of institutions for secondary and tertiary care. The Fund monitors and evaluates the volume of services but not their quality.

During the last decade, the privatization of primary care providers has led to an organizational landscape dominated by solo practices that has exacerbated the fragmentation of the delivery of health services and hindered accountability to communities. Most primary care doctors work either solo (50%) or in the same location with a peer (42%), failing to achieve the economies of scale of group practices. Although there are disincentives in the capitation formula to limit excessively large lists of patients, group practices are not explicitly encouraged and doctors are reluctant to work in the areas where the number of patients is insufficient to financially sustain a regular practice.

Contracts with the Health Insurance Fund are standard and have not been modified in the past four years. The capitation-based payment mechanism is divided into fixed and variable parts. Budgets are predefined, and the only negotiable part is the variable payment – pay for performance – that is always disbursed in practice. Individual contracts with the Health Insurance Fund hold

primary care doctors accountable for their performance. Preventive measures and activities account for 30% of the contract for family doctors, paediatricians and gynaecologists and 20% for dentists. Variable targets are agreed annually and linked to preventing major noncommunicable diseases – such as cardiovascular diseases, diabetes mellitus and kidney disease – and the rational prescription of medicines and sick leave. The Fund conducts supervision and regulates activity reporting, with associated non-compliance penalties.

The variable part of the capitation payment relies largely on process indicators rather than health outcomes. For example, participating in training or inviting patients to screening is enough to be eligible for performance payments, as confirmed during interviews. In practice, there is no evidence that the rewarding system is effectively benefiting health outcomes.

The current number of referrals and hospitalizations of ambulatory care sensitive conditions reflect the failure of the capitation system to reward performance and quality.

Traditionally, community nurses undertook community-oriented services and home care within the national disease prevention programmes under the Ministry of Health budget. Initially, they focused on maternal and child care, but migration and an ageing population have led to expanding their scope of services to vulnerable groups and older people living alone or in rural areas.

Most interviewees underlined the overall lack of accountability in the health system, with unclear roles and responsibilities. One of the most recurrent comments is the lack of communication and coordination between primary and secondary care. Although this is possible through the health information system of Moj Termin, in practice it is underused.

Gatekeeping is a core function of primary care services. Access to specialists and prescription of medicines are currently processed by primary care referrals and electronic prescription in the health information system Moj Termin. These automated processes enable the patterns of clinical practice to be analysed.

Box 1

Community and home-based care services in Kochani

A new model of community and home-based care is currently being piloted in the Municipality of Kochani in the Istočen region. This initiative aims to improve the accessibility, availability and quality of health services for people with social risks and to prevent hospital admissions and decrease the length of hospital stay related to chronic diseases.

Partnered by the Ministry of Health, the Ministry of Labour and Social Affairs and co-funded by the local government and UNDP, a health and social integrated team of two community nurses and a social worker provide long-term home care tackling social determinants of health of older people, people with chronic diseases and people living in rural areas and with social risks. They offer preventive, social and health care in coordination with the primary care doctors. Their activity is also helping to uncover the health needs of uninsured patients and addresses primary risk factors such as obesity and smoking and prevalent conditions such as hypertension, diabetes and depression.

A recent analysis of data from the first half of 2018 showed that primary care doctors referred 36% of consultations and prescribed medicine costing 43 399 denars (US\$ 803) per patient consulted over six months. A high referral rate is a symptom of low responsiveness, generating safety concerns and bottlenecks in secondary care. This is also the result of the inability of primary care doctors to prescribe certain medicines, such as insulin or statins, or order specific diagnostic tests, such as endoscopies, magnetic resonance imaging or computed tomography scans. Analysing the patterns of clinical practice, young doctors and group practices refer and prescribe significantly less, whereas family doctors and general practitioners did not differ. Regional differences were also identified.

Table 6. Referral rates and average costs of prescriptions for six months per patient for patients consulted by primary care doctors

Referral rate			Mean prescription costs for six months (denars)	
	%	P		P
All doctors	36		43 399	
All (years)				
25-35	33	<0.01	35 136	<0.01
36-55	37		45 397	
≥56	38		47 819	
Speciality				
Family medicine	37		46 044	
General medicine	37		46 115	
Model of care				
Solo practice	37		50 266	
Group practice (≥2 doctors)	35	<0.01	37 948	<0.01

Source: Moj Termin.

A closer look at disease management reveals some remarkable differences. The analysis of the two most referred diagnoses, hypertension (ICD-10 I10) and diabetes (ICD-10 E11), notes that senior doctors refer significantly less often than younger doctors for both conditions. For hypertension, they also prescribe significantly less often. Similar clinical patterns between family doctors and general practitioners were observed, confirming the influence of the contract with the Health Insurance Fund, the restrictions on prescribing and obligations to refer according to the current clinical guidelines.

