Expanding GP competencies in the Slovak Republic: policy routes and recommendations

The World Bank, Washington D.C., June 2018

Acknowledgements

This report is a product of the collaboration between the World Bank team and the team from the Institute for Health Policies (IHP) at the Ministry of Health (MOH), Slovak Republic. The World Bank team was led by Ha Thi Hong Nguyen (Senior Economist, Task Team Leader) and also included (in alphabetical order): Adrien Dozol (Senior Health Specialist); Paolo Giribona (Senior Consultant, medical equipment); Anna Koziel (Senior Health Specialist); Kate Mandeville (Public Health Specialist); and Alessia Thiebaud (Analyst). The team from IHP was led by Martin Smatana (IHP Director) and also included (in alphabetical order): Gaston Ivanov (Analyst, Department of Strategy, MOH) and Michal Stofko (Director, Department of Strategy, MOH). Dionne Kringos (Assistant Professor, Academic Medical Centre - University of Amsterdam and Head of WHO Collaborating Centre for Quality and Equity in Primary Healthcare Systems) contributed the case studies. Maya Razat provided administrative support to the team and formatted the report.

The report is part of the project: "Slovakia: Support to Improve Health System Efficiency" provided by the World Bank to the IHP, funded by the European Union Structural Reform Support Program (SRSS), under the Administrative Agreement between the World Bank and European Commission's dated November 7, 2017.

The authors are grateful to Federico Paoli and Christoph Schwierz from SRSS for inputs during the conceptualization and implementation of the project. We thank Enis Baris (Practice Manager) and Antony Thompson (Country Manager) for overall guidance.

We would like to acknowledge the advice from reviewers Anna Koziel (Senior Health Specialist), Jeremy Veillard (Senior Health Specialist), and Dionne Kringos (Assistant Professor, Academic Medical Centre - University of Amsterdam and Head of WHO Collaborating Centre for Quality and Equity in Primary Healthcare Systems).

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Abbreviations

COPD	Chronic obstructive pulmonary disease
CPD	Continuous professional development
EKG	Electrocardiogram
EU	European Union
FD	Family doctor
FTE	Full-time equivalent
GDP	Gross Domestic Product
GHIC	General Health Insurance Company
GP	GPs
HCSA	Health Care Surveillance Authority
IHD	Ischemic heart disease
MOH	Ministry of Health
NICE	National Institute of Health and Clinical Excellence (UK)
OECD	Organization for Economic Cooperation and Development
PC Monitor	European Primary Care Monitoring System
PHAMEU	Primary Health Care Activity Monitor for Europe study
QBS	Quality Bonus Scheme
QOF	Quality and Outcomes Framework
UK	United Kingdom
US	United States of America

Executive Summary

This is the second in a series of two reports on the expansion of GP (GP) competencies in the Slovak Republic. Strengthening the role of GPs in the Slovak Republic has been identified by the Ministry of Health (MOH) as a key priority for reform. Restrictions on the competencies of GPs is recognized as a particular obstacle to the potential efficiency gains of stronger primary care. Progress has stalled on this issue since incremental reforms four years ago, with new legislation to be informed by international evidence and experience. The first report reviewed national and international evidence on comprehensive primary care (the term used in the literature). This report builds on this foundation by examining possible policy routes to strengthening the comprehensiveness of primary care in the Slovak Republic.

Practical obstacles to more comprehensive primary care such as overburdened GPs and resistance from other specialists will require more than legislative expansion of competencies to yield enduring change. In recognition of the interdependency of primary care dimensions, other aspects of primary care that may obstruct or support successful reform of GP competencies are identified, with sequenced recommendations for strengthening primary care overall. While there are many conditions in place to support comprehensive primary care in the Slovak Republic, several systematic barriers require attention to support expansion of GPs' scope of practice. These include:

- A small and aging primary care workforce, with few GPs and an underdeveloped role of primary care nurses and other primary care professionals;
- Poor status of general practice, limiting the attractiveness of the career to new doctors;
- Less effective payment mechanisms, including an under-developed capitation formula, limited pay-for-performance criteria; and a fee-for-service list that may lead to perverse effects;
- Low spending on primary care;
- No strategy or service specifications for primary care;
- A limited role in quality management by the MOH;
- Poor access to primary care, particularly in rural areas;
- Infrequent communication with secondary care specialists.

Primary care systems and reforms in England, the Netherlands, Estonia and Lithuania are then examined to draw out lessons from countries that have strengthened the comprehensiveness of primary care. These case studies reveal long-standing and explicit commitment by policymakers to strengthening primary care in all four countries. This commitment was then translated into effective action through a series of reforms dedicated to improving the status of primary care in each health system. Common elements to these reforms include:

- Legislation and service specifications that stipulate the central role of primary care and the tasks of GPs
- Efforts to secure the pipeline of GPs;
- Competency-based GP training;
- Expansion of the role of primary care nurses and other primary care professionals;
- Guidelines to reduce variation in care quality;
- Capitation formulae with nuanced criteria for adjustment;
- Performance-linked or bundled payments that incentivize quality of care for chronic conditions, prevention, coordination;
- Fee-for-service payments that extend the scope of practice;
- Strong governance of pay-for-performance schemes by the MOH;
- Promotion of communication between GPs and secondary care specialists.

An analysis of the extent to which expansion in GP competencies could explain changes in health system outcomes in European countries over the last twenty years found that increases in preventive care was associated with less health spending and fewer premature deaths from cerebrovascular disease (mainly stroke) in 2016 compared to 1990. Greater GP involvement in preventive care was also associated with more years of life lost to diabetes mellitus, which is likely to be due to increased identification of patients with diabetes as part of preventive care. The extent to which GPs are the first contact for common health problems, manage and treat common diseases, and undertake technical procedures was not associated with any health system outcomes. This suggests that preventive care should be a priority for comprehensive primary care reform in the Slovak Republic.

Recommendations to expand comprehensive primary care in the Slovak Republic include measures to overcome identified systematic barriers, as well as policy lessons from the case studies. Given that primary care requires urgent reform, all recommendations are for the short to medium term, rather than long-term measures. Many of these recommendations lay the foundation to meet not only current, but future health system challenges. It would be beneficial to undertake sensitization of GPs, specialists and the general public on the rationale and evidence for expanded GP competencies alongside reforms. The evidence reviewed in the first report can be used as a basis for a public communications campaign and stakeholder engagement to lay the ground for reforms in this area.

1. Introduction

This is the second in a series of two reports on the expansion of GP (GP) competencies in the Slovak Republic. Strengthening the role of GPs (GPs) in the Slovak Republic has been identified by the Ministry of Health (MOH) as a key priority for reform. Restrictions on the competencies of GPs is recognized as a particular obstacle to the potential efficiency gains of stronger primary care. A wider scope of practice, with prompt referral to specialist care where necessary, could relieve the burden on secondary care for selected services that can be safely provided in primary care. Rising health spending and poor health outcomes for non-communicable diseases provide impetus for primary care reforms.

Progress has stalled on this issue since incremental reforms four years ago, with new legislation to be informed by international evidence and experience. In 2014, the MOH announced that GPs could perform some tests (for example, electrocardiogram [EKG]) that were previously the preserve of other specialists, with reimbursement on a fee-for-service basis from the Slovak Republic's three health insurance companies. To date, it appears that only a few GPs are offering these tests to their patients. The reasons for this poor uptake are uncertain, but suggests that simply legislating a wider scope of practice is unlikely to be effective.

The first report reviewed national and international evidence on comprehensive primary care (the term used in the literature), reaching the following conclusions:

- Available evidence indicates that more comprehensive primary care may be related to less inappropriate use of secondary care, greater use of preventive care, less morbidity and mortality for diseases that can be managed well in primary care, slower growth in health spending, better patient-perceived quality of primary care, and less postponement of primary care visits for financial reasons.
- There is a consensus between experts, service users, and service providers that primary care in the Slovak Republic could be more comprehensive, particularly when compared to other countries in Europe.
- Comprehensiveness of primary care is an important priority for MOH action, but historical evidence indicates that reforms will require a compelling vision, a strong mandate, and a willingness to work through potential barriers to change.
- GPs' competencies in the Slovak Republic have been expanded in the area of preventive care and health promotion. This could be used a road map for expansion in areas shown to be weaker by international comparators: availability of medical equipment, minor technical procedures, first contact care, and disease management. However, the impact of expansion of preventive activities by GPs needs to be evaluated for effectiveness given the high burden of non-communicable diseases.

This report examines possible policy routes to strengthening the comprehensiveness of primary care in the Slovak Republic, drawing on case studies of countries who have successfully navigated such reforms. In many ways, GP competencies are a window into the extent to which primary care has been adopted as a viable solution to health system challenges such as rising health costs and shifting disease burdens (Schäfer, Boerma et al. 2016). Whether the public would go to their GP as a first port of call with a common health problem depends not only on the skills of a GP but also on factors such as the status of GPs compared to other specialists, the mechanisms available to GPs to coordinate care, and the incentives for GPs to resolve health problems within primary care. Practical obstacles to more comprehensive primary

care such as overburdened GPs and resistance from other specialists will require more than legislative expansion of competencies to yield enduring change. In recognition of the interdependency of primary care dimensions, other aspects of primary care that may obstruct or support successful reform of GP competencies will be identified, with sequenced recommendations for strengthening primary care overall.

This report is organized as follows. The first section sets out enabling factors and barriers to more comprehensive primary care. The second section presents four case studies of European countries that have successfully strengthened the comprehensiveness of their primary care systems. The third section summarizes results of an analysis of the impact of such expansion on health system outcomes. The final section presents overall conclusions and recommendations.

2. Enabling factors and barriers to more comprehensive primary care

This section describes factors that may support or impede expansion of GP competencies in the Slovak Republic. Different structural and process dimensions of primary care will be examined in turn, drawing upon a framework for monitoring primary care systems across Europe introduced in the first report (Figure 1, see also Appendix 1).[1] The outcomes of primary care – quality, efficiency and equity – will be examined where relevant in each section.

2.1 Governance

A primary care strategy is urgently needed to set out the vision of comprehensive primary care. Although there have been many efforts to reform primary care in the last few years, these have not been captured in a formal government strategy (Windak, Oleszczyk et al. 2015). Such a document would enable the MOH to set out the vision for primary care in the Slovak Republic, including the expanded scope of practice of GPs. The scope of this strategy should include all dimensions of primary care, with costed time-bound policy solutions to the barriers identified here. It could also include the role of GPs in providing out-of-hours primary care and a clear policy on the use of emergency departments for non-urgent care.

