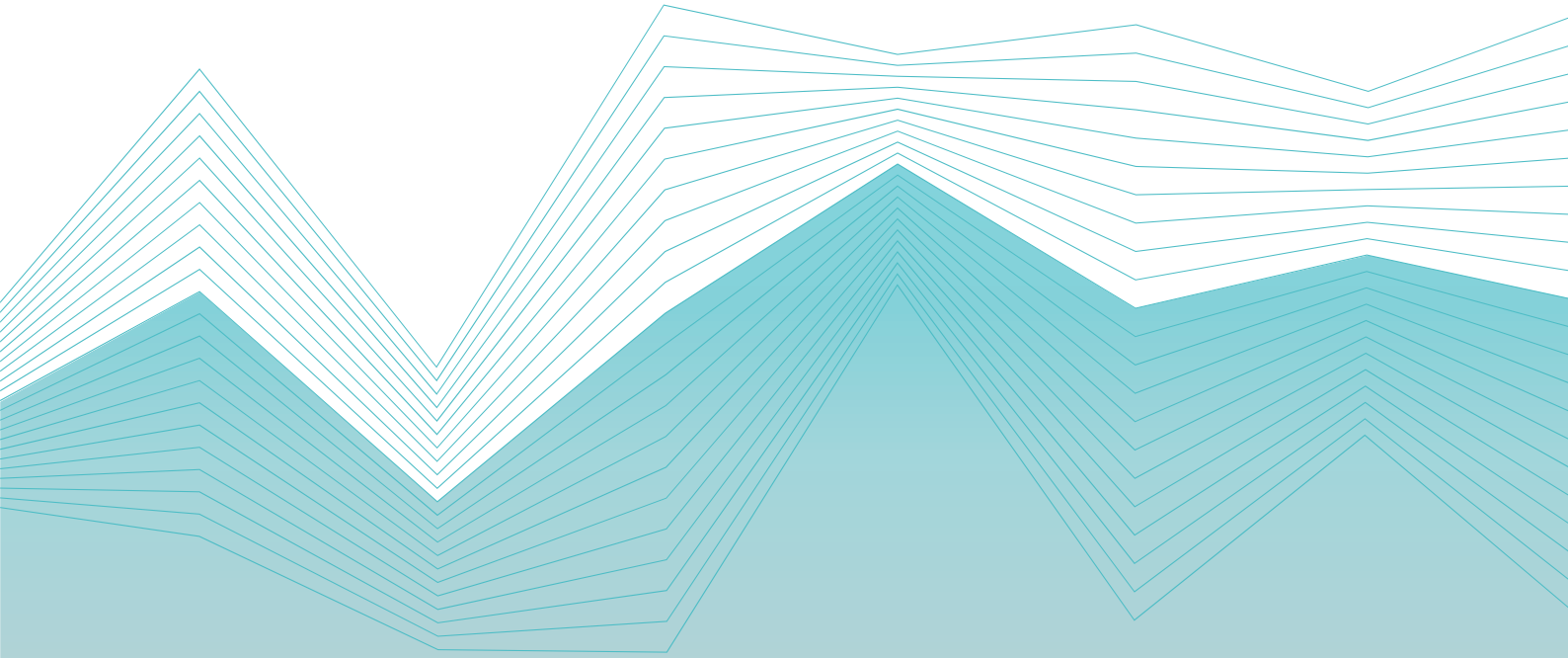
SiSPC, a system of indicators to characterise the strength of primary care

Report 1: development of the framework and indicators



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SiSPC

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Introduction / Preface

In this report we give account of the stepwise development of an up-to-date set of Systemic Indicators for the Strength of Primary Care, called SiSPC. Although results of research with SiSPC are extremely relevant to policy makers, the target population of this (technical) report is primarily the research community.
The development of SiSPC started from the growing awareness that a well-developed system of primary care is considered to promote the efficiency and effectiveness of health care systems overall. Particular features of primary care, like continuity and coordination across levels of care, can result in better outcomes not just in situations of complex and long-term care but also in prevention. The SiSPC indicators have been developed to compare countries on their primary care systems. We consider the strength of primary care to be a latent concept that is not directly measured, but that emerges from indicators for a mix of characteristics of primary care. Our initiative to develop an updated system of indicators arose from the need to have data available to characterise today's primary care systems for use in international comparisons and cross-country learning. While aiming to maintain continuity, we took previous frameworks and studies as a starting point that we subsequently modified and provided with new elements. The reason to develop SiSPC was in the OECD PaRIS surveys, the international study aiming to collect and exchange information on the quality and performance of primary care from the perspective of people living with chronic conditions. However, the focus of SiSPC is broader than this category of patients as it aims to include primary care's broad attention to prevention, treatment of both acute and chronic disease, and to people of all ages.

SiSPC data can be used in relation to the PaRIS project, carried out by an international consortium led by Nivel, to analyse survey data in participating countries. Information, gathered through SiSPC indicators about the strength of primary care systems, will be used to understand differences between countries in patient-reported experiences and outcomes as well as services offered by family physicians (FPs). SiSPC data can also be related to other outcomes, such as unmet needs or untreated conditions, or to aggregated outcomes, such as the incidence of primary care sensitive conditions or the use of hospital emergency departments.

This report details each step the research team has made to arrive at the SiSPC indicator system. Readers may want to focus on particular steps only, rather than reading the report from cover to cover. The main interest is likely to go to the finish of the voyage: the final system of indicators and how these are measured, which is presented in Chapter 7.