Another factor influencing referrals from primary care practices to secondary care is the limited prescribing and diagnostic competencies of primary care doctors. For certain medicines on the positive list – for which people are partly reimbursed by the Health Insurance Fund – an opinion from a specialist physician is needed. A referral to a specialist's opinion is required for relatively easy conditions that can be tackled in primary care, such as statins to reduce cardiovascular disease, thyroid medicines, such as levothyroxine, and oral and nasal corticosteroids.

In terms of diagnostics, primary care doctors need to refer patients to secondary care for a full blood test, tissue or imaging tests. The availability of laboratories is also limited since they work until 15:00. Primary care practices could undertake more diagnostic tests and faster the early diagnosis of common conditions, avoiding unnecessary referrals and inconvenience for patients.

In order to monitor referral patterns, the Health Insurance Fund has currently introduced a limit to the number of referrals up to a maximum of three referrals per patient, including prescriptions, every three months. The Fund applies a financial penalties to primary care providers that fail to comply. This rule conflicts with the obligation to refer patients to secondary care for certain medicines and tests.

Demography and education of the health workforce

Human resources for health are limited compared with peer countries. There are 421 nurses per 100 000 population; this is below the average for the countries in the South-eastern European Health Network (546) and the average for the countries in the WHO European Region (738) and far below the average for the EU countries (856) (13). The lack of nurses is especially sensitive in secondary care, with hospitals having difficulty in recruiting skilled nurses.

According to the experts interviewed, there are sufficient doctors and general practitioners but their competencies are not sufficiently developed. According to the national statistics, the number of physicians, dentists and pharmacists shows a steady increase of 29% between 1990 and 2013, from 5998 to 8439. The share of physicians has closed the gap (2.8 per 1000 population in 2013) with the average of the EU countries joining after 2004 (2.8 per 1000 population) and is similar to that of Croatia (3.0) but still well below the EU average and some other countries in the European Region in 2013 (6).

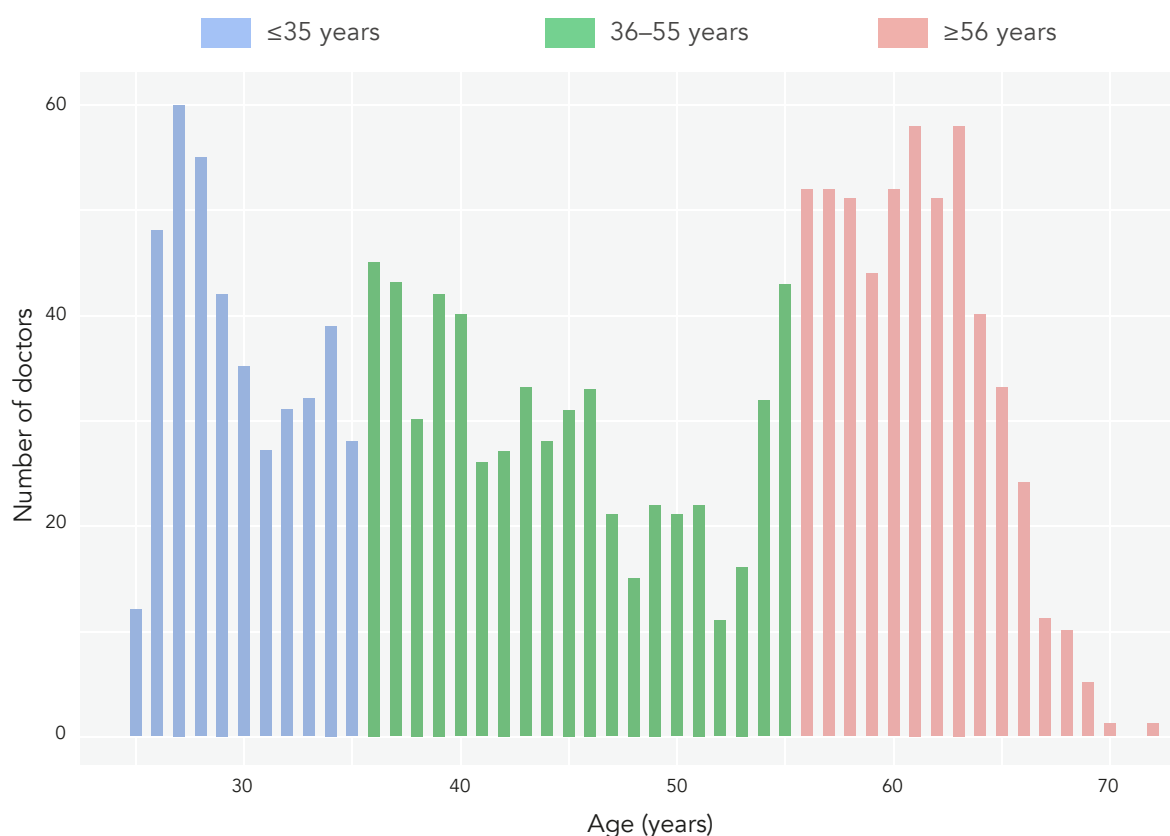
Health workforce is lacking at primary care centres in dispersed geographical areas because of significant internal brain drain. The Ministry of Health and the Health Insurance Fund should put incentives in place to stimulate primary care physicians to relocate to remote areas.