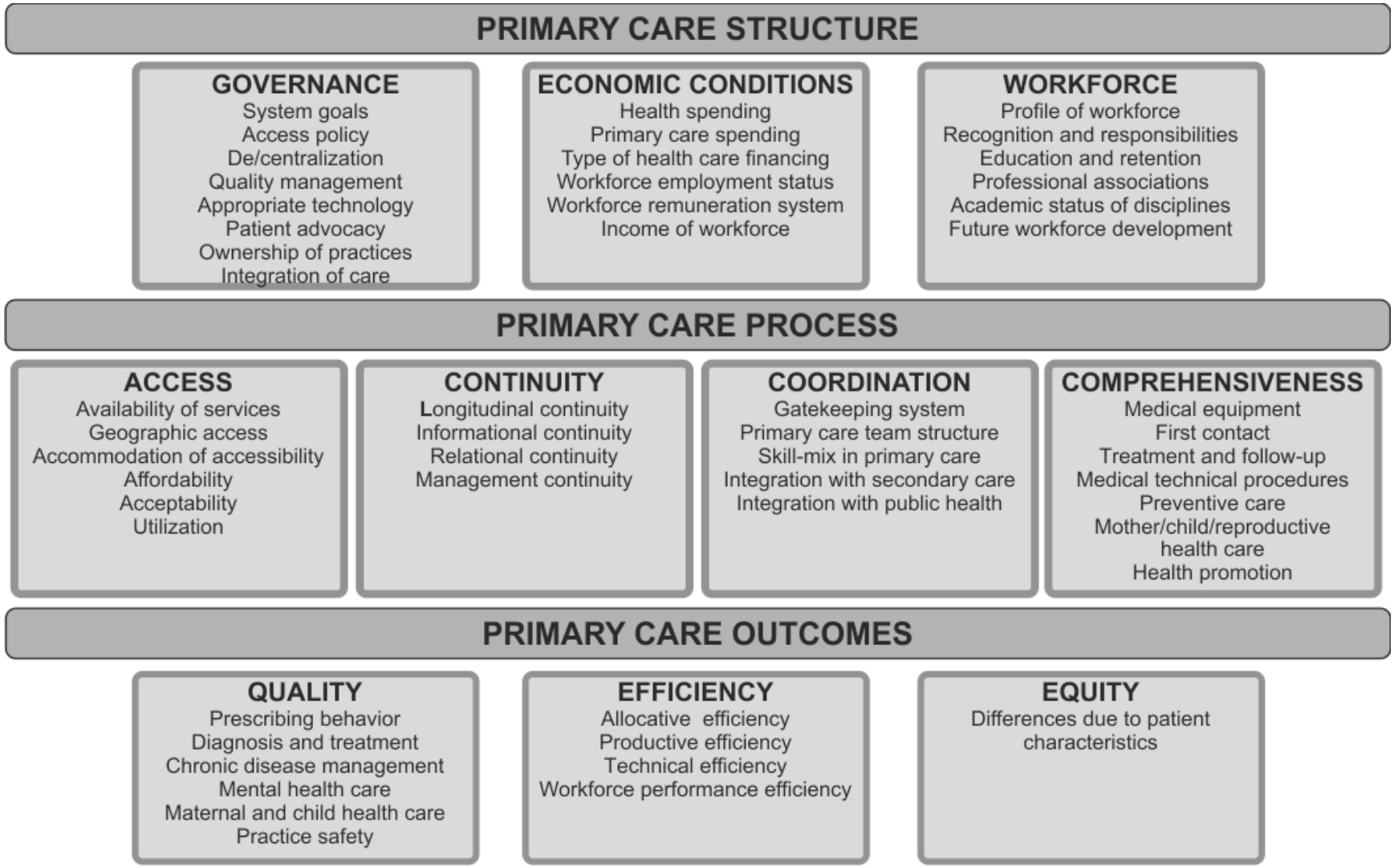
This vision could be informed by an assessment of population health needs. To assess health needs and to better document the performance of health services delivery, initiatives could be taken to optimize data collection and systematically analyze and interpret epidemiological data. A variety of strategies may be used such as national health surveys, sentinel-practices in primary care and a structured episode-oriented registration in primary care. This approach may enhance integration of decision supports and evidence-based information in electronic patient records. This should then form the basis for the vision of primary care, and inform the required scope of practice of GPs and other providers in primary care.

Development and implementation of this strategy could be supported by a higher profile for primary care in the MOH. There is good representation of primary care in the MOH senior leadership team through the Chief GP and Chief Nurse positions. A stronger presence for primary care in the MOH work program could be achieved through the creation of a separate department dedicated to implementation of the strategy's objectives. GP representatives could also be included on all appropriate committees to ensure recognition of the specific needs and unique perspective of primary care.

Service specifications based on this strategy and the revised GP curriculum would provide direction to purchasers on comprehensive primary care. Regional authorities are responsible for ensuring access to GPs across the region, issuing permits to licensed GPs to practice in specific areas. GPs are obliged to register all patients in their allocated geographical area. Health insurance companies are obliged to contract all GPs with permits, providing capitation for each enrolled patient in that practice. While these contracts include capitation amounts, services under fee-for-service and quality criteria for variable capitation, there is no detailed specification of primary care services to be provided by contracted GPs. Detailed service specifications that operationalize comprehensive primary care would allow the MOH to set the standard in this area, without conflict from existing documents. Such specifications could include the chronic conditions that GPs are expected to manage in primary care, basic equipment, technical procedures, and quality standards. These specifications would provide the basis for new contracts between health insurance companies and GPs, which could be selectively applied to GPs signing their first contract after completion of the residency program.

[1] To avoid confusion, the section on comprehensiveness is referred to as scope of practice.

Figure 1. Enabling factors and barriers are drawn from the European Primary Care Monitoring System (PC Monitor) framework



Source: Adapted from Kringos et al. 2010, 2013

The MOH and the Health Care Surveillance Authority (HCSA) could take a stronger role in quality regulation. A broader range of services may not necessarily deliver higher quality care. To realize the benefits of comprehensive primary care, the MOH must assure the quality of expanded services. An important EU-funded initiative underway is the development of numerous clinical guidelines, which should include primary care in the future. To ensure that these guidelines are put into practice, the MOH could considering setting quality standards to be met by primary care providers, with the HCSA (the Slovak quality regulation agency[2]) monitoring the achievement of these standards and other important quality indicators. The privately-owned health insurance companies are currently taking the lead in this area, setting and monitoring quality indicators and providing feedback to GPs. Variable capitation payments based on quality criteria, as described above, provide a good basis for stronger quality management in primary care. Country experiences in this area are described further in the case studies below.

Patient involvement would enhance any change initiatives. Patient satisfaction with primary care can be captured through regular patient surveys or patient-reported outcome measures (PROMs). Such monitoring of patient experiences can both inform any planned changes to comprehensive primary care and also provide insights into the success of such initiatives.

2.2 Economic conditions

It is essential that health financing provides the right incentives for comprehensive primary care. Resolving and managing health problems in primary care requires more time and resources than referring patients to secondary care. For example, treating diabetes mellitus in primary care will necessitate regular consultations, blood tests and coordination with other services. GPs who have a larger proportion of registered patients with chronic or complex needs will require more resources to manage these within primary care. Similarly, practice populations in rural or disadvantaged areas often have more clinical demands than wealthier or urban areas, yet usually have fewer GPs per capita. Moreover, GPs who invest the time and effort into delivering a "one-stop shop" of high-quality services should be fairly compensated for their expanded workload (Grumbach 2015). Recognition of these factors have led to other European countries employing innovative funding models to strengthen comprehensive primary care.

Risk equalization between health insurance companies provides a funding model that could be applied to fixed capitation payments in primary care. In the Slovak Republic, three national health insurance companies (state-owned General Health Insurance Company (GHIC), and private entities Dôvera and Union) collect compulsory health insurance contributions from employers, employees, the self-employed, and the state on behalf of those not in the labor force (Smatana, Pažitný et al. 2016). These contributions are then redistributed among the health insurance companies according to a risk equalization scheme. The last major reform of this scheme took place in 2012, when pharmaceutical consumption[3] among enrollees was added to age, gender, and labor force participation as criteria for adjustment. The motivation for this reform was the greater proportion of elderly patients with complex health problems in the older state-owned company, which led to higher overall costs for this company. The principle acknowledged by this reform – that patients with greater health and social needs cost more to manage - also applies to comprehensive primary care. Currently, however, the largest proportion of GP funding (fixed capitation) is adjusted solely on the age distribution of registered patients. This may provide a

[2] The HCSA was established in 2004 to take over the surveillance and control function from the MOH, which retained legislative and executive functions (Smatana et al, 2016).

[3] Defined as pharmaceutical cost groups (PCGs), which are based on the consumption of certain amounts of daily defined doses of drugs within the Anatomical Therapeutic Chemical group classification over a 12-month period (Smatana et al, 2016).

disincentive to greater management of patients within primary care instead of referral to specialists, particularly for overworked GPs. The availability of patient-level data to more tightly align primary care funding with clinical demand and the precedent of an adjustment formula at the payer level creates strong enabling factors for more comprehensive primary care. The capitation funding formula at GP level could be deepened to include the criteria used at payer level, as well as novel criteria such as indices of rurality and disadvantaged groups (e.g. proportion of Roma population) that incentivize GPs to work in underserved areas.

The variable component of capitation payments offers an opportunity to strengthen comprehensive primary care, particularly the focus on population outcomes and coordination between providers. In addition to the fixed capitation payments, GPs in the Slovak Republic also receive smaller percentages of discretionary variable capitation and fee-for-service payments from all three health insurance companies[4]. The variable capitation component is based on criteria decided by each health insurance company, orientated towards cost-containment indicators such as the number of tests ordered, prescriptions, or referrals. The establishment of performance-based payments in primary care through this mechanism offers an opportunity to strengthen comprehensive primary care. The current criteria, coupled with limited adjustment of the fixed capitation component and other barriers, may penalize GPs trying to provide more comprehensive care. A blend of cost-containment and clinical quality indicators shaped to population needs would provide stronger incentives to transition to more comprehensive primary care. For example, indicators such as the proportion of patients screened for high blood pressure or elderly patients who have had an annual influenza vaccination[5] may help to embed a cultural change to proactive patient management. The experiences of several countries with pay-for-performance schemes orientated to comprehensive primary care are described in the next section.

The fee-for-service component, however, requires review and development. In 2014, the fee-for-service component was enlarged to include some services that were transferred from secondary to primary care, such as treatment of uncomplicated high blood pressure and low-risk pre-operative examinations, and some services that are additional benefits offered by health insurance companies. These include preventive activities such as colorectal cancer screening and vaccinations, as well as basic tests such as electrocardiograms (EKGs) and monitoring of blood-thinning medication (Windak, Oleszczyk et al. 2015, Smatana, Pažitný et al. 2016). The current selection of services paid for under this component undermines comprehensive primary care. For example, paying for prevention and disease management as fee-for-service rather than capitation risks framing these activities as optional extras, rather than an integral part of high-quality primary care. Moreover, including such essential services in variable capitation enables the use of quality criteria to strengthen coverage, such as percentage of registered patients with diabetes who have had a recent blood pressure check. Fee-for-service is a useful mechanism to encourage innovation, coordination between providers, and task delegation to other primary care professionals (see the Netherlands case study below). For example, GPs could be rewarded for undertaking minor technical procedures, such as removal of cysts or warts (see first report and Section 2.7). Low-risk pre-operative examinations carried out by GPs is a good model for better coordination between primary and secondary care, and could be expanded to other services.

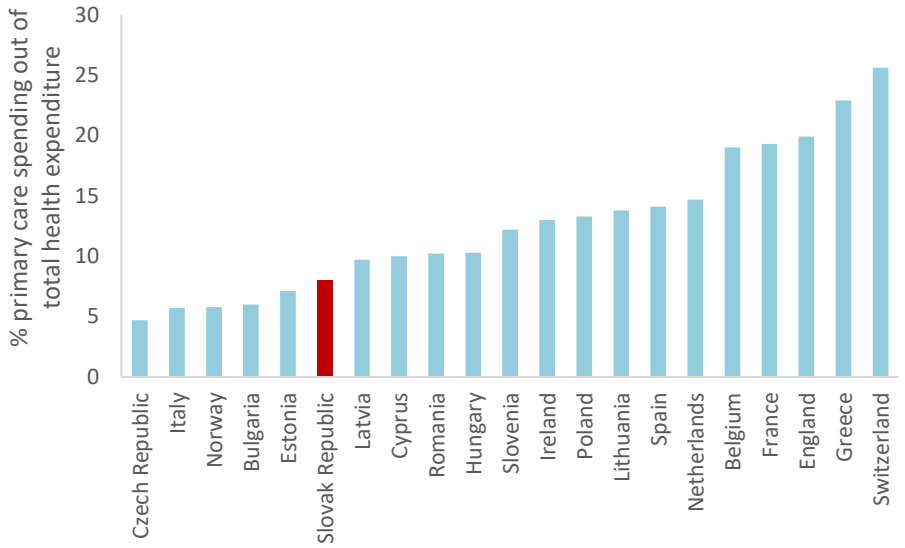
More comprehensive care is likely to require upfront investment to overcome low spending on primary care. While more comprehensive primary care may contain overall health spending in the long run (see

[4] Dovera and Union payments are more developed than GHIC in this regard.