The authors

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Summary

Roots in PHAMEU

Our starting point was the PHAMEU (Primary Health care Activity Monitor Europe) indicator system (Kringos et al., 2010). It was developed between 2007 and 2010 with data referring to the situation in the beginning of the 21st century. The basis was a systematic review on primary care (Kringos et al., 2010b). The separate indicators were grouped into, what was called, dimensions of the structure of primary care (governance, economic conditions, workforce development), the processes of primary care (access, continuity, comprehensiveness, coordination) and outcomes (quality, efficiency, equity). All indicators were measured at the level of health systems in countries. Results of the PHAMEU dataset were used in policy development and in international studies to provide system level indicators for the strength of primary care to explain variations in organisation of primary care practices and patient experiences (Schäfer et al., 2011; 2013; 2015. Hansen et al., 2015).

The OECD PaRIS surveys as our reason

The motivation to start SiSPC was the above-mentioned PaRIS project. In many countries the strengthening of primary care is part of a strategy to cope with challenges of rising health care demand and cost, while aiming to maintain and improve the quality of care. To guide this process, countries may benefit from comparisons of care experiences and health-related behaviours and outcomes reported by patients. The PaRIS project, which included 19 countries in its first round, aims to provide national and international policymakers with such information. The aim of SiSPC is to be broadly applicable and to collect data in more than these 19 countries.

Using indicators on primary care in a multi-level approach

A multi-level approach here refers to how subjects of a study are clustered or nested. In the PaRIS study, for example, subjects are *patients living with chronic conditions* who are nested in *primary care practices* which, in turn, are nested in *countries/health care systems*. Differences in the patient-reported experiences and outcomes of care can both be described *within* countries, for instance between primary care practices or providers, and *between* countries. Results of this approach enable countries to learn from each other.

Requirements to and content of SiSPC indicators

At the onset of their development, we formulated the following requirements to the indicators.

- They should focus on the health system level (not on the level of care provision).
- They should reflect current challenges and the role of primary care in health systems.
- They should have a broad focus, including long term care, acute care and prevention.
- They must be relevant to and applicable in a diversity of health systems.
- Data collected with the indicators should be recent, valid, comparable and evidence-supported.
- Collected data must be concrete, measurable and as much as possible from easily accessible sources.

The way we structured the indicators provides a global insight in their content. We distinguish three Domains as well as the Context of primary care to indicate the strength of primary care. The three Domains and the Context have been broken down to Dimensions, as follows:

DOMAIN 1. **Structure of Primary Care**
Including 4 Dimensions: Governance; Economic & Financial Conditions; Workforce Development; Information Structures.

DOMAIN 2. **Systemic Aspects of Facility Management**
Including 4 Dimensions: Scale of PC Delivery; Systems / structures for Quality Assurance and Safety; Practice Management Incentives; Community Involvement

DOMAIN 3. **Systemic Aspects of Care Delivery**
Including 4 Dimensions: Accessibility; Comprehensiveness; Continuity; Coordination.

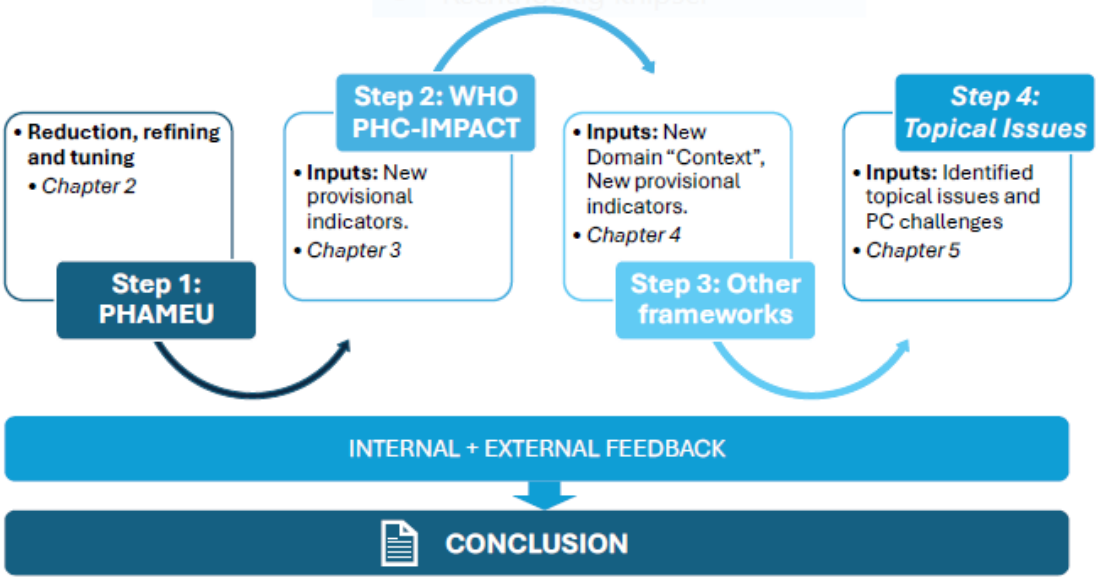
BACKGROUND **Context of Primary Care**
Including 7 Dimensions: Population; Economy; Social- and cultural values; Welfare benefits and social protection; Education (-related) resources; Lifestyle; Health system overall.

The indicators of the Context of Primary Care should be distinguished from the others, as these provide a general view of country characteristics and are not part of the indicators for the strength of primary care. Still, they are valuable to answer specific research questions, and they can also be used as confounders in statistical analyses of the strength of primary care. Besides, indicators for the results of strong primary care – the outcomes – have been excluded from SiSPC. Each dimension in the above list has been operationalised into measurable indicator items with possible values or questions with answering categories. These are specified in Chapter 7.