A closer look at the medical demography in primary health care proves that the situation is relatively not alarming. A total of 1533 primary care physicians, including family doctors (11%), general practitioners (79%) and paediatricians (9%) were active in 2018. Their average age is 46.4 years. The age distribution shows picks at 27–28 and 61–63 years, meaning that new cohort of young doctors will replace those close to retiring (Fig. 6).

The situation in rural and remote areas is far more compelling since the current capitation system makes practising in underpopulated areas financially unsustainable.

Three universities – Skopje, Shtip and Tetovo – offer programmes in general medicine, while only Skopje offers family medicine. By 2020, all general practitioners and paediatricians are required to undergo further specialization in family medicine. The specialization of family medicine is 3–4 years, but family doctors are paid the same as primary care physicians. This leads to frustration among primary care professionals since the Ministry of Health does not recognize the specialization and there is no licence for family doctors as there is for general practitioners. Further, the specialization of family medicine is self-funded, unlike other specialties, leading to considerable out-of-pocket costs for the professionals choosing to become family doctors. Other challenges include the absence of a list of services to be delivered by family doctors, although this seems to be currently in process of definition by the Ministry of Health, and the lack of monitoring of individual practices.

Fig. 6. Medical demography of primary care doctors



Scope of practice in primary health care

The broadly defined benefit package and no defined services that primary health care need to perform deeply affects the scope of practice and leads to variation in practice across physicians.

There is no evidence that the competencies required to perform the scope of practice defined in the contract with the Health Insurance Fund are well developed and evenly distributed among primary care doctors. The primary care doctors interviewed showed rather limited willingness to assume a wider scope of practice without a comprehensive clinical update. This is especially true for diagnosis, treatment and management of diabetes and chronic obstructive pulmonary disease, whereas for cardiovascular diseases there exists the believe that primary care doctors are more capable. Disease prevention and health promotion are present in the narrative but do not actually materialize. In practice, screening is the only preventive activity performed. Members of the Family Medicine Association confirmed these views.

The role of nurses in primary health care is not sufficiently developed and exploited. Primary care nurses do not have an established set of competencies required to perform their duties neither a defined scope of practice. They mainly assist doctors in administrative tasks. Most nurses deal with administration and the significant paperwork needed to run the practice. Some respondents classified the functions of nurses as (1) carrying out computer work together with the primary care physician, (2) supporting the prescription of medicines, especially refills for patients with chronic diseases, (3) measuring patients' blood pressure and (4) dealing with patients with chronic diseases. The activities in the last

category are not exactly clear. The overall perception is that the role of nurses is underestimated.

The different levels of education limit the role of nurses in primary health care: nurses are educated at 10 higher medical schools in major cities. The training is four years and on completion nurses – but also other health personnel such as midwives – are required to undertake practical training for the state examination. However, in Skopje, Shtip, Tetovo and Bitola medical colleges, a three-year further training programme is offered to become a chief nurse. These are attended only after the higher medical school. These four medical colleges have different educational systems, so there is no unified curriculum for nurses. The current education system for nurses lacks uniformity.

Community nurses are not linked to primary care practices. They are independent health workers only active in maternal and child health. Community nurses provide home-based care and have expanded their practice from maternal and child care to all family members. According to some respondents, community nurses should be used more effectively, since they are polyvalent. They advise the whole family on health issues but also living and social conditions. A community nurse serves 5000 people. Few respondents mentioned that the community nurses' association has developed a list of activities and services they could potentially offer and submit it to the Health Insurance Fund. The Fund has not yet validated the proposed list. Community nurses lack materials and support for transport.

The scope of services of midwives has decreased over time. Currently they are not checking pregnant women or following up antenatal and postnatal care. They are not entitled to help during labour alone.

Health information system and reporting

Primary care health providers send regular activity reports to the Health Insurance Fund and the Institute for Public Health. These activity reports are used to monitor performance and are consolidated in annual reports (14).

Clinical transactions are recorded in Moj Termin (Box 2), which remains a reliable data source to be exploited for informing, evaluating and improving the performance of health providers and managers.

Although the health information system enables providers and institutions to share information, interviewed primary care doctors and specialists reported that there is poor registration of the patient conditions. Feedback loops are not structured yet and analysis of data for managerial or clinical decisions purposes is only carried out on *ad hoc* basis.

Pharmaceuticals and prescription pattern

The relatively high referral rate from primary care to specialists and hospitals, especially for ambulatory care sensitive conditions, reveals a low response capacity of primary care. This is also results from the primary care doctors not being allowed to prescribe certain medicines, such as insulin for people with diabetes or statins to prevent cardiovascular disease or order specific diagnostic tests such as endoscopies, magnetic resonance imaging or computed tomography scans. In some cases, primary care physicians can write a refill prescription only, otherwise, they must patients to the specialists which leads to unnecessary bottlenecks.