[5] The percentage of people aged 65 and over vaccinated against influenza declined from 36% in 2008 to 14% in 2015 (OECD/European Observatory on Health Systems and Policies, 2017).

first report), substantial improvement from a low baseline will require investment into training (both GPs and other primary care professionals), equipment, salaries and upgrade of premises. The Slovak Republic spent 7% of total health expenditure on primary care in 2014, lower than many other European countries (Figure 2) (Kringos, Boerma et al. 2015, Smatana, Pažitný et al. 2016). Less spending on primary care compared to secondary care manifests in substantially lower incomes of GPs compared to other specialists, perpetuating the unattractiveness of the profession (Windak, Oleszczyk et al. 2015). Most GPs run private practices, covering operating and employee costs out of health insurance payments[6]. There is therefore little flexibility for investment into more comprehensive care from a provider perspective.

Figure 2 **The Slovak Republic spends less than many other European countries on primary care**



Source: Kringos et al, 2015

Notes: Only countries with data available displayed; Year varies by country. Greece: 1997; Spain: 2005; Czech Republic, England, Switzerland: 2007; Italy, Netherlands, Norway, Romania, Slovenia: 2008; Estonia, Ireland, Latvia, Lithuania, Poland: 2009; Belgium, Bulgaria, Cyprus, France, Hungary, Slovakia: 2010.

2.3 Workforce

A prerequisite to more comprehensive primary care is an adequate, motivated and trained primary care workforce. A mandate of larger competencies is likely to have little impact if GPs are struggling to cope with their current workload. Indeed, a high referral rate to specialists (as seen in the Slovak Republic) may be as much a coping strategy of overworked GPs as an overly narrow scope of practice or current payment mechanisms. Attempts to implement comprehensive primary care with the existing workforce may lead to poorer access for existing or new patients, as GPs' time is taken up with a wider care package for each patient. An assessment of workforce capacity is an essential starting point to implementation of comprehensive primary care, as is the training and motivation of primary care professionals to provide such care.

[6] Local governments nominally cover capital expenditure, however this is minimal in practice (Smatana et al, 2016).

Establishment of a general practice residency program and curriculum redesign offer an opportunity to strengthen comprehensive primary care, as does continuous professional development. A three-year general practice residency program was established at three universities across the country in 2014. Prior to this program, doctors wanting to be GPs had to support themselves through training, creating a large barrier to workforce expansion[7]. To date, 264 GPs for adults (adult GP) and 104 GPs for children and adolescents (referred to here as pediatric GP) have been enrolled on this funded residency program, with an average annual enrolment of 66 and 26 respectively. The curricula for both types of GPs were also redesigned to focus on skills needed in general practice rather than hospital medicine. As described in the first report, however, there is still considerable scope to further align both curricula to competencies required in general practice. Once trained, GPs must undertake continuous professional development, earning sufficient credit through educational activities in a five-year cycle[8] (Krztoń-Królewiecka, Švab et al. 2013). This regular process offers the opportunity to reorient and continuously update the knowledge and skills of existing GPs.

The small stock of GPs in the Slovak Republic, however, is a key barrier to comprehensive primary care. From the latest available MOH data, there are 2,447 adult GPs and 1,220 pediatric GPs in the Slovak Republic. This equates to 22 pediatric GPs per 100,000 population, a little more than the European average[9] of 18 per 100,000, although only around two thirds of European countries recognize pediatricians as primary care professionals (Kringos, Boerma et al. 2015). There are less than half the number of adult GPs available in the Slovak Republic compared to the European average (45 per 100,000 vs. 102 per 100,000)[2]. Moreover, many GPs in the Slovak Republic work less than full-time, equating to a full-time equivalent (FTE) of 38 adult GPs per 100,000 and 19 pediatric GPs per 100,000 people.

Like many countries in Europe, the GP workforce in the Slovak Republic is aging. The median age of adult GPs in the Slovak Republic is 59 years (interquartile range 48 to 64 years) and 61 years for pediatric GPs (interquartile range 52 to 65 years). The effective retirement age for GPs is far higher than the statutory pensionable age of 62 years for men and women[10], with 39% of adult GPs and 46% of pediatric GPs aged 62 years or older. Twenty GPs are aged between 80 to 90 years, with half of these working full-time.

If there is no change to current enrolment, the stock of GPs will remain a barrier to comprehensive primary care. The Strategic Framework for Health 2014–30 noted the aging workforce and set a target to reduce the average age of GPs from 54 to 40 years by 2030, primarily through establishment of the residency program. Table 1 sets out projections of the GP workforce and age distribution in 2030 if there is no change to current enrolment rates in the residency program. Given that many GPs currently work past the statutory pensionable age, projections are presented for four different effective retirement ages. In all scenarios, the number of GPs per person does not approach the European average of 102 per 100,000. A realistic scenario of GPs retiring at age 70 reduces the median age to 45 for adult GPs and 55 for pediatric GPs, yet with fewer GPs per population than now. These projections are optimistic as the model does not take outward migration into account. If sufficient GPs are to be available to provide

[7] In the Slovak Republic, there is no central funding for specialty training and residents are employed by their training faculty. For most specialties, these are hospitals with large budgets where residents are essential to service delivery. For GPs in solo practices, however, employing and training an extra doctor is far more difficult.

[8] Including training and formal education courses, conferences, completion of credit tests via a national educational portal, and publications.

[9] 2017 population data from Eurostat. European average from Eurostat 2015 data. Average = EU Member States and European Free Trade Association countries (Iceland, Switzerland, Norway, Liechtenstein).

[10] Women equalized with men since 2017.

comprehensive primary care, much stronger interventions are required to enlarge the primary care workforce.

Table 1 Projections of GPs per population and age distribution in 2030

Type of GP and indicator	Effective retirement age			
	GPs work until 62	GPs work until 70	GPs work until 80	GPs work until 90
Adult GP				
Median age (IQR)	42 (36 to 55)	45 (38 to 61)	60 (41 to 73)	62 (42 to 74)
Number of GP	1,767	2,218	3,208	3,483
GP per 100,000 population	32	41	59	64
Pediatric GP				
Median age (IQR)	42 (37 to 57)	55 (39 to 63)	63 (42 to 73)	66 (49 to 75)
Number of GP	717	965	1,475	1,629
GP per 100,000 population	13	18	27	30

Source: Eurostat 2030 baseline population projection for the Slovak Republic, MOH data on current GP numbers and age distribution, MOH data on residence program enrolment data, authors' calculations

Notes: IQR = interquartile range; average enrolment rate from 2014 to 2018 applied to 2019 to 2030; Assumptions: zero migration, zero death, all residents graduate and start working as GPs, all residents start work at 30 years old, first cohort of residents start work in 2019.

Robust interventions are needed to secure the pipeline of GPs. With only nine percent of medical graduates choosing to specialize in general practice compared to an already low 17 percent across Europe[11], strong actions are needed to improve the attractiveness of general practice as a career (Kringos, Boerma et al. 2015, Windak, Oleszczyk et al. 2015). Exposure to strong role models during undergraduate training is an important factor in specialty choice. Currently, none of the medical schools in the Slovak Republic have a department of primary care (Windak, Oleszczyk et al. 2015). While general practice is included in the medical undergraduate curriculum, a minimum number of teaching hours is not mandated as in other central and eastern European countries. It was reported that current teaching hours are one to two weeks in total. Moreover, in both undergraduate and residency programs, general practice is usually taught by other specialists, rather than academic or practicing GPs. Establishing departments of primary care and substantially increasing the proportion of undergraduate medical curricula devoted to general practice are important measures to raise the profile of GPs with undergraduates. An important postgraduate measure will be to expand the funded residency program in line with workforce modelling. As a shortage specialty, consideration could also be given to raising the GP resident salary so that it is more competitive with other specialties. For example, in the UK, residents in shortage specialties such as general practice are paid a bonus on top of the nationally agreed training salary. This was originally set at 80% of the base salary and has tapered as GP resident numbers have picked up. In the Slovak Republic,

[11] Excluding France and Austria.

such a bonus could be set at a higher coefficient than that used for the minimum salary of hospital doctors[12].

Other primary care professionals can play a much larger role in the provision of comprehensive primary care. With greater care complexity and aging patients with multiple conditions, GPs are unable to meet all the needs of their patients by themselves. To meet these challenges, many countries have expanded the roles of other primary care professionals, such as practice nurses and community pharmacists. For example, in the UK practice nurses lead chronic disease clinics and undertake health promotion and preventive activities such as cervical screening and vaccinations. Community pharmacists undertake medication reviews and treat minor illnesses. Several Cochrane systematic reviews have concluded that appropriately trained non-medical professionals can provide as high-quality care as primary care doctors and achieve as good health outcomes for patients (Laurant, Reeves et al. 2005, Kuethe, Vaessen-Verberne et al. 2013, Weeks, George et al. 2016). In the Slovak Republic, practice nurses play a support role to GPs, rather than run their own clinics. In fact, the Slovak Republic is one of only eight countries in Europe not to provide professional training for primary care or community nurses (Kringos, Boerma et al. 2015). Community pharmacists do not currently have a general practice role. Such professionals are an untapped resource in efforts to provide comprehensive primary care. Pragmatic expansion of their roles, particularly in prevention and chronic disease management, would reduce the dependency on GPs and enable rapid scale-up of comprehensive primary care services.

2.4 Access

The lack of financial barriers to primary care is an enabling factor for comprehensive primary care. With primary care (excluding fee-for-service) included in the social health insurance benefits package and insurance companies prevented from exclusion on pre-existing conditions, financial barriers to primary care are low. Indeed, unmet needs due to financial reasons are low compared to other European countries, without relatively little divergence between high- and low-income groups (Eurostat, 2015 data).

Inequitable distribution of a limited number of GPs, however, impedes the development of comprehensive primary care and requires government intervention. Each of the eight decentralized regions in the Slovak Republic are responsible for maintaining a minimum network of GPs per insured population in their territories (Smatana, Pažitný et al. 2016). This network is supposed to be equitably distributed across the region to ensure access, however GPs tend to congregate in regional capitals and the Western part of the country. This maldistribution leads to GPs in rural areas having to extend the catchment area of their practice population to absorb uncovered residents, worsening access (Smatana, Pažitný et al. 2016). Such poor access is a strong barrier against rural residents consulting GPs for common health problems, rather than the more readily available outpatient and emergency care. This lack of availability leads to high rates of attendance at emergency departments[13] and hospital admissions for ambulatory care-sensitive conditions[14]. In contrast to gynecologists and dentists (who are considered part

[12] Doctors' strikes in 2011 led to a national minimum wage for hospital doctors. Doctors without specialty training earn a minimum of 1.25 times the national wage average of the industrial sector, while those who have completed specialty training earn at least 2.3 times the national wage average (Smatana et al, 2016).
[13] The Slovak Republic had the highest proportion (74%) of patients reporting that they visited an emergency department because primary care was not available out of 26 EU Member States in 2009/10.
14 These are conditions for which high-quality outpatient (mainly primary) care can prevent the need for inpatient care, for example, diabetes mellitus, asthma, COPD, and ischemic heart disease. Many of these are conditions that require active disease management, that is, GPs offering comprehensive primary care

of the primary care/ambulatory care team in the Slovak Republic), the minimum number of adult and pediatric GP posts is calculated by region, rather than by district. Standardizing a minimum network per district across all primary care professionals may encourage regional authorities to improve distribution – for example, only issuing permits only for underserved areas. The plan to mandate GPs who have received subsidized training through the residency program to work in rural areas for several years is also a good approach.