How we developed the indicators

At that time, the PHAMEU framework and indicators were innovative and effectively measured the strength of primary care systems in 31 European countries. However, today most data are rather outdated and recent developments and topical subjects may be insufficiently represented. Furthermore, previous applications showed that some items are redundant or only modestly contribute statistically to a dimension. Finally, the context of primary care was not represented at all. Therefore, an updated and extended dataset was needed. The steps we undertook to develop SiSPC are represented in the diagram below.

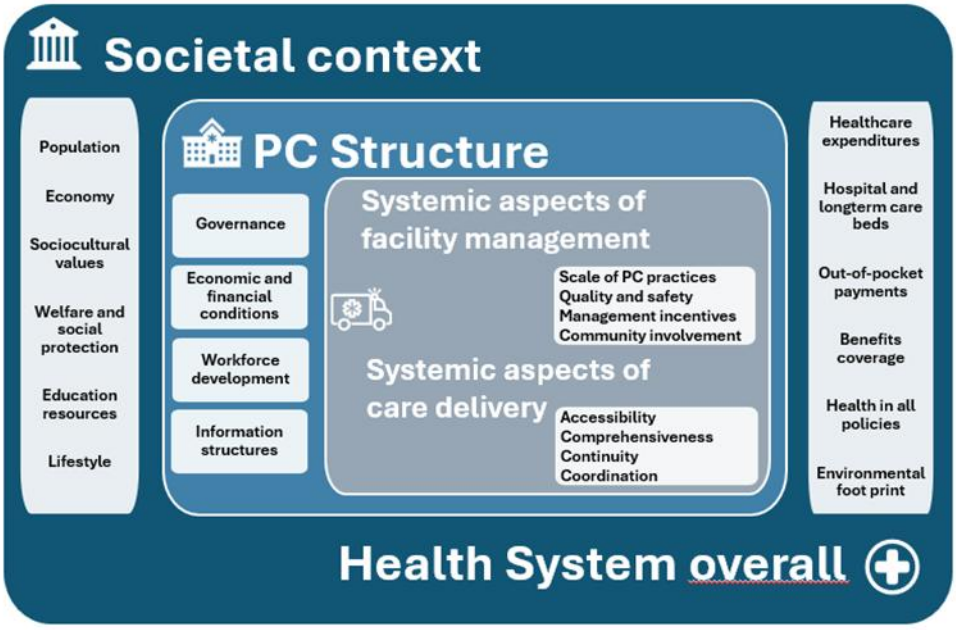
Figure 1 Subsequent steps made in the development of the SiSPC indicator system



As a first step, we undertook a critical (statistical) review of the PHAMEU indicators by examining their contribution to overall dimensions, their (internal) consistency and their usefulness for our current purpose. Indicators that vary between care providers or patients, and hence cannot be seen as system characteristics, have been omitted (see Chapter 2). The next step was to merge the PHAMEU indicators that were retained, with selected indicators from WHO PHC-IMPACT (WHO European Primary Health Care, Impact, Performance and Capacity Tool) (Chapter 3).

Subsequently, we undertook a scan of the literature to identify other frameworks and indicator sets, elements of which were fed into the provisional structure (Chapter 4).
In a next step, we identified topical issues in primary care through a review including authoritative reports of professional and international organisations that identify insights, visions and innovations. Topics have been described and subsequently examined in the light of the requirements (Chapter 5).
Subsequently, the draft indicator system was reviewed by external experts in a large number of countries. Internal and external feedback has been discussed and processed (Chapter 6).
The SiSPC framework is summarized in Figure 2, while the full system of indicator items, including the values and answering categories, has been provided in Chapter 7.

Figure 2 The SiSPC framework



Discussion and way forward

In the final Chapter 8 we discuss our approach in developing SiSPC, including a reflection on strengths and limitations, and sketch the way forward, in particular the actual collection of data with these indicators. As much as possible, data will be collected from international databases and other online available sources that can be accessed centrally by the SiSPC team. For indicators that require collection of data or information within countries, national experts will be involved. These are part of the networks of the authors of this report and their institutes, as well as National Project Managers (NPMs) of the PaRIS project and their teams. The actual data collection with the SiSPC system of indicators and the presentation of results are the subject of a separate report.

1 Background and overall approach

1.1 Measuring 'strength of primary care'

As SiSPC aims to be used in international comparisons, we want to be able to assess with this system of indicators which health care systems have stronger primary care. We started the development of SiSPC from existing definitions and frameworks of primary care. In our view, 'strength of primary care' is a latent concept that is not directly measured; it is indicated by a range of characteristics within a number of areas (domains and dimensions). These characteristics vary between health care systems and a higher composite score indicates a stronger system of primary care.
Based on previous research, we assume that health care systems with stronger primary care are better able to provide high quality first contact care for people living in the community, which implies better access to care, more continuity of care, more comprehensive care, and better coordination of care.

1.2 Changes in PC service delivery require monitoring

Societal changes, for instance related to demography and lifestyles, have resulted in higher – and sometimes changed - demand for health care services and cost of health care. As a strategy to cope with these challenges, countries can strengthen their primary care system in order to offer the required services, for example by interdisciplinary teams, while maintaining or even improving the quality of care. To that end, primary care service delivery may need to be re-organised. New modalities of care can be needed, with professions (such as dietitians, psychologists, physiotherapists, nurses) that used to be not or less involved in primary care. The scale of primary care practice may become larger, with group practices and health centres. Furthermore, approaches like population health management and task-shifting among professions, may be implemented. In this changing healthcare landscape, SiSPC aims to provide an up-to-date framework and relevant indicators to monitor primary care systems.