The essential medicines list – for which full or partial reimbursement from the insurance company is guaranteed – needs to be better aligned with the medicines prescribed by primary care physicians. In this way, patients can afford the prescribed medicines without incurring financial hardship through considerable out-of-pocket spending. Some interviewees reported that the essential medicines list has not been updated in the past 12 years.

Box 2

Moj Termin: the digital backbone of the health system

Moj Termin is the national integrated health information system that creates and stores medical records data and information related to health care. Such services as e-referrals, e-prescriptions, medical diaries and access to hospital, laboratory and radiology reports are offered to complement the electronic health record.

As a centralized e-health system, it consolidates data from more than 70 sources, including primary care doctors, health care centres, hospitals, institutes, clinics and pharmacies. At present, 1 950 000 records have been created, and it is the sole system used by primary care doctors to refer patients and prescribe medicines. However, it is still not open to patients to book appointments with their primary care doctors or to access their data in a personal health record.

Moj Termin also offers predefined reports to health managers and key stakeholders from the Ministry of Health, the Health Insurance Fund and the Institute of Public Health.

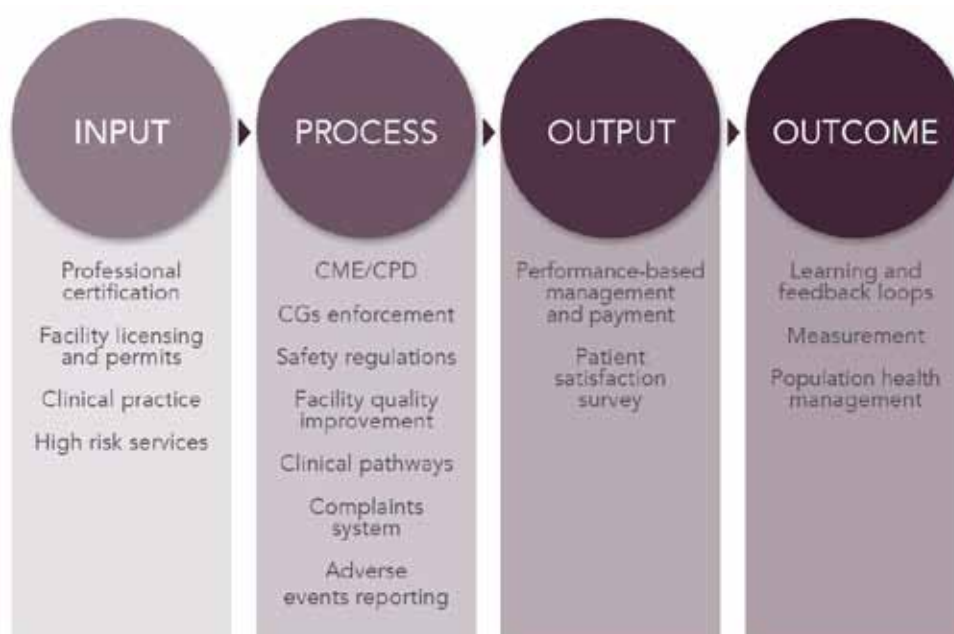
Since 2015, the Directorate for E-health, a state administrative entity within the Ministry of Health, has been responsible for maintaining, developing and managing the health information system.

Quality in primary health care

Several mechanisms are already in place for improving the quality of care, especially to assure the quality of inputs and of some processes.

To assess the quality of primary health care, mechanisms across a quality of care continuum were identified (Fig. 7) involving key actors at the national and subnational levels (Table 7).

Fig. 7. Quality of care continuum



Source: WHO European Centre for Primary Health Care.

Setting and enforcing standards

The Ministry of Health is the main regulatory actor in the health system and responsible for establishing the standards for the quality of health services. The State Sanitary and Health Inspectorate, the Agency for Medicines and Medical Devices and the Agency for Quality and Accreditation of Health Institutions monitor record-keeping, maintenance of proper sanitary conditions in health facilities and overall compliance with the regulations on infectious diseases.

The Ministry of Health sets standards for quality assurance mechanisms such as licences, permits and technical regulation of health providers to become part of the health network following international accreditation standards through the State Sanitary and Health Inspectorate and the Agency for Quality and Accreditation of Health Care Institutions. It also ensures that professionals in the health facilities have undergone proper training and are aware of the standards and norms for providing high-quality health services.

Table 7. Key actors at the national and subnational levels

National level	Subnational level	
	Regions and municipalities	Practitioners, providers, patients and families
Ministry of Health	Municipal governments	Primary care offices – health stations
National Health Insurance Fund	Regional public health centres	Health centres
Institute of Public Health	Regional health insurance fund branches	General hospitals
Agency for Medicines and Medical Devices		Clinical hospitals
E-health Directorate		University clinics
Agency for Quality and Accreditation of Health Institutions		Managers
Family Medicine Association		Health care professionals and allied health workers
Other professional associations (Chamber of Doctors, Private Doctors in Primary Health Care, Nurses and Midwives)		Patients and families
Patients' associations		
Development partners		

Source: WHO European Centre for Primary Health Care.