Continued efforts to move towards an efficient hospital sector are an important enabling factor for comprehensive primary care. The number of acute care beds in the Slovak Republic decreased to 4.9 beds per 1,000 population in 2015 from 6.4 in 2009, but remains higher than the EU average of 4.2 per 1,000. Moreover, bed occupancy rates have not increased in this time due to a concurrent shift to shorter stays and day surgery. This supply of unfilled beds may have a dampening effect on efforts to improve comprehensive primary care. A recent study used QUALICOPC scores (see Appendix 1) to investigate the relationship between hospital admissions for diabetes mellitus and primary care dimensions (Van Loenen, Faber et al. 2016). Countries where GPs had broader competencies had significantly lower rates of admissions for long-term complications of diabetes, but this effect disappeared when the results were adjusted for the number of hospital beds in each country. Moreover, countries where GPs had broader competencies had significantly *higher* rates of admissions for uncontrolled diabetes when hospital bed supply was taken into account. The number of unfilled beds and therefore ease of admission may affect both GPs' threshold for referral and hospitals' threshold for acceptance.

2.5 Continuity

Continuity of care is particularly important for the greater involvement of GPs and nurses in chronic disease management. Continuity of care is concerned with the quality of care over time, with different types of continuity capturing the myriad elements of a GP-patient relationship (Haggerty, Reid et al. 2003, Kringos, Boerma et al. 2015). Longitudinal continuity of care implies health care provided by the same professional in the same location over time, which provides the grounds for the unique relationship continuity in primary care: the trust and knowledge of a patient built up by a GP over time. Informational continuity uses information on past medical events and personal circumstances to make current care appropriate for each patient. Management continuity describes a coherent, coordinated approach to treatment of a patient's condition within general practice and across other care providers. While less relevant for acute, resolvable problems, evidence shows that better continuity of care is associated with fewer hospital admissions for ambulatory care-sensitive conditions (van Loenen, van den Berg et al. 2014).

Strong continuity of care in the Slovak Republic provides a foundation for comprehensive primary care. In 2009/10, experts rated the continuity of primary care in the Slovak Republic as one of the highest in Europe (Kringos, Boerma et al. 2013). All GPs have an individual list of patients, enabling a long-term relationship that holds great benefit for patients with chronic conditions. Specialist primary care software is used in most practices to maintain medical records. This functionality could be extended to support preventive and disease management activities, such as creating registers of patients with chronic diseases for routine follow-up. GPs write referral letters to specialists and should be informed about out-of-hours, emergency, inpatient and specialist care.

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should be detecting and aggressively treating patients with these diseases and their associated risk factors, such as high blood pressure, high cholesterol levels, and smoking.

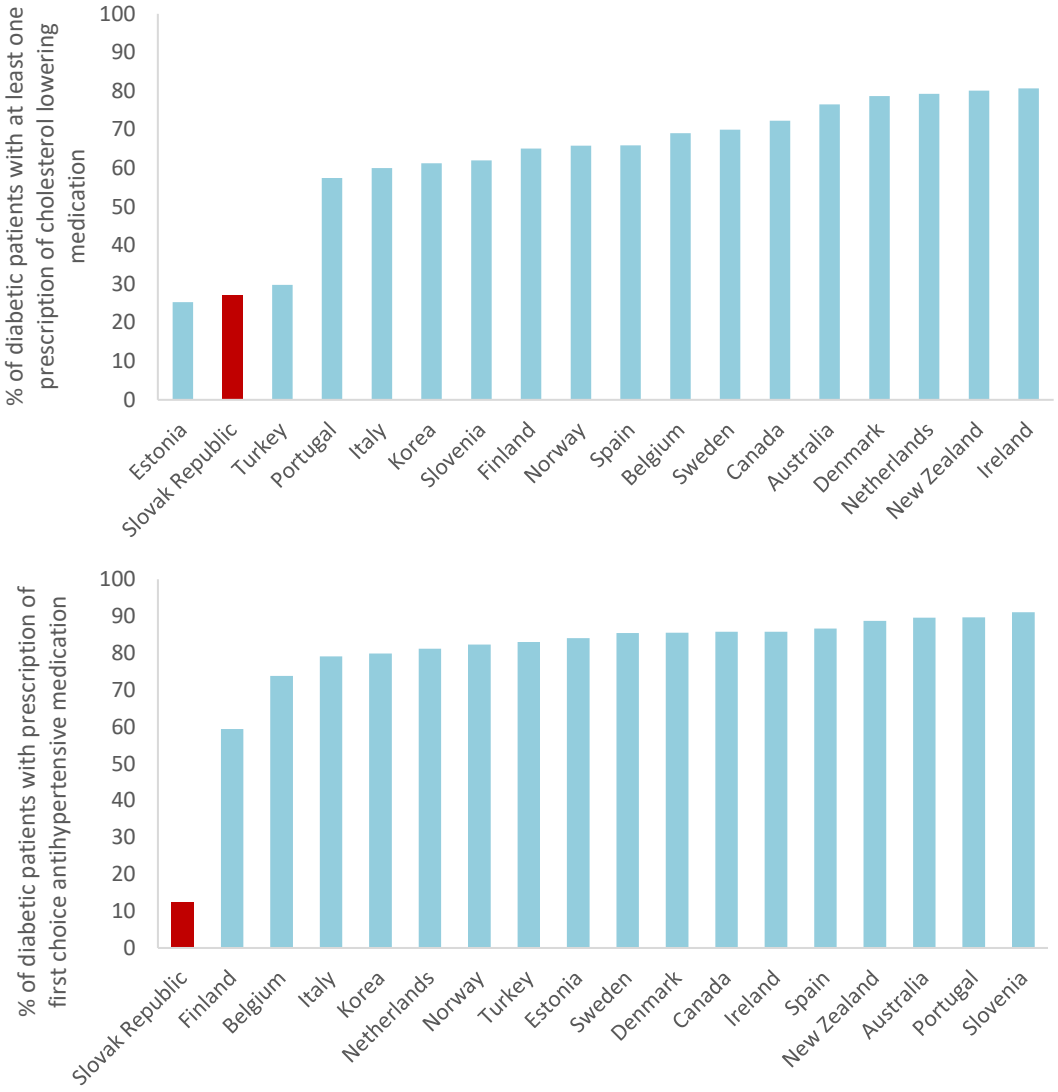
More systematic information exchange as part of greater shared care with secondary care may diminish specialist resistance to more comprehensive primary care. Although a discharge summary or clinic letter is normally prepared for GPs after treatment by secondary care providers, it is usually given to the patient by hand to deliver to the GP on their next visit. Given the informatization of GP practices, a more systematic and timely communication channel would be via secure email. Given the limited number of GPs, it would be feasible to share contact lists with all secondary care providers in the country. This communication could be two-way, with GPs sending referral letters and discussing management plans with specialists via email, as is the case in countries like Belgium, Denmark, Spain and Italy (Kringos, Boerma et al. 2015). Strengthening such communication may help reassure specialists as GPs take on more comprehensive disease management. It may also pave the way to greater shared care between GPs and other specialists. Shared care is the joint participation of secondary care specialists and GPs in the planned delivery of care for patients with a chronic condition, informed by an enhanced information exchange over and above routine discharge and referral letters (Crowe, Cantrill et al. 2010). For example, in the Netherlands, specialists hold joint clinics with GPs in primary care. Such joint consultations are associated with fewer diagnostics in and referrals to secondary care (Winpenny, Miani et al. 2016).

2.6 Coordination

Comprehensive primary care will be difficult to embed without stronger gatekeeping. Patients in the Slovak Republic nominally need a GP referral to access all non-urgent secondary care as part of the benefit package, except to see gynecologists, dermatovenerologists, psychiatrists and ophthalmologists for routine eye examinations (Smatana, Pažitný et al. 2016). Other circumstances in which legislation permits specialist visits without referral include 'sudden changes in health' and 'protective ambulatory treatment'. This broad wording and the preponderance of outpatient specialists means that in practice many patients bypass primary care. This undermines GPs' role as a "medical home" for patients, coordinating care across different providers. While greater enforcement of fees for non-referred specialist care may reduce bypassing, weak gatekeeping is more a symptom of the poor status of primary care in the Slovak health system.

Bold changes to primary care prescribing are needed to support comprehensive primary care. Currently, GPs cannot initiate or change many medications for conditions that are primarily managed by GPs in other countries. For many chronic but non-complex conditions, GPs merely write repeat prescriptions for medications initiated by specialists, who are incentivized by reimbursement of medications given during outpatient visits in addition to fee-for-service payments (Smatana, Pažitný et al. 2016). This restricted prescription authority limits patients' perception of GPs as a medical home and GPs' role in synthesizing care recommendations across providers to provide individualized care. There is also evidence that the current model is not producing high-quality care for patients with chronic conditions, with a low percentage of patients with diabetes mellitus receiving routine preventive medication (Figure 3). Substantial expansion of GPs' prescription authority would greatly benefit comprehensive primary care. For example, primary care reforms in Croatia restricted prescription of medicines in the benefit package to GPs. This reduced bypassing of primary care and improved communication with secondary care. Specialists in the UK do not prescribe medications for patients, but instead recommend new medications or changes to current medications in their outpatient or discharge letters to GPs, who then prescribe the recommended medications for patients. Medications can be prescribed by emergency departments, but only for a few days, forcing patients to return to their GPs for longer prescriptions. In this way, GPs hold an overall list of prescribed medications for that patient, encouraging patients to view GPs as their medical home.

Figure 3 **Prescribing data indicates the need to expand GPs' prescription authority**



Source: OECD Health Care Quality Indicators

Notes: Top panel = Percentage of diabetic patients with at least one prescription of cholesterol-lowering medication. Bottom panel = Percentage of diabetic patients with prescription of first choice antihypertensive medication. All 2015 data except the Slovak Republic (2012) and Spain (2014).

New integrated care centers offer an opportunity to reshape rural general practice, but appear underfunded. Most GPs in rural areas run single-handed practices, whereas GPs in urban areas are often part of multi-specialty polyclinics (Windak, Oleszczyk et al. 2015). New integrated care centers, which seek to shift the provision of general practice in rural areas to the polyclinic model, are under development. The locations for these centers will be large towns that are natural hubs and have poor existing access to care. Each center is expected to host 10 to 20 GPs (adult and child), gynecologists, and other specialists. 140 such centers are planned, with 150 million Euros for construction costs secured from EU Structural

Funds. Running costs may be covered by municipality funds, with the centers operating as social enterprises.

Establishing group practices in integrated care centers would promote coordinated primary care. All GPs and specialists in integrated care centers are expected to also run their own practices, with "outreach" shifts at the integrated care centers adding up to a total of 1.0 FTE adult GP, 0.5 FTE pediatric GP, 0.2 FTE gynecologist and 2.0 FTE specialists. This model runs the risk of perpetuating the disadvantages of single-handed practice, while not exploiting the benefits of multiple GPs. Removing the need to run separate solo practices and establishing group practices as part of integrated care centers is likely to benefit comprehensive primary care. Group practices provide better cover for patients, which may diminish the use of out-of-hours and/or emergency care in the absence of single-handed GPs. Group practices may also enable allocation of different responsibilities between GPs, e.g. quality improvement for patients with diabetes mellitus, for which a single GP may not have the time. Larger patient lists may also produce economies of scale, for example in employing primary care nurses or holding minor surgery clinics. The greater professional interaction and cover in group practices may also increase the attractiveness of general practice as a career. The proposed model could be modified from single-handed practices with sessions in integrated care centers to group practices in integrated care centers with outreach sessions to surrounding areas so as to maintain access.