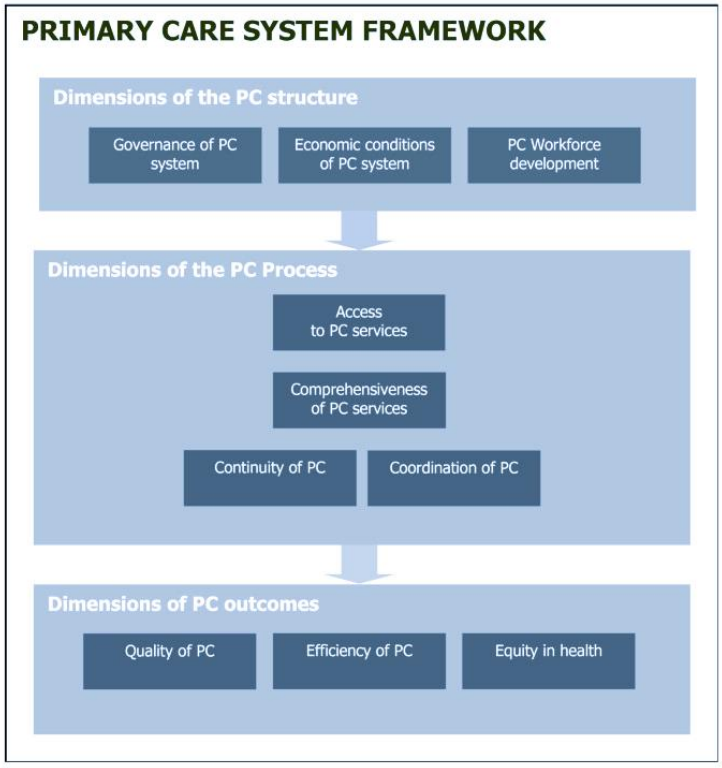
1.3 Indicators for international comparisons of primary care

Decision makers who want to monitor access and responsiveness in primary care systems in transition, will obviously be interested in performance variation within their country. But increasingly they also want to know how the country is doing in comparison to other countries, to learn possible lessons. Therefore, researchers will not only analyse variation *within* countries but also *between* countries. Inter-country analyses can take into account, for example, the organisation of primary care practices or experiences and outcomes reported by patients. To take features of (primary) health care systems into account in such analyses, there is a need for indicators reflecting its features. The system of Structural Indicators for the Strength of Primary Care (SiSPC) is not only an up-to-date system of indicators on primary care, but also takes its broader context into account. It can be used to compare a diversity of health care systems.

1.4 Starting from previous work: PHAMEU

We used the PHAMEU framework and indicators as our starting point. The PHAMEU project was EU-funded, granted to Nivel and running from 2007 to 2010. A systematic review of the literature yielded 10 dimensions jointly characterising primary care in a country. The dimensions, related to structure, process and outcome of care, consisted of 112 indicator items. With the PHAMEU indicators the strength of primary care systems was effectively measured in 31 countries (Kringos et al, 2010) and also used in the later international QUALICOPC study (Schäfer et al, 2011) and other studies (e.g. Hansen et al, 2015). Furthermore, study data have been published in participating countries and used, for example, to develop primary care policy (Lionis et al, 2017).
The dimensions of the PHAMEU framework have been depicted in Figure 1.1.

Figure 1.1 The PHAMEU framework of primary care



Source: Kringos et al, 2010

We started from PHAMEU because of its sound basis in a systematic review of the primary care literature and its proven feasibility, as the indicators have effectively been measured in a large international comparative study. However, the PHAMEU framework and indicators in their original form require adaptation and updating. For instance, recent developments and topical subjects related to primary care, such as skill mix innovations in care for people with multiple conditions, are insufficiently represented. Furthermore, due to publication delay of statistical information, about 60% of the original PHAMEU data reflect the situation before 2005, while the remaining 40% refer to the situation closer to 2009-10. Another issue is the considerable burden of data collection with the PHAMEU indicators, which can be reduced by identifying items which are redundant or only modestly contributing to a dimension. Finally, we found it a gap that the *context of primary care* was not represented in PHAMEU. 'Context' may contribute to a better understanding of differences in primary care processes and outcomes between countries.

1.5 PaRIS surveys as the reason for SiSPC

The OECD-initiated PaRIS surveys project was one of our reasons to develop SiSPC. The background of the PaRIS project is the awareness of a rapidly increasing prevalence of chronic conditions, resulting in rising demand for health care services (Hajat et al, 2018; Van der Heide et al, 2015; UN, 2019; Rijken et al, 2018; Winkelmann et al, 2022) The PaRIS project aimed to collect data among patients and primary care providers, but also requires information on (primary) health care systems. SiSPC is developed to provide this information that characterises primary care systems in countries. Descriptive results will show how the experiences and outcomes of care vary among people living with chronic conditions, both within countries and in the comparison between countries. SiSPC can be used to analyse whether and how the strength of primary care is associated with outcomes of primary care, as measured at provider level and at patient level. The multi-level focus implies that data at three levels can be used: among patients, among providers and at the level of a country's (primary) healthcare system. The context of primary care consists, first of all, of the broader health care system and further of economic, social and cultural characteristics.

1.6 Requirements to SiSPC indicators

We set the following requirements for our framework and the indicators:

- **Focus on the national system level:** indicators will exclusively focus on the level of the (primary) health care system. So, characteristics which strongly vary between primary care providers within a country will not be included in SiSPC.
- **Topicality:** Indicators should reflect current challenges and the role of primary care in health systems.
- **Balanced orientation:** the indicators should have a balanced approach, reflecting primary care's broad attention to prevention and treatment, acute and chronic disease, and to people of all ages.
- **System diversity:** indicators must be relevant to and applicable in a diversity of health systems, both within and outside Europe, and either or not OECD member states.
- **Comparability and validity:** information to be collected must be recent, valid, comparable between health care systems and as much as possible supported by evidence in the international literature.
- **Feasibility and parsimony:** information to be collected with the indicators must be concrete, measurable and available from sources that are relatively easy to access.