Professional certification. Professional chambers regulated by the Law on Health Care are responsible for implementing the established system of licensing and relicensing for physicians, dentists and pharmacists. Upon graduation, health professionals are required to pass a state examination and to register with their respective professional associations to obtain a certificate of professional qualification and practising licence. For physicians and dentists, a system of compulsory and accredited continuing medical education training as a requirement for relicensing every seven years has already been established.

Nurses and midwives lack a system of accreditation, licensing and relicensing. This poses concerns about the practice autonomy of community nurses, who deliver home care without supervision by physicians.

Facility licensing and accreditation. Private health facilities willing to operate inside and outside the *health network* need to obtain license from the Ministry of Health. To develop the accreditation system for the quality of care stipulated by the Law on Health Care, the Agency for Quality and Accreditation of Health Care Institutions was established in 2014. The Agency is mandated to define and monitor the implementation of standards of quality of care, provide accreditation and reaccreditation of health facilities and ensure that health professionals have undergone necessary training and are aware of the standards and norms for

providing high-quality health services. Because it was created recently, the Agency has given priority to accrediting hospitals. Accreditation programmes for primary health facilities and laboratories are underway. The primary health care infrastructure reflects the effects of the privatization process from 2004 to 2007. As observed during the field visits, privately owned health care stations meet quality standards but some of the 34 publicly owned health centres require renovation and new medical equipment.

Overall, the quality of health care facilities is not inspected regularly by internal and external experts.

Clinical guidelines. There are 802 evidence-informed clinical guidelines from 32 medical specialties that were developed by professional medical associations and published in the Official Gazette between 2012 and 2015. They are publicly available at the Ministry of Health website (15). The clinical guidelines are not designed for primary care practice, and primary care doctors report seldom using them. Clinical guidelines do not define standards or outcome indicators that would allow the reviewing and monitoring of the quality of services.

Mechanisms for ensuring the quality of processes

Continuing medical education and continuing professional development. The Ministry of Health has delegated rights to provide continuing medical education to professional chambers of doctors, dentists and pharmacists. A credit system is used to evaluate the advancement of health professionals competencies required for renewing practising licences. The continuing medical education is now hindering due to the low income of health professionals who need to pay out of pocket for the training courses. Nurses do not have a formally established continuing professional development system. Their salary scale does not differentiate between a nurse graduating from a higher medical school from that graduated from a medical college. According to several respondents, this leads to considerable frustration among nurses. Continuing medical education, however, does not seem to be based on interactive, learner-centred or active learning but rather on attendance to workshops. Several interviewees reported that the competencies of primary care physicians must be enhanced, including computer ones.

Enforcement of clinical guidelines. Overall, clinical guidelines are not used to measure the quality of care and no compliance or audit mechanisms are therefore in place.

Clinical pathways. Health providers and patients can access national clinical pathways for diagnosing and treating 43 serious diseases. Only four health institutions have made available their clinical pathways through the Ministry of Health website (16). Although there is no system for assessing the adequacy of referrals to specialists, referral guides and schemes with instructions and templates are accessible alongside the official register of specialists and health institutions. The scope of services that primary doctors should offer remains unclear and depends on individual clinical competencies. Interviewees disagree whether pathways of care in primary care exist and, if so, where they can be found. The Agency for Quality and Accreditation of Health Institutions is responsible for developing pathways of care.

Complaint system. Patients can report irregularities to the Ministry of Health, the State Sanitary and Health Inspectorate and the Health Insurance Fund through their websites, email and toll-free phone numbers. According to the Law on Protection of

Patients' Rights adopted in 2008, each municipality must establish a committee for improving patients' rights and a dedicated office easily accessible to inform patients about their rights, especially marginalized groups. Health providers are obliged to gather complaints and opinions of patients through a complaint register and comment box placed in each facility in a visible and easy-to-reach place.

Recipients of health services are not actively involved in assessing the quality. However, the selection of doctors and its changes may indirectly indicate their performance.

Adverse event reporting. Standards for patient safety and monitoring indicators are being developed, led by the Agency for Quality and Accreditation of Health Care Institutions, but they have not been implemented yet. Medical audits are performed on demand and on a case-by-case basis. Only intra-hospital infections have an established data collection and analysis. The Health Insurance Fund reports annually on auditing activity on the legal requirements and contractual obligations of primary care entities, pharmacies and hospitals. Electronic prescription by primary care doctors now offers an opportunity to reduce the adverse events of drug-drug interactions.