Such group practices also offer the potential to widen the skill-mix in primary care and mitigate the risk to continuity of care posed by part-time working. In a health system without a strong orientation to primary care, the risk of a polyclinic model is that care by GPs is undermined by ready access to specialists. Incorporating group practices as legal entities which then can buy in services from other professionals may diminish this risk, while also enlarging the primary care workforce as discussed above. For example, in the Netherlands, many GPs employ primary care psychologists on salary. This means that GPs can delegate many patients in primary care with mental health issues, who also have convenient access to treatment. Any savings in reimbursement through productivity gains is retained by GPs. Health insurance companies could then incentivize the provision of specialist outreach to support integrated care centers as "one-stop shops". For example, in Sweden and the Netherlands, specialists undertake clinics in primary care and offer joint consultations with GPs. In Finland, the integration of some small specialist hospitals and municipal health centers led to specialists such as geriatricians being part of new integrated care teams in primary care (Winpenny, Miani et al. 2016)[15]. Group practices would also mitigate the risk to care continuity posed by the high prevalence of part-time working in GPs. Indeed, 30% of adult GPs and 31% of pediatric GPs work less than full-time. In group practices, patients can nominate a preferred doctor but also have access to other GPs who can access their medical records if their preferred doctor is not available.

Basic maternal and reproductive healthcare could be shifted to GPs in the future. Adult GPs in the Slovak Republic do not have responsibility for the maternal and reproductive health of their female patients, which is carried out by outpatient gynecologists. In contrast, pediatric GPs have responsibility for all aspects of their patients' health up. Removing these functions from adult GPs weakens the coordination and gatekeeping aspects of comprehensive primary care. Moreover, access to gynecologists is likely to be limited due to the availability of only 12 FTE outpatient gynecologists per 100,000 population (latest available MOH data, authors' calculations). The limited number of outpatient gynecologists restricts access to essential reproductive and antenatal care (see Section 2.7), particularly in disadvantaged

[15] More examples of efforts to move hospital care into primary care can be found here: https://www.ncbi.nlm.nih.gov/books/NBK361199/

populations. Consideration could be given to the inclusion of these competencies in the adult GP residency program, with referral to outpatient gynecologists for more complex care.

2.7 Scope of practice

The first report concluded that expansion of primary care is required in availability of medical equipment, minor technical procedures, first contact care, and disease management. In comparison to the primary care systems of other European countries, the Slovak Republic is performing less well in these areas. Moreover, when compared to high-performing countries, GPs in the Slovak Republic need to be the first point of call for more common health problems, as well as treating and following up diseases that are routinely managed by GPs in other countries.

Availability of essential equipment and technical procedures are good starting points for action on GP competencies. Primary care in the Slovak Republic was scored markedly lower than the European average in the areas of medical equipment and technical procedures in 2009/10 (Kringos, Boerma et al. 2015). The MOH could expand GPs' scope of practice to include minor technical procedures that are routinely carried out in primary care in other countries. This will relieve the burden on secondary care and improve patient convenience. To receive a license for these procedures, it could be stipulated that GPs have a complete set of essential equipment in their practice and undertake training as part of their continuous professional development. The MOH could consider subsidizing the cost of this training, as well as providing training for practice nurses in some procedures and/or use of equipment. These procedures could initially be incentivized as a large fee-for-service, with inclusion in the primary care service specification for capitated care once these are established as a routine part of general practice. The HCSA could monitor the availability of essential equipment and the quality of these technical procedures, with the results made publicly available to provide reassurance to specialists and the general public.

In particular, screening for cervical cancer could be expanded to GPs and primary care nurses. Screening for cervical cancer in the Slovak Republic comes under the remit of outpatient gynecologists, and is undertaken opportunistically rather than as part of a national screening program (although a national cancer plan is under development). The lack of outpatient gynecologists and an organized program translates into extremely low rates of screening, with less than half of women in the target age group undergoing screening in the past three years in 2015 (OECD/European Observatory on Health Systems and Policies 2017). There are inequities in those accessing screening, with less than ten percent of 20- to 69-year-old women with tertiary education reporting their last smear test being more than three years ago compared to nearly a third of women with the lowest education levels (2014 European Health Interview Survey). Cervical cancer screening is a simple procedure that is carried out by GPs and primary care nurses in many countries. To improve population coverage, this procedure could also be undertaken by GPs and primary care nurses, with appropriate training and assessment of implications for any national screening program[16].

While GPs in the Slovak Republic reported expansion of their role in preventive activities and health promotion, there is evidence that these activities require urgent strengthening. In contrast to other areas of comprehensive primary care, GPs in the Slovak Republic reported a large expansion in their preventive role over the last twenty years (Schäfer, Boerma et al. 2016). This result should be treated with some caution, however, as the 1993 and 2012 scales for preventive activities were less reliable than for

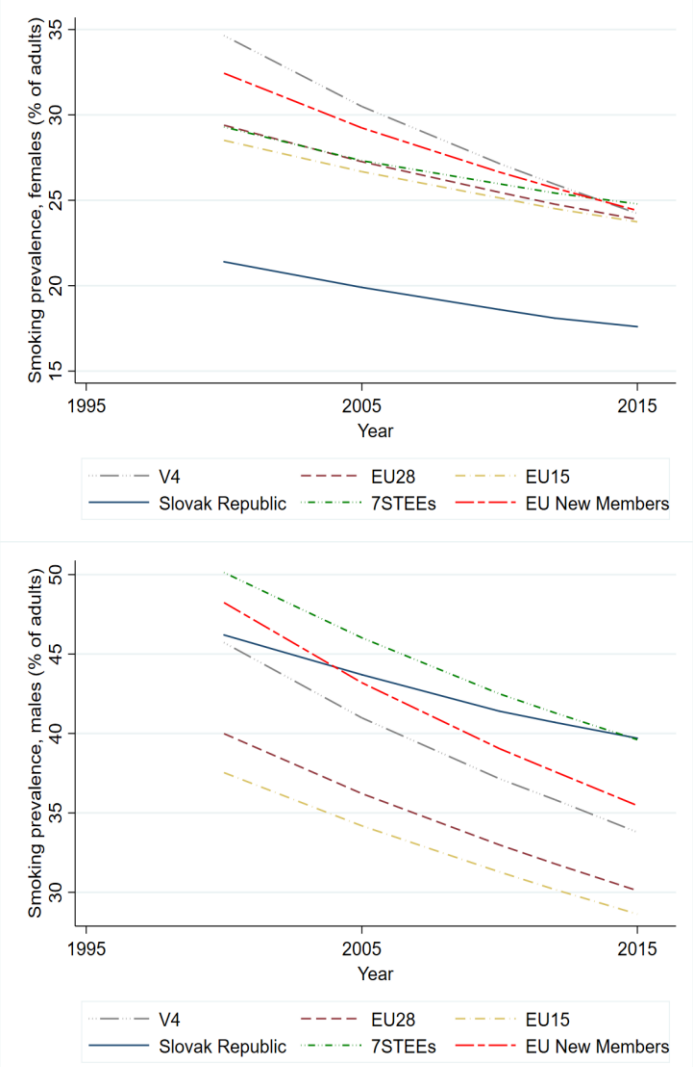
[16] For example, capacity of cytology laboratories and access to secondary care treatment for precancerous changes.

other areas of comprehensive primary care. Expansion or not, there is strong evidence that these activities have not been as effective as in other countries. For example, the Slovak Republic is the only European OECD country which has experienced an increasing mortality for ischemic heart disease since 1990. Furthermore, the proportion of adult smokers has not declined as fast as in comparator countries, particularly in men (Figure 4). While tobacco control policies in the Slovak Republic are not yet as rigorous as in other European countries, GPs are very important in smoking cessation efforts through opportunistic health advice (brief interventions) and providing support for quit attempts (Lancaster, Stead et al. 2000, Zwar and Richmond 2006, Stead, Buitrago et al. 2013, OECD/European Observatory on Health Systems and Policies 2017). Given the dominance of non-communicable diseases in the Slovak Republic, a thorough review of these activities would be of benefit, with a linked strategy to optimize their effectiveness (e.g. through inclusion in performance-related payments).

Figure 4 Adult smoking in the Slovak Republic has not declined as rapidly as in other European countries.

Source: World Development Indicators

Note: Top panel = women, bottom panel = men.



Expansion of first contact care and disease management will require attention to systematic barriers. In contrast to more straightforward aspects of equipment and technical procedures, substantial and enduring change in the role of GPs for common health problems will require multifaceted policy interventions addressing the barriers to comprehensive primary care described above. Yet these are also the areas that are more closely related to the primary care benefits of cost-effective and equitable care.

3. Case studies of comprehensive primary care

This section presents the experiences of four countries who have made strong efforts to improve comprehensive primary care. Two of these, England and the Netherlands, boast health systems that are strongly orientated towards primary care. Despite this, both countries have introduced a number of innovations to further strengthen the comprehensiveness of primary care. The two other countries, Estonia and Lithuania, have expanded comprehensive primary care through a package of policy interventions from a similar baseline to the Slovak Republic. Each case study highlights pertinent aspects and interventions to promote comprehensive primary care, with an emphasis on payment mechanisms. Further case studies of countries that have successfully expanded comprehensive primary care and innovations in this area are available elsewhere[17].

3.1 England

GPs provide wide-ranging and accessible care. GPs function as first point of contact for primary care for children and adults and act as gatekeeper to secondary care. GPs provide the full spectrum of general practice care to patients of all ages including health promotion, preventive care (including vaccinations), acute, chronic and palliative care, and the provision of routine home visits. Many of these services are supported by nurses and allied health professionals linked to the practice. Most chronic conditions, e.g. diabetes mellitus, hypertension, depression, are managed within primary care, with referral to specialists only in challenging cases. Some GPs also provide enhanced services, such as drugs and alcohol service, contraceptive fitting, minor surgery, nursing home care and travel clinics. An average GP working day is from 8.30 till 18.30 hours, topped with extended hours or out of hours, if a GP chooses to provide this service. The average duration of a GP consultation is 10 minutes, and GPs also offer phone consultations.

GPs are promoted as 'Expert Generalists'. To highlight the specialist role of GPs, the Royal College of General Practitioners promotes the training and status of GPs as 'Expert Generalists'. This has meant that general practice is seen as a specialty that requires the depth of training of secondary care specialties. This, together with the relatively high remuneration level of GPs, have raised the status of GPs and positively influenced the position of GPs in the health care system, as well as the trust of the general public and patients in their role as gatekeeper of the health care system.

There is strong undergraduate and postgraduate training in general practice. There are departments of primary care in all medical schools in England, and general practice comprises an average of nine percent of the undergraduate curriculum. Many doctors also work for four months in general practice during their two-year foundation training following completion of medical school. To become a GP, doctors need to complete a three-year specialty training program which is based around knowledge and competencies needed in primary care[18]. Competitive entry to this program requires assessment of candidates for general

[17] More case studies can be found at: http://phcperformanceinitiative.org/blog/2017/07/18/revitalizing-health-all-case-studies-struggle-comprehensive-primary-health-care. Examples of recent innovations in this area from the USA are available at: http://phcperformanceinitiative.org/blog/2017/05/01/what-can-low-and-middle-income-countries-learn-us-primary-care.

[18] The curriculum is available at: http://www.rcgp.org.uk/training-exams/gp-curriculum-overview/online-curriculum.aspx.

and specific competencies, including communication skills. There have been discussions to further expand the specialty training with an additional one or two years. An important part of the training concerns the development of expertise in managing uncertainty while making informed decisions in patient care and encouraging the future GPs to consider care as a whole, from health promotion and prevention to palliative care. Both are important characteristics for comprehensive primary care.

Continuing professional development is required for qualified GPs. To maintain competencies and stay up to date, GPs must complete 250 hours of continuing professional education in a five-year period. In addition to an annual appraisal, each GP has to renew their license to practice every five years, based on a portfolio of evidence, which includes reflective notes on participation in continuing professional development, audit, quality improvement activities, analysis of significant events, evidence of team working and patient feedback.

The primary care workforce is large and diverse. Primary care services are provided by GPs, nurse practitioners and nurses. Nurses can specialize as district nurses (providing care in the community) or primary care nurses (usually attached to practices). Nurse practitioners and primary care nurses lead clinics, particularly monitoring chronic diseases. Practices may host other primary care professionals such as community midwives and counsellors. Other health professionals in the community include community matrons (who support care of complex multimorbid patients), community pharmacists (who provide advice on minor illnesses and medication reviews), and physiotherapists (which can sometimes be accessed without GP referral to reduce musculoskeletal burden on GP workload).