Terminology

We will use the following hierarchical terminology to structure SiSPC. At the most general level we identify *Domains* that capture systemic aspects of primary care that affect the daily work of primary care providers. An example of a domain is the structure of primary care. One level below the domains are *Dimensions*; an example of a dimension within the domain of structure of primary care is the governance of primary care. The dimensions will be measured by *indicator items* with their coding, often presented in the form of questions with their answering categories.
We use the term 'primary care' (PC) to indicate the part of the health care system that delivers ambulatory, general medicine first-contact care to the general population. The term *primary health care* (PHC) refers to the policy approach to achieve universal health coverage and equal access to basic and affordable health care services for everybody (Rajan et al, 2024). In this report we only use the term primary health care where cited sources use it. For the physicians providing general medical care we will use the term 'family physicians', although the terminology differs between countries.

1.7 Our research aims

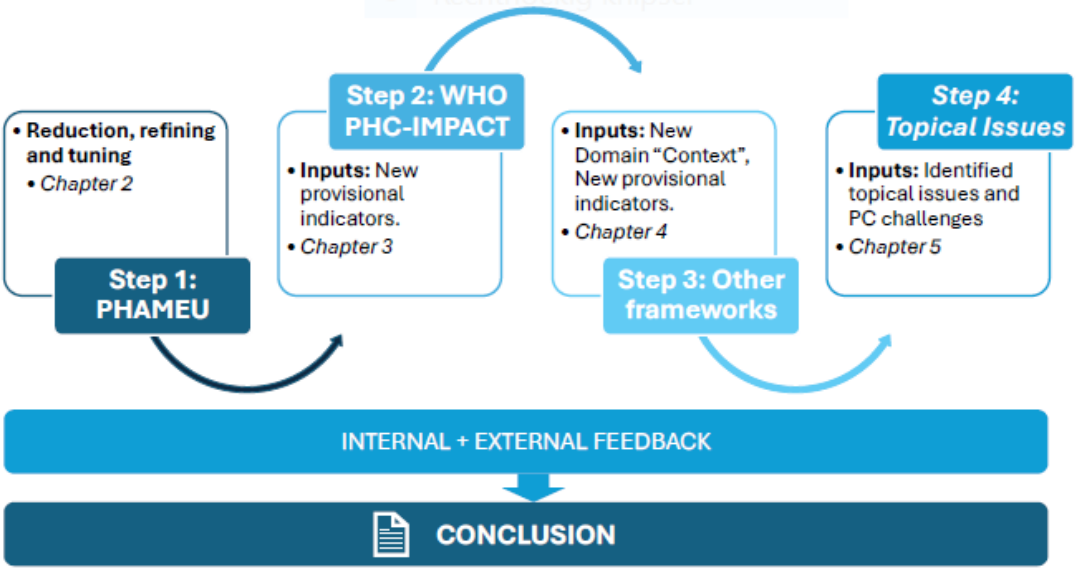
The aim of this report is to describe the development of an up-to-date system of indicators to measure the strengths of primary care in countries/ health care systems. Once we have developed SiSPC and actually measured the indicators (which will be the subject of a second report), SiSPC will be used to describe the current state of primary care in a series of countries, within and outside Europe, and to investigate the associations between the national context of the countries and their health care systems on the one hand and dimensions of the strength of primary care on the other hand. Moreover, we will be able to compare aspects of the strength of primary care in the first decade of this century to the current situation. SiSPC data will allow to address the following research questions:

- What is the current situation of primary care in European countries and OECD member states and/or countries participating in PaRIS surveys outside Europe?
- How has the state of primary care developed over the years, since the beginning of the 21st century, by comparing PHAMEU with SiSPC?
- What role does the context of health care play in explaining variation in the strength of primary care?
- Is the strength of primary care associated with the organisation and scope of primary care practices and the outcomes of primary care?

1.8 Our approach

Our pathway in developing SiSPC has been visualised in Figure 1.2.

Figure 1.2 Overview of the stepwise development of the SiSPC indicator system



- **Step 1** is our critical review of the PHAMEU framework and indicators, which is the subject of Chapter 2. For instance, we have excluded the PHAMEU outcome indicators, as outcomes can better be measured separately, for instance, in surveys among patients. Concerning process indicators, we only left those that exclusively characterise primary care at health care system level. At a decentral level, 'Process' can better be measured in surveys among primary care

providers. We also removed items that, in statistical analyses, had little or no added value. Additional evidence for aspects of strong primary care published after the PHAMEU literature review was included, e.g. from a Position Paper of the European Forum for Primary Care (EFPC) on the organization of primary care (Akman et al, 2022).

- As **Step 2** the remains of PHAMEU were merged with selected indicators from the WHO PHC-IMPACT (WHO European Primary Health Care, Impact, Performance and Capacity Tool), that we identified prior to our search of frameworks (Chapter 3). It fits well with the structure of PHAMEU and we decided first to merge these two before moving on. However, it is important to note that PHC-IMPACT does not include measurements of the indicators.
- Then, in **Step 3**, we made an inventory of other relevant frameworks and indicator sets to broaden the scope of our work (Chapter 4). We made a scan of the literature to search for potentially relevant inputs (Valderas et al, 2024) and to compensate for possible limitations of previous steps. A distinct search was undertaken for Spanish-speaking countries. In this step we also decided to expand our provisional system with context of health care and the country in general.
- **Step 4** was our search for topical issues, relevant to make primary care fit for the future (Chapter 5). We identified them through a review of documents resulting from an internet search for authoritative reports of professional and international organisations that identify insights, visions and innovations. Resulting topics were examined in the light of the requirements and indicators were formulated, as far as topics were not yet covered.
- In **Step 5** the provisional results were reviewed, both within the research team and by external experts (Chapter 6). On several occasions, concepts and early drafts of the SiSPC indicator system have been discussed, for example, at a conference and with consortium partners of the PaRIS project. In a final stage, this report and the provisional system of indicators have been reviewed by colleagues at Nivel and by experts in 25 countries.
- In the **concluding steps** the SiSPC instrument was finalized, including the indicator questions and answering categories (Chapter 7), and a reflection was made on the work done so far, including strengths and limitations, and how we aim to move forward (Chapter 8).