Mechanisms for ensuring the quality of outputs and outcomes

Performance-based management and payment. The current payment model for primary health care is based on a capitation formula combined with a pay-for-performance scheme that rewards doctors with up to 30% of their annual income. Performance indicators used to monitor their practice are mainly based on volume and processes rather than quality or outcomes. For instance, indicators to measure compliance with disease prevention activity targets are based on obtaining patients' health history and referring patients for preventive testing.

Patient satisfaction surveys. Information about patients' experiences and satisfaction is not systematically collected and is not linked to the appraisal of the performance of health providers. According to surveys conducted for the Ministry of Health after the primary care reform, patient satisfaction with health services was between 79% and 90% (17). More recently, patient satisfaction was estimated at 45% (18). Recently, the European Health Consumer Index praised the remarkable progress done, largely because of reduced waiting times for referrals through Moj Termin (19) and patient-perceived response capacity of primary care being rated as good regarding dignity, autonomy, prompt attention and communication (20).

Measuring outcomes. There is no systematized access to reporting on population health outcomes despite the availability of data from the health information system. The Institute of Public Health through its 10 regional centres is responsible for collecting and analysing health data and overall surveillance of the population's health. Data are gathered from various sources and published in the annual health statistics report. Ad hoc analysis is also performed for the Ministry of Health or international agencies. Overall, health outcome data are not used systematically or as part of learning and feedback loop to continuously improve quality.

Policy directions for improvement

Strengthening the primary health care delivery system

The increasing complexity of health systems often results in blurred lines of responsibility and accountability. At present, there are governance challenges at the national and subnational levels because of the weak capacity to implement policies and lack of coordination between the main health stakeholders. In primary health care, the fragmented system of delivering health services (including public health services), the solo-practice scale of health providers and the lack of a culture of quality improvements based on learning loops erodes the community orientation and accountability for the outcomes.

An integrated health services delivery approach aimed at improving coordination between providers and settings of care and linking with the social sector points out towards a more community-oriented and multidisciplinary model of care in line with the European Framework for Action on Integrated Health Services Delivery (22).

Advancing the model of primary care

Considering people's health needs, the current model of primary care, predominantly based on solo private practices and fragmentation, is not fit for purpose. It performs poorly and generates a dysfunctional and inefficient health system that overloads specialised and hospital care.

A community-oriented and multidisciplinary model of care based that addresses health needs require the following transformations:

- **Defining primary health care regions and zones.** This should be done to organize health services and render health providers accountable to the health of their communities or list of patients. Administratively, the country is divided into eight regions and 81 municipalities. Primary health care regions may match the administrative regions while primary health care zones may consider the dimension of the catchment areas, ideally between 20 000 and 50 000 people, sociocultural aspects and remoteness for example rural/peri-urban/urban.
- **Establishing multi-profiled primary care teams.** All primary care professionals practising in a given primary health care zone will form virtual teams regardless of their practice configuration. They will be responsible for the health needs and outcomes of a primary health care zone while being accountable to the community. It is expected that the multi-profiled teams will include, among others, nurses and community nurses with an expanded role, other health professionals, social workers. The Health Insurance Fund and the Ministry of Health can promote group practices through financial incentives in order to optimize the economies of scale, to expand access and to improve continuity of care.

- **Integrating public health and primary care services.** This can be achieved through the role of a primary care team coordinator and eventually creating a local health council. The coordinator may act as focal point of the primary care zone, will coordinate health services and face-to-face team activities such as clinical sessions, training or coordination meetings and will promote increasing community participation in health matters. This requires a solid cooperation among the Ministry of Health, the Institute of Public Health and the regions, as well as engaging patient associations at all levels of decision-making. A joint work among different actors may lead and facilitate public health action within the health system and beyond, according to the findings of a mission for assessing the alignment of the National Public Health Institute with the national public health priorities that took place from 25 to 28 February 2019. The same mission recommended increasing the capacity and capability of the Institute of Public Health to utilize population health data to inform strategic planning *and the organization of services* [editors' note].

Box 3

Example of primary health care zoning in Severoistocen

Severoistocen region is situated in the north-east of the country and divided into five municipalities: Kumanovo, Lipkovo, Staro Nagoricane, Kratovo and Kriva Palanka. A total of 166 037 insured patients selected primary care doctors in 102 health institutions in this region according to the health information system database.



Primary health care zoning based on the principles of population size and proximity would generate four primary health care zones: Kumanovo, Lipkovo, Kratovo and Kriva Palanka. The Municipality of Kumanovo would be divided into two zones because of its large population and the complexity of coordinating and managing 103 primary care doctors.

Defining the scope of practice and the benefits package

Efficient and high-quality primary care services require a defined scope of practice aligned with the health benefit package. This definition would help to optimize the update of the current professional competencies and guide their further development through the offer of a aligned curricula of the continuing professional development and one of the speciality on family medicine. It would also facilitate the transition to proactive model of care, especially for patients with chronic conditions. According to a mission that took place from 18 to 21 December 2018

to assess the performance of primary care physicians on diagnosing, treating and managing noncommunicable diseases, defining the frequency, the scope of practice and the responsibility of primary care physicians in carrying out health-checks and communicating risk with patients will help to accelerate health outcomes.