Guidelines are available to support quality primary care. To support GPs in the provision of high-quality, comprehensive primary care, evidence-based guidelines and quality standards are produced and disseminated by the National Institute of Health and Clinical Excellence (NICE) for numerous acute and chronic conditions.

Innovative financial incentives have been used to stimulate comprehensive primary care. The majority of GPs (60% of practices) have a General Medical Services contract, under which income is derived from three parts: the Global Sum, the Quality and Outcomes Framework (QOF), and Enhanced Services. Each include financial incentives for GPs to provide a comprehensive scope of services.

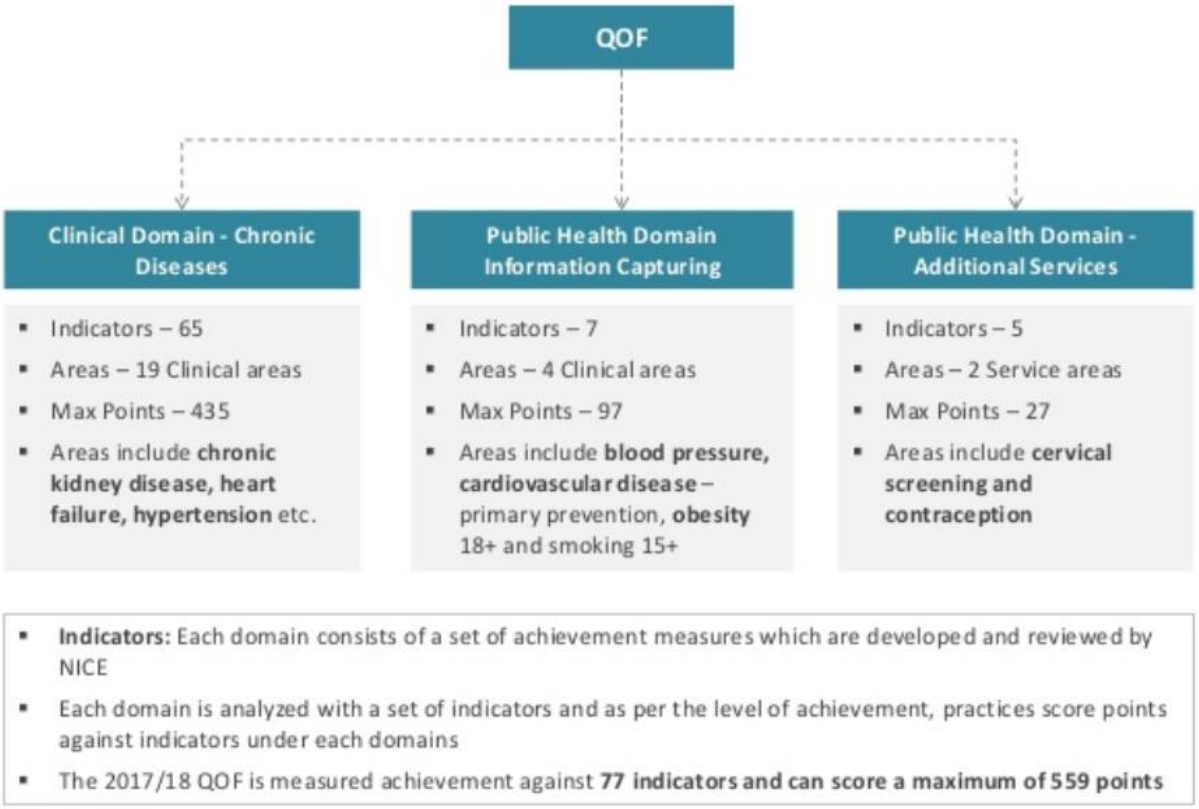
A weighted capitation formula takes into account the profile and needs of the practice's patients, deprivation of the practice locality and the cost of providing primary care services. The Global Sum comprises the largest part of income (around 60 percent), with the total amount determined through a weighted capitation formula using several criteria to promote comprehensive primary care. It covers essential services, such as diagnoses and treatment of common conditions, and also optional additional services provided by practices. These include cervical screening, contraceptive services, vaccinations and immunizations, child health surveillance, maternity and minor surgery services.

A pay-for-performance scheme has been implemented to stimulate GPs to improve secondary prevention and quality of care for chronic conditions. The QOF, a voluntary annual incentive program for GPs in England, accounts for about 15% of a practice's income. Most GPs participate in the scheme, with regulations varying according to UK region. The QOF framework consists of three domains: 1) Clinical Domain: managing some of the most common chronic diseases (e.g. asthma, diabetes); 2) Public Health Domain: capturing information on major public health concerns (e.g. proportion of patients who have high blood pressure or who are smokers); 3) Additional services in the Public Health Domain such as cervical screening or providing contraception (Figure 5). GPs are scored against a set of indicators developed by NICE, with points awarded according to their level of achievement in each domain. Each

point scored is linked to a lump sum payment. In 2015-16, the average achievement score for the participating practices was 532.9 points out of 559. Through an 'exception reporting' possibility, the QOF ensures that practices are not penalized when, for instance, patients fail to attend for review after receiving invitations from the GP, or when medication cannot be prescribed due to side effects or contraindication.

The QOF has been shown to have a positive impact on quality of care and reducing inequalities, but requires careful management. There is a risk that GPs divert attention from non-incentivized areas, which could increase inequality in health care use and reduce overall quality of care. In addition, indicator thresholds need to be carefully titrated to prevent any 'quality ceilings', reducing motivation for further improvement. Evaluations have shown that essential aspects that contribute to the reduction of inequality and positive impact on quality of care and preventive care improvements include active monitoring of the scheme, careful selection and regular management of the indicators and related thresholds, and professional buy-in to minimize 'gaming' of the system.

Figure 5 The Quality and Outcomes Framework



Source: https://www.slideshare.net/citiustech/quality-outcomes-framework-qof-81647848

Fee-for-service payments encourage provision of novel areas of care. About 15% of practice's income come from fee-for-service payments for enhanced services. These are optional services that a GP can provide, including services that were traditionally provided in secondary care. The enhanced services include: 1) *Specific schemes* such as alcohol-related risk reduction; learning disabilities health check; patient participation schemes; extended access hours; 2) *Specific areas of clinical practice* such as detection of patients at risk of dementia, emergency hospital admission or identification and management

of seriously ill patients; 3) *Organizational changes* such as supporting patients to use electronic communications for GP care (e.g. repeat prescriptions, booking appointments) or introducing remote care for monitoring patients.

Most GPs are organized into group practices. More than 88% of general practices are group practices consisting of a group of GPs (on average 5 FTE GPs per practice) working in partnership, some of whom may be salaried by the practice; only 11.8% are single-handed practices. Every citizen has the right to enroll at practice level (and the majority of the population has done so) as opposed to an individual GP; allowing them to see any GP in the practice. An exception to the rule concerns elderly people above 75 years, who require a 'named GP'. Most patients choose to stay enrolled at the same practice for long periods with benefits for continuity of care. The average practice list size in 2017 was 7732 patients, equating to around 1500 patients per GP. General practices define their own catchment area within geographical limits**.**

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3.2 The Netherlands

GPs are the central providers of primary care in the Netherlands. As generalists with a gatekeeping function, they provide a comprehensive scope of services. This is reflected by a very low referral rate: only four percent of all cases presenting in general practice are referred to secondary care. Nearly all citizens are registered with a GP. GPs work closely with other primary care providers such as community nurses, specialist nurses, practice nurses, home care nurses, physiotherapists, (ambulatory) midwives, occupational therapists, speech therapists, dentists, community pharmacists, primary care psychologists, social workers and dieticians.

There is strong undergraduate and postgraduate training in general practice. All medical students are exposed to eight weeks in general practice. To become a GP, doctors then need to complete a three-year competency—based training program[19]. The number of graduates that can enroll in the GP training is regulated by the Ministry of Health, Welfare and Sports. Having passed a competitive selection procedure, annually about 1300 trainees participate in the GP postgraduate training, divided over eight Institutes for Postgraduate Training. Each training institute works closely with the departments of general practice of university medical centers, and is responsible for developing and organizing the GP training of students.

GPs undergo regular revalidation. To practice as a GP, a doctor needs to be licensed by the Registration Commission of Medical Specialists and registered in the Dutch Healthcare Professions Act. The Dutch college of GPs has introduced a voluntary system of accreditation for general practice consisting of 187 criteria. The assessment includes a self-assessment, a face-to-face evaluation and a practice visit, in which individual GP practices are benchmarked against other practices. There is a mandatory system of re-registration. GPs need to complete a minimum of 40 hours of continuous professional development training per year, and at least 10 hours of peer review activities and participate in a visitation program to be eligible for re-registration.

Guidelines have been developed to standardize quality of care and reduce referrals. GPs have to comply with numerous guidelines developed by the national association of GPs and the Dutch college of GPs. These guidelines include treatment and prescription recommendations for many common diseases.

Blended financial incentives are in place for GPs to stimulate comprehensive primary care. For every listed patient, a GP receives a weighted capitation payment, based on the age of the patient and practice location. A fee-for-service is paid for every regular consultation with a GP or practice nurse (part of GP practice). This includes a regular 10-minute consultation at the practice, a home visit or a repeat prescription. A GP receives a larger fee for seeing a patient that is not listed in the paractice. To stimulate the performance of 'modernisation and innovation' procedures that potentially substitute secondary care (e.g. minor surgery) or that improve quality care (e.g. cognitive tests), a GP can receive a specific fee for a defined list of such procedures[20]. Health insurers and GPs can select the procedures and fee levels to be included. This reimbursement method is seen by GPs as a way to increase their income and performance,

[19] The full GP competency profile is available (in Dutch) at: https://www.huisartsopleiding.nl/images/opleiding/Competentieprofiel_van_de_huisarts_2016.pdf

[20] An example list of such procedures for one health insurer is available (in Dutch) at file:///C:/Users/dskri/Downloads/bijlage%201%20voorwaarden%20mi%20en%20verbruiksmaterialen%202018-2019.pdf

and has therefore been successful in increasing the scope of practice of GPs. In addition, additional earnings can be obtained by collaborating with other practices with patients from deprived areas.

Task delegation to nurses is incentivized. Almost all GPs employ practice nurses. GPs retain any savings that result from delegation of appropriate tasks (e.g. chronic disease management, vaccinations) to nurses. This has had a positive impact on the efficiency of general practice management, quality of chronic care, and workload of GPs.

Integrated care is promoted through bundled payments. To overcome the fragmented payment system and stimulate integrated serviced delivery, a system of bundled payments has been introduced. Insurers pay a bundled (fixed) payment to legal entities called 'care groups' (are the principal contracting entity) to cover a full range of chronic disease care services for a fixed period of 365 days. Care groups are made up of multiple healthcare providers but are often dominated by GPs. When a care group signs a bundled-payment contract, they have full clinical and financial accountability for all assigned patients within a chronic care program. The contract is limited to general chronic care (services to manage the underlying disease and reduce risk for complications) and does not include services to address complex complications. Therefore, the model focuses on primary care. Care groups can deliver the care themselves or choose to sub-contract with other providers. At national level, general decisions about the treatment activities to be included were made and codified in a Health Care Standard. The services are covered under the basic benefit package for all Dutch citizens, which they can receive free of charge. The approach of bundled payments has been implemented nationwide from 2010 for diabetes, chronic obstructive pulmonary disease and vascular risk management.