2 Reduction and tuning of the PHAMEU indicators

The PHAMEU system of indicators has effectively been used to measure the strength of primary care in a large number of countries. The items were combined into scales representing the domains and dimensions of the strength of primary care. For the development of SiSPC we used these international data to critically review the contribution of individual indicator items to the scales and to identify overlap between items. Without losing its value for our purpose, we could reduce the number of indicator items and improve their consistency.

2.1 Steps to reduce the system of indicators

For SiSPC we reduced the PHAMEU indicator system stepwise according to the following criteria:

- **Focus on 'Structure' and 'Process' only.**
  The outcomes dimension in PHAMEU indicates the results of the strength of primary care and, as such, is not part of an indicator system for the strength of primary care. The results of strong primary care can be measured at different levels: patients, primary care providers and health system (as aggregated information). In the PaRIS project, the results of primary care are the evaluations by patients in the form of patient-reported experiences and the patients' self-reported health, which are measured through the patient survey. Therefore, indicators of the dimension 'Primary Care Outcomes' have not been considered in SiSPC.
- **Check on suitable level of measurement.**
  In general, measurement of indicators at the appropriate level will benefit the reliability and validity of the measurements. For indicators of 'Process' the most appropriate level of measurement needs to be decided. Part of these should be measured at system level, while others can more suitably be measured through surveys among providers and patients (and subsequently be aggregated at the system level, if needed). Sometimes, indicators should be measured at both levels (for example, in countries where different payment schemes for providers are in place, this diversity is a system feature, but how a particular provider in this country is paid is better asked in a provider survey).
- **Check on contribution to the overall dimension.**
  The PHAMEU indicator items will furthermore be analysed on their contribution to the overall dimensions. In previous studies, separate indicator items have rarely been used to characterise primary care systems. Usually, they have been combined into the domains or dimensions through scale construction. The PHAMEU indicators are formative indicators, that is to say the indicators together define the latent variable 'strength of primary care' or its dimensions. We will leave out items from PHAMEU that are not correlated to the latent variable.

In line with the hierarchy provided in previous sections, these three reduction steps will be worked out hereafter. *Context* and *Domains* are at the highest level (namely: Context, Primary care structure, Systemic aspects of service delivery and Systemic aspects of facility management) and *dimensions* at the next level; these are subsequently broken down to measurable *indicators*.

2.2 Check on suitable level of measurement and contribution to dimensions

Excluding measurement of 'Outcomes of care'

As pointed out before, the 30 indicator items by which 'Outcomes of care' was measured in the PHAMEU framework have been removed for the purpose of SiSPC. Consequently, further steps in our reduction exercise exclusively focus on the PHAMEU domains of 'Structure' and 'Process'.

Indicators of dimensions for the domain 'Structure'

The domain 'Structure' in PHAMEU consists of 3 dimensions, relating to Governance (measured by 16 indicator items), Economic Conditions (measured by 10 indicator items), and Workforce Development (measured by 17 indicator items). Based on the correlations between the items and the total score of each dimension, a number of items were redundant. In addition, two items on FP payment system (ECO4.1 and 4.2)[1] have been removed. In some countries the payment system is the same for all FPs (and can be seen as a structural characteristic); however, in other countries this varies between FPs. Numbers of indicators in the domain of 'Structure' that are removed and retained are shown in the table below.

Table 2.1 Removed and retained indicators of 'Structure'

Dimensions of the domain 'Structure'	Indicators removed	Indicators retained
Governance (16)	7	9
Economic Conditions (10)	6	4
Workforce Development (17)	7	10
TOTAL (43)	**20**	**23**

Calculation of the correlations of separate items to the dimension they belong to has resulted in dropping 20 items from the original 43. So, 23 items were left for the domain of 'Structure' (divided over the three dimensions Governance, Economic conditions and Workforce development). It is possible that items that we removed from PHAMEU, will have been included again in a later phase of SiSPC development. After we will have collected data with SiSPC, again we will conduct a statistical analysis which may result in a removal of items.

Indicators of dimensions for the domain 'Process'

Indicators within the domain of 'Process' are grouped in PHAMEU into the following dimensions: Accessibility (measured by 20 indicator items), Continuity of primary care (measured by 9 indicator items), Comprehensiveness (measured by 10 indicator items) and Coordination (measured by 10 indicator items). Items that mainly vary between separate individual providers and, consequently, are not a systemic aspect of primary care process dimensions, have been removed. This is the main reason for removing items from the process dimensions. Some of these removed indicator items will be covered by the PaRIS patient or provider surveys. They will be used in the analyses of the PaRIS data at the level at which they are measured.

[1] All PHAMEU indicators can be found in Kringos et al, 2010; Additional file: the European primary care monitor.