The definition, the expansion of the scope of practice and a higher level of autonomy of nurses and community nurses needs also review. This exercise will also require reforming the regulation of the nursing profession. Community nurses need to be provided the necessary materials and transportation to reach patients in remote areas.

Strengthening accountability for performance

Accountability entails the procedures and processes by which one party justifies and takes responsibility for its activities. In primary care, a stronger and more strategic role of the Health Insurance Fund will allow a shift from single practice to group, multi-profiled primary care team with accountability to their communities. This can be achieved by aligning the performance indicators with the current national health priorities. Shared goals between primary care multi-profiled teams and other health providers may catalyse the coordination of health providers, the implementation of a more proactive model in the provision of health services and the provision of public health services. Since public health services are financed by the Ministry of Health, the adoption of financial incentive is currently a challenge that needs attention. Single practices also hinder shift towards improving performance and increasing the response capacity of primary care because of misalignment in the incentive arrangements, for example for promoting preventive services, and the implementation of measures to rationalize prescribing and referrals to specialists. This will require updating clinical competencies and assistance from automated clinical decision support systems.

An additional measure to increase accountability for population health is introducing risk stratification in the capitation adjustment formula, recognizing the burden of comorbidities and determinants of health.

Improving data access to enable feedback loops

The development of the business intelligence component of the Moj Termin database offers a crucial opportunity to improve health and clinical management. Feeding back the results of practice to health professionals and managers can accelerate learning loops. However, data collection can be improved easily by increasing the number of mandatory fields of the current e-records. Health indicators at the primary health care zone and regional levels can also improve the community orientation of health services and support the deployment of population health management initiatives such as tailored services to vulnerable groups. Health planners can also benefit from accessing these sources of health information to forecast health needs, plan resources and perform simulations.

Introducing clinical decision support systems and extending the e-booking system to primary care appointments are two complementary information solutions that Moj Termin can effectively host and support. Clinical decision support systems can guide primary care doctors and specialists to refer and prescribe the right treatments based on available evidence. Opening e-booking to patients can provide an opportunity for primary care doctors to manage workloads better and support more proactive activity.

Currently, 40% of prescriptions and referrals are paper-based. These should be replaced with electronic solutions (21). The health information system, methodically recording services, could reduce the time of primary care providers dedicated to input repeated information in the system and provide valuable feedback to improve primary care performance and quality. New roles are needed for arranging appointments and renewals of routine prescription (21).

Increasing regulatory and implementation capacity at the national and subnational levels

Strengthening regulatory and implementation capacity at the national level requires improving the alignment in policy-making of the Ministry of Health entities, the Ministry of Labour and Social Affairs, the Health Insurance Fund and the Institute of Public Health including the involvement of patient associations (21). Further strengthening primary health care requires coordinated action in such fronts as reforming the funding model, planning health workforce and health infrastructure, regulating primary health care zones and promoting multi-profiled teams. Capacity-building stretches out from health providers to national institutions to improve health planning, programme implementation and evaluation skills.

At local level, establishing diverse steering bodies with greater participation of local communities can reinforce the integration of health providers and improve the community orientation of primary health care. These local governing bodies should oversee health management and approve strategic decisions with the participation of stakeholders and community leaders.

Improving performance and quality in primary health care

Many stakeholders are involved in ensuring the quality of care including the Ministry of Health, the State Sanitary and Health Inspectorate, the Health Insurance Fund, professional associations, chambers of doctors, pharmacists and dentists, health managers, professionals and patients. However, a comprehensive system for coordinating and monitoring responsibilities is lacking, since the Agency for Quality and Accreditation of Health Care Institutions is not fully deployed. The quality of outputs and outcomes requires further design and development efforts over the information base of the health information system.

Strengthening mechanisms to assure the quality of inputs for primary health care

Critical challenges hamper the quality of inputs that can be leveraged to improve primary health care. Recommended actions are listed below.

Human resources for health. Long-term planning in coordination with educational institutions and a programme for continuing professional development is required to cope with the lack of professionals and competencies resulting from migration. Actions addressing these include:

- reinvigorating family medicine in academia and practice, recognizing the specialty and incentivizing general practitioners to become family medicine specialists;
- developing a capacity-building programme to improve the skills of primary health care professionals, including nurses, in the competencies required to improve the prevention and management of major noncommunicable diseases and other relevant population health needs;

- planning the health workforce based on the current and future map of health resources to calibrate the future needs of professionals and competencies;
- attracting and retaining young doctors to practice in primary care, for example through group practices (21);
- improving working and economic conditions, such as renovating health facilities and medical equipment and improving incentives and rewards;
- offering rural doctors more continuous training similar to the other doctors, as well as further specialization (21);
- establishing licensing of nurses and defining their role to engage in counselling and monitoring patients;
- reducing the burden of administrative work related to referrals, prescriptions and reporting; and
- strengthening undergraduate curricula for physicians, nurses and public health professionals to include also competencies for implementing a people-centred approach and the provision of protective, promotive and preventive services.