An evaluation after four years since the introduction of bundled payments for type 2 diabetes showed that patient mortality rates and costs have dropped significantly. As the care groups are led by providers that take full clinical responsibility, this has led to fewer low-value services, less overuse of unnecessary services and an avoidance of underuse of high-value services. In addition, beneficial results have been shown for coordination of care, transparency and quality monitoring. Essential elements of its success include:

- The codification: national agreements by all stakeholders on the minimum requirements (services to be provided) for optimal care and set criteria for improvements. By law, the bundled-payment contract must include all services described in the national agreement, which identifies what services to provide but not who delivers those services or where and how they are delivered. In addition, it specifies a standardized minimum data set of quality measures, thereby giving care groups an incentive to adopt innovations and to reallocate tasks so that providers each do the work that best matches their qualifications.
- Fostering transparency through the use of electronic health records. Most care groups have web-based electronic health records where subcontracted providers are required to record their data. This allowed for real-time availability of patient data for primary care providers, which helped to reduce duplication of services, and enabled care groups to create accountability reports for insurers or the general public, as well as to benchmark the performance of care providers.

Challenges for bundled payments include their limitation to primary care and the dominance of process measures. It is currently being explored if care bundles can be extended to outpatient specialist care and inpatient care, to reduce the tendency of GPs to refer more complex (and costly) patients to specialists. Another challenge is to shift quality measures towards outcomes (including those that matter to patients) as opposed to process indicators, such as the percentage of diabetes patients whose HbA1c levels were measured in the past 12 months.

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3.3 Estonia

In the early 1990s, after gaining independence from the Soviet Union, Estonia introduced a strong family medicine focus to its health system. The work of the GPs has now become quite comprehensive, with considerable improvement in health outcomes. This was achieved through multiple strategies.

The primary care workforce was expanded to meet population needs. In 1993, family medicine was introduced as a medical specialty, with doctors either re-training or specializing for the first time in general practice. Between 1991 and 2004, a total of 979 doctors re-qualified as GPs (also known as family doctors) to meet the needs of the Estonian population. Along with new GPs, there is now one GP per 1600±400 inhabitants. Nurses specialize in primary care through a one-year postgraduate training program, with moves to expand their responsibilities, e.g. consultations and counselling to certain groups, such as chronically ill patients, pregnant women and healthy infants.

Comprehensive primary care is supported by legislation. The minimum set of medical equipment in general practice is specified in a specific regulation of the Minister of Social Affairs. In 2002, the Health Services Organization Act was passed stating that primary care providers act as the first point of contact for health care, that most services needed will be provided in primary care, and that GPs are the main providers of primary care. In 2012 the Health Insurance Act was amended to further strengthen the gatekeeping function of GPs by lowering the number of directly accessible specialties, which was also expected to improve the chronic disease management function of GPs and to reduce waiting times in specialized outpatient care. In 2008, 91.5% of total patient contacts were handled solely by GPs without referrals to other providers.

Guidelines have been produced to reduce practice variation and optimize quality of care. To support GPs in the provision of comprehensive, high quality care, evidence based-guidelines have been introduced for the management of acute and chronic conditions. This standardization of care is important for. Evaluations have shown that the guidelines are not always followed because of resource constraints. Nevertheless, for those who follow them, they tend to equip GPs with the knowledge to effectively manage patients within primary care and reduce complications and referrals to medical specialists.

The payment system for GPs has been designed to stimulate them to take more responsibility for diagnostic services and treatment, to provide continuity of care and to compensate them for the financial risk of caring for older people and working in more remote areas. GPs and primary care nurses are contracted by the Estonian Health Insurance Fund and are paid through an age-sensitive capitation (67% of income), fee-for-service payments for selected areas (20% of income), basic allowances (11% of income; including costs of the premises and transport for GPs and nurses), and (since 2006) a 'Quality Bonus Scheme' (QBS, 1% of income, in 2011). This pay for performance system aims to foster disease prevention and the management of selected chronic conditions. The capitation payment system distinguished five payment groups, which were selected to recognize the responsibility that GPs have in routine child health surveillance and chronic disease prevention and management. These are: patients aged up to 3 years, 3-7 years, 7-50 years, 50-70 years and over 70 years. If GPs participate in the QBS and perform well according to the QBS standard, then they can receive additional fee-for-service payments up to 37% of their total capitation payment. This is up to 34% for GPs that do not participate or participate with suboptimal results. This difference was introduced to stimulate participation, and to promote quality improvement. The list of procedures for which GPs receive a fee-for-services is agreed upon between the Estonian Health Insurance Fund and the Estonian Association of GPs and approved by ministerial decree. Over time, as the services by GPs became more comprehensive, the list was further expanded, e.g. with

laboratory and ultrasound tests. This fee-for-service system provides incentives for GP to manage and provide more services within primary care.

The QBS system aims to increase the quality and effectiveness of preventive care and to improve monitoring of chronic diseases. It includes three domains: disease prevention, chronic disease management and additional activities. Each domain has several indicator groups, with a total of 45 indicators. Performance targets have been identified for which GPs can earn points, on an "all or nothing" basis (meaning that if the GP reaches the target, all points are awarded). If they achieve at least 80% of possible points, GPs are eligible for bonus payments. The list of GPs that have received bonus payments is published on the Health Insurance Fund's website. In 2011, the maximum quality bonus payment for all three domains was 4.5% of a GP's total annual revenues. An important facilitator of the QBS scheme has been the electronic billing data collection system, which enables monitoring of a GP's activities. Despite its voluntary nature, nearly all GPs participate in the scheme. In the first year, this was stimulated by giving a small quality bonus (25%) to GPs who participated in it. The scheme costs about 1% of the primary care budget, and is subject to ongoing improvements, as care quality indicators show a mixed picture and signal room for better effectiveness.

GPs are incentivized to communicate with specialists. GPs are encouraged to consult with specialists through e-consultations and e-referrals (funded by the EHIF) to improve patient care. By regularly expanding the list of specialties that are integrated in the system, this measure aims to increase the role of GPs in care management and to reduce the number of specialist visits.

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3.4 Lithuania

Primary care in Lithuania is provided in either municipality-administered or private settings, through GPs or primary care teams that have a similar composition to the Slovak Republic. Municipalities support community primary health centers, which provide around 70% of all primary health care across municipalities. Although GPs provide a relatively broad set of services, the hospital sector in Lithuania is still rather extensive. To counterbalance this, various strategies have been implemented to encourage GPs and other primary care providers (e.g. nurses) to take a larger responsibility for their listed population, particularly chronic patients.

The primary care workforce was expanded, particularly the role of nurses. Three-year postgraduate training in family medicine was introduced, with the number of GPs increasing three-fold between 2001 and 2015. The current national health program aims to increase the number and responsibility of nurses in primary care. This is supported with the introduction of specialist nurse training, including specialized diabetes and cardiology nurses to provide services for chronic patients.

The MOH developed a strategy and service specifications for primary care. Operational service standards for GPs were first defined in 1996, with GPs taking on new areas such as pediatrics and gynecology. In 2005, all tasks and duties of GPs were described in a medical norm produced by the MOH. In 2007, the MOH produced a strategy on primary health care development for 2007 to 2015. This focused on provision of primary health care for an individual, including physical and mental care, dentistry, care by GPs and nurses. The strategy included a situation analysis, development aims and objectives, service providers, evaluation criteria and implementation plan.

There was a shift from partial to complete gatekeeping. All GPs have a patient list system. Since 2002, GPs have functioned as complete gatekeepers, allowing patients to access specialist services for free after a referral from the GP. However, as in the Slovak Republic, direct access to medical specialists can still be obtained through out of pocket payments. The introduction of the gatekeeping role has increased both the workload and the scope of practice of GPs, particularly in areas such as diagnosis and disease management.

Fee-for-service payments have been extended to support comprehensive primary care. In addition to the predominant capitation-based reimbursement system, a list of activities for which primary care providers receive a fee-for-service was introduced in 2003. Over time, this scheme has been further extended with additional quality indicators, such as completion of children's preventive health checks, hospitalization rate for individuals with chronic diseases (hypertension, diabetes mellitus, bronchial asthma, COPD) and participation in cervical cancer and prostate cancer preventive programs. Recent evaluation reports show that the strong focus on chronic disease management in primary care has led to a reduction in avoidable hospitalization rates, particularly for congestive heart failure, asthma and COPD.

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4. Priorities for comprehensive primary care reform

This section examines the impact of expansion of GP competencies in Europe over the last two decades. Two large cross-sectional surveys twenty years apart asked GPs in European countries about their scope of practice (see Appendix 1 for detailed description). The first, the European Task Profile Study, collected data in 1993 and 1994. The second, the QUALICOPC Study, collected data between 2011 and 2013. Both studies used the same questions to assess and score GPs' involvement across different areas of comprehensive primary care in 28 European countries. These included the extent to which GPs are patients' first contact for common health problems (first contact care); undertake the management and follow-up of a range of acute and chronic conditions (treatment of diseases); perform minor medical technical procedures (technical procedures); and carry out primary and secondary prevention (preventive activities).

The extent to which expansion of GP competencies can explain changes in health expenditure and selected health outcomes was investigated using regression analyses. Changes in the scores for each area were used as the explanatory variable in a series of regression analyses. The outcome variables were selected according to the plausibility or evidence of an association with comprehensive primary care (see first report). These included:

- Change in total health spending per capita (expansion of GP involvement in all four areas would be expected to contain health spending through more health problems resolved at a less costly level of care, less inappropriate or avoidable use of secondary care services, earlier detection and treatment of diseases leading to less costly treatment with later presentation)
- Change in premature deaths due to cerebrovascular disease (mainly stroke): greater preventive care and disease management by GPs should improve risk factors for stroke, such as high blood pressure and smoking.
- Change in premature deaths due to cervical cancer: more technical procedures performed by GPs may include cervical cancer screening, which could improve population coverage
- Change in premature deaths due to diabetes mellitus: a greater role in disease management by GPs should improve the outcomes in common conditions such as diabetes mellitus.
- Change in premature deaths due to ischemic heart disease: greater preventive care and disease management by GPs should improve risk factors and outcomes in ischemic heart disease

Ideally, hospital admissions or use of emergency care for the selected conditions would have been used as more upstream outcomes, however these were not available over the relevant period (1993 – 2013). The analyses also controlled for variables that may influence the outcome variable to isolate the effect of expansion in GP competencies. These variables included change over the same period (nearest available years) in GDP per capita, the proportion of the elderly population (over 65-year-olds), and life expectancy. Unlike the other conditions, cervical cancer is more common in younger women and is often the subject of a national screening program. Therefore, the proportion of elderly population was replaced with the proportion of women who in 2014 reported screening for cervical cancer in the previous two years for these analyses in order to control for a strong national screening program. Following Schafter et al., the 1993 score for each area was also included, as those countries with higher baseline scores would have less room for improvement over the following two decades. More details on the analysis are included in Appendix 2.

The only competency area that explained any of the outcomes was change in GP preventive care (Table 2). Out of the four areas of comprehensive primary care, only change in preventive activities showed any statistically significant relationships with the outcome variables (Table 1, only results for preventive activities shown). Expansion of preventive care between 1993 and 2012 was associated with less health spending per capita in 2012 compared to 1995. Greater GP involvement in preventive care was also associated with fewer years of life lost to cerebrovascular disease in 2016 compared to 1990. Greater GP involvement in preventive care was also associated with more years of life lost to diabetes mellitus, which is likely to be due to increased identification of patients with diabetes as part of preventive care.

This suggests that preventive care is a priority for comprehensive primary care reform in the Slovak Republic. The other areas of comprehensive primary care – technical procedures, first contact care, and disease management – may be associated with improvements in efficiency and health outcomes that were not discerned in this analysis. However, given the growth in health spending and disease burden[21] in the Slovak Republic, these results suggest that investments in GP preventive care offer substantial returns.