Table 2.2 Removed and retained indicators of 'Process'

Dimensions of the domain 'Process'	Indicators removed	Indicators retained
Accessibility (20)	11	9
Continuity (9)	6	3
Coordination (10)	7	3
Comprehensiveness (10)	7	3
TOTAL (49)	**31**	**18**

From the 20 indicator items on *accessibility*, a total of 11 have been removed. Eight, because they are not systemic aspects of accessibility but vary between providers (number of home visits; use of telephone consultations; e-mail consultations; practices having a website; offering special sessions or clinics for certain patient groups; appointment systems for the majority of the patient contacts) or between patients (affordability of FP care, ease of access). Another 3 have been removed on the basis of their low contribution to the total dimension of accessibility. Consequently, 11 indicators for the dimension of accessibility have been removed and 9 were retained.
Regarding *continuity* of care (with 9 indicator items), 6 items have been removed, because they are not systemic aspects of continuity but vary between providers (medical record keeping; use of a computer; use of referral letters; receiving feedback after referral; receiving feedback from out-of-hours services) or between patients (patients visiting their usual FP; patient satisfaction). The remaining 3 items have been retained.
For coordination, 3 items are retained. Seven were removed because they are not systemic aspects of coordination of care and can better be measured at provider level (practice type; cooperation within PC teams; nurse led diabetes clinics in PC; nurse-lead health education sessions within PC; cooperation with medical specialists; FPs asking telephone advice from medical specialists).
For *comprehensiveness,* 3 items were retained (although it should be decided yet whether these can be taken either as system or as practice characteristics). The other items are rather provider characteristics (practice equipment; management of chronic diseases; percentage of consultations without a referral; minor surgery).
In conclusion, from the original 49 Process indicators only 18 were left to be measured at country level.

2.3 Overview of the remaining PHAMEU indicator items

Table 2.3 presents an overview of the indicators related to the three dimensions of 'PC Structure' and the four dimensions of 'Process', which we have re-labelled as 'Systemic aspects of service delivery'. These indicators survived the previously described tuning procedure. Table 2.3, dealing with the three dimensions of 'PC Structure' and the four dimensions of 'Process' (that we re-labelled as 'Systemic aspects of service delivery'), provide an overview of the indicators that remained after the previously described tuning procedure. The original code and title of the indicators has been used in the table, as well as the text of the indicator item (being the question to be answered to inform the indicator).

Table 2.3 Remaining indicators from the PHAMEU indicator set

Governance	Indicator title	Indicator item
GOV1.1	PC goals	Have policy documents (by government or important stakeholders) been issued that reflect a clear vision on current and future PC (e.g. for the next 5 years)?
GOV2.1	Policy on distribution of human resources	Is there an explicit governmental policy to regulate the distribution of PC providers and facilities more evenly?
GOV3.2	PC policy development at regional or local level	Have responsibilities for PC been decentralized to regional or local level?
GOV3.4	(De)centralization of PC service delivery	Has community influence on the provision of PC services been organised on a national or regional level? (e.g. via ownership of PC facilities by central or decentral authorities; patient councils with PC facilities; local / regional / national PC satisfaction surveys; volunteer work in PC facilities)
GOV4.1	Coordination of quality management	If state inspection on health care exists, does it have a specific unit for PC?
GOV4.4	Development of clinical guidelines	Have evidence based clinical guidelines been produced for specific use by FPs?
GOV5.1a	Patient rights	Have any laws / regulation pertaining to Informed consent in PC been implemented?
GOV5.1d	Patient rights	Have any laws / regulation pertaining to a procedure to process patient complaints in PC facilities been implemented?
GOV6.1	Multidisciplinary collaboration	Has a governmental policy on cooperation or integration of PC services been laid down in a law or policy paper?
Economic conditions		
ECO1.1	Total PC expenditure	Total expenditure on PC as % of total expenditure on health care
ECO1.2	Expenditure on prevention and public health	Total expenditure on prevention and public health as % of total expenditure on health
ECO2.3	Medicines coverage	% of the population covered or insured for medicines prescribed in primary care
ECO5.1	Income of FPs	What is the (estimated) gross annual income (in Euros) of a 'mid-career' FP (about 10 years' experience and with an average size of practice)?
Workforce development		
WFD1.1	Type of PC providers	To which of the following medical, para-medical and nursing disciplines people have direct access (which means without referral or intervention by another medical provider)?*)

Governance	Indicator title	Indicator item
Workforce development		
WFD2.2	Financial status of FPs compared to a specialist	WFD2.2 How does the gross annual income (in Euros) of a mid-career FP (about 10 yrs experience with average size of practice) relate to the gross annual income of the following medical disciplines of the same age? Please give an estimation whether a FP's income is [Much lower / lower / equal / higher / much higher]*)
WFD2.3	Attractiveness of FM among medical students	What % of all medical graduates chooses to enrol in postgraduate training in family medicine (within 1 year after graduation)?
WFD3.3	Workforce planning	Are data available from studies on PC workforce capacity needs and development in the future?
WFD4.3	Education of nurses in PC	Is there professional training specifically for: a. district- or community nurses? b. PC/FP practice nurses?
WFD4.3a	Duration	If yes, what is its duration?
WFD5.1	Professional association of FPs	Do national associations or colleges of FPs exist in this country?
WFD5.2	Professional Journal on FP	Is a journal on family medicine / general practice being published in this country?
WFD5.3	Professional association of PC nurses	Do national associations or organisations of PC nurses exist in this country?
WFD5.4	Professional Journal on PC nursing	Is a professional journal on PC nursing being published in this country?
Accessibility		
ACC1.1	Density available PC workforce	Please provide the total number of directly accessible medical, para-medical and nursing disciplines available per 100,000 population
ACC2.1	Availability of FPs by region	Difference between region, province or state with highest and with lowest density of FPs (per 100,000 population)
ACC2.2	Urban-Rural availability of FPs	Difference between average urban density of FPs (per 100,000 population) and average rural density of FPs
ACC2.3b	Shortage of FPs	Do (regional or national) shortages exist of FPs according to usual national norms?
ACC3.1	Opening hours	Are FP practices or PC centres obliged to have a minimum number of opening hours or days?
ACC3.4	Out-of-hours care	To what extent are the following models for the provision of out-of-hours PC commonly used / present. a. practice-based b. PC cooperatives c. deputising services d. provided by hospital emergency dept e. after hours PC f. other