Clinical practice. Standardizing clinical practice through the development of primary care clinical guidelines and the regulatory framework to make them effective to better integrate with secondary care; advancing on information solutions such as inter-consultation with specialists and clinical decision support systems that can streamline clinical processes.

Health facilities. Developing a centrally managed investment programme for new and renovated primary health care centres designed and equipped for modern multi-profiled primary care work; and implementing accreditation of primary health care facilities by the Agency for Quality and Accreditation of Health Care Institutions.

Improving and consistently applying mechanisms for improving the quality the processes of primary health care

Continuing medical education and continuing professional development. Increasing the role of the family medicine association in providing continuing training on technical and nontechnical competencies such as clinical management of noncommunicable diseases, responsible prescription and communication for counselling and behavioural change; strengthening continuing medical education to incorporate integrated approaches to public health and primary care; and developing continuing professional education for nurses, community nurses and social workers.

Enforcing clinical guidelines. Generating new and adapted clinical guidelines for primary health care clarifying the roles and responsibilities across the continuum of care; defining, involving patient associations, clinical pathways for patients; and adopting clinical decision support systems to support physicians to refer adequately and more confidently.

Empowering patients. Granting patients access to their health records; introducing new electronic services such as appointments and consultation with primary care doctors, reminders and health education, defining accountability for patients' rights and obligations; encouraging the proactive role of patients in health management and self-management; and including the voice of patients and their carers by involving their associations at all levels of decision-making in the health system and clinical choices.

Reporting adverse events. Ensuring the reporting of adverse events and patient safety regulations through the quality assurance mechanisms introduced and enforced by the Agency for Quality and Accreditation of Health Care Institutions.

Establishing mechanisms for improving the quality of outputs and outcomes of primary health care

Performance-based management and payment. Identifying key performance and quality indicators to monitor primary care at the population and individual levels, aligned with health priorities and agreed with professional associations; aligning incentives and strategic contracting arrangements; developing dashboards for clinicians and health managers to follow up progress and assess clinical quality; strengthening clinical governance to identify gaps and deviations from defined standards; adapting the variable part of the contract with the Health Insurance Fund to reward quality and value of outcomes instead of activity volume; and incentivizing doctors to provide a wider range of services including health promotion and disease prevention.

Information reported by patients. Establishing systems to capture patient-reported experience and outcome measures on such factors as the patient-centredness of care, accessibility, coordination, comprehensiveness and continuity of services.

Learning and feedback loops. Implementing quality indicators generated by the health information system; and using health outcome data to systematically provide feedback to clinicians and health managers through local and national benchmarking, enabling learning from best practices in continuous quality improvement cycles.

Measuring outcomes. Defining and monitoring health and social outcomes; enabling data aggregation at the national, regional and primary health care zone levels to inform health strategies; and strengthening the community-oriented model and monitoring contract fulfilment with the Health Insurance Fund.

Final remarks

Strengthening and integrating primary health services to keep responding to the changing health and social needs of people and to reduce the negative externalities spilled over across the continuum of care is considered an urgent health policy matter for North Macedonia.

Proven cost-effective interventions at population and individual levels require efforts to invest in developing a primary health care approach, also in accordance with global and regional commitments expressed in the adoption of the Declaration of Astana.

An action plan to strengthen health services delivery and align relevant system enablers is a timely policy instrument for improving primary health care organization, governance, performance and quality. Adopting a system and multisectoral perspective, informed by evidence and participation by all stakeholders, this programmatic action plan should combine short and long-term goals looking forward to a time horizon aligned with the 2030 Agenda for Sustainable Development.

A renewed model of care based on a community orientation, multi-profiled teams and the integration of existing and new disease prevention, clinical and social services supported by the advanced health information system can galvanize the will for reform. Achieving this requires collective understanding and agreement on the fact that a people-centred approach is needed and responds to people's expectations.

The alignment of primary health care to that vision will increase its response capacity and ensure the sustainability of the health system, preventing and reducing the burden of noncommunicable diseases and improving health and well-being for the population of North Macedonia.

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Annex 1

List of ambulatory care sensitive conditions and corresponding ICD-10 codes

Ambulatory care sensitive conditions	ICD-10
Angina	I20, I 240, 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

Source: Bardsley M, Blunt I, Davies S, Dixon J. Is secondary preventive care improving? Observational study of 10-year trends in emergency admissions for conditions amenable to ambulatory care. *BMJ Open*. 2013;3:e002007.

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World Health Organization Regional Office for Europe

UN City, Marmorvej 51, DK-2100 Copenhagen Ø, Denmark

Tel.: +45 45 33 70 00 Fax: +45 45 33 70 01

E-mail: contact@euro.who.int

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