Table 2 Relationship between changes in GP preventive care and health system outcomes

Independent variables	Percentage change in total health expenditure per capita, 1995-2012	Percentage change between 1990 to 2016 in years of life lost to:			
		Cerebrovascular disease	Cervical cancer	Diabetes mellitus	Ischemic heart disease
Percentage change between 1993 and 2012 in:					
GP preventive activities	-0.129*** (0.038)	-0.022** (0.008)	0.001 (0.010)	0.031** (0.013)	-0.000 (0.010)
GDP per capita (PPP)	2.034*** (0.410)	0.379*** (0.089)	0.303*** (0.105)	0.238* (0.136)	0.283** (0.107)
≥65-year-old population	-0.447 (1.199)	0.732*** (0.259)	-	0.318 (0.397)	0.956*** (0.314)
Life expectancy	-8.299 (7.811)	-6.818*** (1.687)	-3.780* (2.006)	6.611** (2.589)	-3.359 (2.046)
Women with screening in last two years (2014)ǂ	-	-	0.199 (0.308)	-	-
1993 score for GP preventive activities	0.173 (1.287)	-0.177 (0.278)	0.096 (0.331)	-0.082 (0.427)	0.361 (0.337)
Constant	1.446*** (0.496)	-0.326*** (0.107)	-0.316** (0.127)	-0.666*** (0.164)	-0.627*** (0.130)

Source: See Appendix 2.
Notes: 28 observations (countries). Standard deviations shown in brackets. PPP = purchasing power parity. GDP and total health expenditure in constant 2011 USD. **significance at 0.05 level; ***significance at 0.01 level; ǂPercentage of women aged 20 to 69 years old who, in 2014, reported having undergone a cervical smear test within the previous 2 years.

[21] In 2016, ischemic heart disease and cerebrovascular disease were the two leading causes of premature mortality in the Slovak Republic (Global Burden of Disease Collaborative Network 2018).

5. Conclusions and recommendations

While there are many conditions in place to support comprehensive primary care in the Slovak Republic, several systematic barriers require attention. These include:

- A small and aging primary care workforce, with few GPs and a restricted role for other primary care professionals;
- Poor status of general practice, limiting the attractiveness of the career to new doctors;
- Less effective payment mechanisms, including an under-developed capitation formula, limited pay-for-performance criteria; and a fee-for-service list that may lead to perverse effects;
- Low spending on primary care;
- No strategy or service specifications for primary care;
- A limited role in quality management by the MOH;
- Poor access to primary care, particularly in rural areas;
- Infrequent communication with secondary care specialists.

Experiences of other countries demonstrate that a coordinated package of bold reforms is required to implement comprehensive primary care, which extends beyond GPs. Case studies of comprehensive primary care in England, the Netherlands, Estonia and Lithuania reveal long-standing and explicit commitment by policymakers to strengthening primary care in all four countries. This commitment was then translated into effective action through a series of reforms dedicated to improving the status of primary care in each health system. The perspective of primary care shifted from primarily GP-delivered to a team of health professionals working together to meet most patient needs at the most appropriately level of care. Common elements to these reforms include:

- Legislation and service specifications that stipulate the central role of primary care and the tasks of GPs
- Efforts to secure the future pipeline of GPs and nurses;
- Competency-based GP training;
- Expansion of the role of other primary care professionals;
- Guidelines to reduce variation in care quality;
- Capitation formulae with nuanced criteria for adjustment;
- Performance-linked or bundled payments that incentivize quality of care for chronic conditions, prevention, coordination;
- Fee-for-service payments that extend the scope of practice;
- Strong governance of pay-for-performance schemes by the MOH;
- Promotion of communication between GPs and secondary care specialists.

Based on the findings of this report, recommendations are made to expand comprehensive primary care in the Slovak Republic (Table 3). These recommendations are listed according to primary care dimensions for easy reference. Given that primary care requires urgent reform, all recommendations are for the short to medium term, rather than long-term measures. Many of these recommendations provide a foundation to meet not just current, but future health system challenges. For example, more diverse primary care teams, improved information systems, patient involvement, reduced primary-secondary care interface are all building blocks to manage challenges such as aging populations, rising patient expectations, and greater complexity of care.

Consultation with GPs, specialists and patients on the rationale and evidence for expanded GP competencies could be undertaken alongside reforms. Historical evidence indicates that reforms in this area will require a compelling vision, a strong mandate, and a willingness to work through potential barriers to change. The evidence from the first report can be used as a basis for a public communications campaign to lay the ground for reforms in this area. Moreover, consulting with patients may bring additional evidence, for example the impact of access constraints or the transactional nature of patient-specialist relationships compared to the relational continuity of a regular GP. This type of testimonial, narrative-based evidence can be particularly persuasive and salient in stakeholder engagement. The Slovak Patient Society may be a useful partner in these activities. Finally, early engagement with secondary care specialists will be important to create buy-in for any reforms to GP competencies.

It has been noted that strong primary care does not just emerge spontaneously, but requires an interventionist policy. These two reports bring together the evidence and potential policy routes for effective interventions to expand GP competencies in the Slovak Republic.

Table 3 Short- and medium-term recommendations to expand comprehensive primary care in the Slovak Republic

Dimension	Short-term recommendation	Medium-term recommendation
Governance	• Develop costed primary care strategy to cover period of GP competency expansion • Develop service specifications for primary care that describe tasks and duties of primary care workforce, including role (if any) of outpatient gynecologists • Ensure primary care representation on relevant MOH committees	• Consider legislation that sets out central role of primary care and GPs in health system • Establish department of primary care in MOH • Ensure guidelines are available for majority of common conditions in primary care, including pharmaceutical and treatment recommendations
Economic conditions	• Develop more complex fixed capitation formula to incentivize comprehensive primary care and access in underserved areas • Extend criteria used for variable capitation payments to incentivize preventive care • Review services included in fee-for-service payments with view to removing prevention and disease management activities and including minor technical procedures	• Consider bundled payments after progress on comprehensive primary care and establishment of integrated care centers
Workforce	• Undertake an assessment of primary care workforce capacity, including role of primary care nurses and allied health professionals • Revise adult and pediatric GP curricula to align with skills required to provide comprehensive primary care • Set up specialist training program for primary care nurses	• Establish departments of primary care at medical universities, with expansion of undergraduate teaching and teaching led by GPs
Access	• Incentivize practice in under-served areas through capitation formula and group practices in integrated care centers	• Continue reduction in hospital bed supply

	• Standardize legislation on minimum networks so that minimum GP posts are calculated per district rather than region • Mandate period of rural service after completion of residency program	
Continuity	• Set up secure email system between GPs and local secondary care providers	
Coordination	• Enlarge prescription authority of GPs so first-line medications for common health problems, e.g. hypertension, can be initiated or changed in primary care • Consider restricting prescription authority so that only GPs can prescribe outpatient medications on advice from hospital and outpatient clinicians	• Establish group practices of GPs in integrated care centers • Consider strengthening gatekeeping role with revised legislation on specialist access
Scope of practice	• Review effectiveness of GP prevention and health promotion activities and develop strategy to improve performance • Legislation on GP essential equipment and technical procedures, with associated training programs • Expand cervical cancer screening to GPs and primary care nurses as part of national screening program, with associated training programs and linked cytology laboratories.	• Incorporate maternal and reproductive health competencies into GP residency program and task profile of new GPs

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Appendix 1 Comparative studies of European primary care

Three cross-country studies are pertinent to this report. All these studies were coordinated by the Netherlands Institute for Health Services Research (NIVEL) and carried out by a network of institutes and organizations across participating countries. While these studies have many strengths, it is also important to be aware of their limitations when drawing conclusions from their results.

European Task Profile Study

This aim of this study (1993 to 1994) was to describe and examine differences in the service profiles of GPs in European countries. A standard questionnaire investigated four key areas of GP activity: first contact with health problems, performing minor surgery and medical techniques, management and follow-up of diseases, and preventive medicine. The study covered 32 countries, including 26 EU member states (Malta and Cyprus were excluded), Iceland, Israel, Norway, Switzerland, Turkey, and Ukraine. A national random sample was obtained in most countries, with responses received from 7,233 GPs in total.

Strengths: First study of its kind; sets baseline for comparison over time

Weaknesses: Concept of GP's role and results now outdated

PHAMEU Study

The aim of this study (2007 to 2010) was to provide comparable data and show variations and models of provision and good practice in primary care in European countries. PHAMEU covered 27 EU member states (Croatia was excluded), Turkey, Iceland, Norway, and Switzerland. The team first developed a measurement instrument (PC Monitor) applicable to all national situations in Europe and able to capture the essential elements of primary care through a process of literature review and expert consultation. Data for the PC Monitor indicators were gathered in 2009/10 from national and international databases and literature, as well as consultation with national experts. Each indicator was then scored as one (weak), two (medium), and three (strong). The score for all indicators for each dimension were then analyzed in a two-part model to derive a reliable scale for both individual dimension and overall country scores.

Strengths: First database of its kind enabling comparison between different primary care systems; detailed data on standardized dimensions and indicators of primary care across countries

Weaknesses: Data availability was limited in many areas, with reliance on potentially subjective opinions of national experts; only between-country comparison possible rather than within-country analysis; summary measures do not capture heterogeneity in primary care within a country.

QUALICOPC Study

The aim of this EU-funded study (2010 to 2013) was to evaluate the performance of primary care systems in Europe in terms of quality, equity, and costs. It covered 34 countries in total: the same 31 European countries as PHAMEU plus Australia, Canada, and New Zealand. In each country, a survey was undertaken on a nationally representative sample of GPs and their patients. Four questionnaires were used: (a) one filled in by a GP on structural and process dimensions of primary care, (b) one filled in by nine patients of that GP after a consultation, (c) one filled in by one patient of that GP on what they consider important in primary care delivery, and (d) one filled in by the GP on characteristics of their practice. Data collection took place between October 2011 and December 2013—6,044 GPs responded to (a) and (d), with completion of (b) by 62,000 patients and (c) by 7,300 patients.

Strengths: Captures patient perspectives; most questions on comprehensive primary care were the same as in the European Task Profile Study, enabling comparison over two decades.

Weaknesses: Target sample size for patients and GPs not reached in many countries; only visitors to GPs were surveyed, rather than all registered patients or general population; assessment based on perceptions of GPs and patients rather than objective measurement; and patients' perceptions of comprehensiveness of primary care were assessed through only two questions (whether GPs ask patients about additional problems and whether there is opportunity to discuss psychosocial problems).

Appendix 2 Further details of regression analyses

Datasources

Data for 28 European countries on:

- Scores for GP scope of practice in QUALICOPC and European Task Profile studies (Schäfer, Boerma et al. 2016)
- Country-level health expenditure per capita, health outcomes, and healthcare resources extracted from public databases (World Bank Databank, Eurostat, IHME, OECD)

Observations

28 European countries, including:

- Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom

Outcome variables

- Change in health spending: percentage change in total health expenditure per capita purchasing power parity, 1995 to 2012 (constant 2011 USD) (World Bank).
- Change in health outcomes: percentage change in years of life lost to selected conditions (cerebrovascular disease, ischemic heart disease, cervical cancer, diabetes mellitus) between 1990 and 2016 (IHME Global Burden of Disease).

Explanatory variable

- Percentage change in country-level scores for GP involvement in first contact care, treatment of diseases, minor medical technical procedures, and preventive activities between 1993 and 2012 (Schäfer, Boerma et al. 2016)

Control variables

- Country-level scores in treatment of diseases, minor medical technical procedures, and preventive care in 1993
- Percentage change in GDP per capita PPP between 1993 and 2012 (constant 2011 USD) (World Bank).
- Number of computed tomography (CT) scanners per 100,000 inhabitants in 2015 (OECD).
- except for regressions using cervical cancer outcomes.
- For all regressions except those using cervical cancer as an outcome: percentage change in share of population older than 65 between 1993 and 2012 (World Bank)
- For regressions using cervical cancer as an outcome: percentage of women aged 20 to 69 years old who, in 2014, reported having undergone a cervical smear test within the previous 2 years (Eurostat)

Analysis

- Linear regression analysis undertaken in Stata