Governance	Indicator title	Indicator item
Accessibility		
ACC4.1a	Cost sharing	Do patients normally need to pay for: a. a visit to their FP?
ACC4.1b	Cost sharing	Do patients normally need to pay for: b. medicines or injections prescribed by their FP?
ACC4.2d	Cost sharing	Do patients normally need to pay for: d. a visit of their FP at the patient's home
Continuity		
CON1.1	Patient list system	Do FPs have a patient list system?
CON3.1	Physician choice	Are patients free to choose the PC centre and FP they want to register with?
Coordination		
COO1.1	Gatekeeping system	Do patients need a referral to access the following medical, para-medical and nursing disciplines*)?
COO4.1	Integration of public health and PC	Are clinical patient records from FP/PC used at regional or local level to identify health needs or priorities for health policy?
COO4.2	Integration of public health and PC	Are community health surveys conducted to improve the quality and responsiveness of PC?
Comprehensiveness		
COM2.1	First contact care	To what extent will patients with the following health problems visit a FP for first contact care? (Child with severe cough; Child aged 8 with hearing problem; Woman aged 18 asking for oral contraception; Woman aged 20 for confirmation of pregnancy; Woman aged 35 with irregular menstruation; Woman aged 50 with lump in the breast; Woman aged 35 with psychosocial problems; Man with suicidal inclinations
COM6.1	Mother and child & Reproductive health care	To what extent do FPs provide the following health services to their patients who need so? (Family planning / contraceptive care; Routine antenatal care (in line with national scheme); Routine paediatric surveillance to children up to 4 years)
COM6.2	Child vaccinations	To what extent are FPs (or practice nurses) involved in infant vaccination? on: DTP (Diphtheria, Tetanus and Pertussis); Measles; Hepatitis B; Mumps; Rubella

***)** The original question referred to too many provider disciplines; this item will be restricted

3 Adding elements from WHO PHC-IMPACT

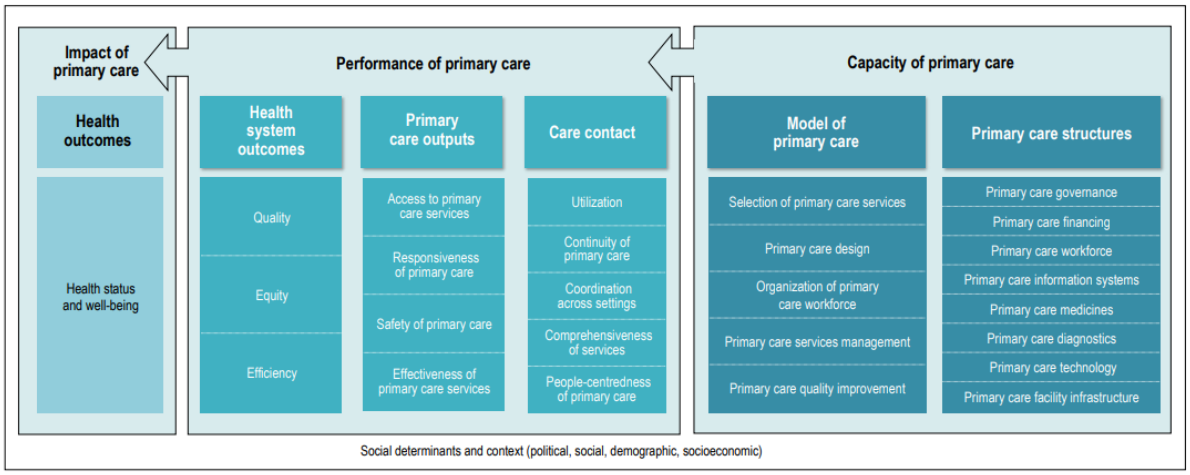
For several reasons the PHC-IMPACT (WHO European Primary Health Care, Impact, Performance and Capacity Tool) offered an excellent opportunity to expand and enrich our groundwork derived from PHAMEU. It was not just because its similarities with PHAMEU and its sound basis with an exclusive focus on primary care; it was also because its comprehensiveness and the degree of detail of the indicators. Our general approach was to identify in detail useful additions for our groundwork from PHC-IMPACT as well as duplications and 'almost-duplications' for all domains and dimension. Despite limitations of the PHC-IMPACT for our purpose, such as the exclusive focus on the WHO European Region, the result of this exercise has provided considerable body to the development of SiSPC.

3.1 Backgrounds and content of WHO PHC-IMPACT

WHO PHC-IMPACT encompasses a comprehensive set of indicators, developed by WHO Regional Office for Europe. It aims to generate performance intelligence to strengthen and monitor the potentials of PHC for the benefit of universal health coverage (UHC) (Barbazza et al., 2019). For the practical use in countries, the indicators are provided in a so-called Indicator Passport, structured in Domains, Features and Indicator questions. The framework and indicators are primarily sensitive to the healthcare models of Member States in the European Region of WHO.

The starting point of the PHC-IMPACT literature review was the PHAMEU systematic review (Kringos, 2010), which we used for our groundwork. To align with current policies, priority areas and strategies were extracted from the WHO European Framework for Action on Integrated Health Services Delivery (WHO, 2016). This was coupled with an updated literature review to identify frameworks and tools published between 2010 and the date of the search (2016-17) (Barbazza et al. 2019). In the next stage existing indicators were identified in databases of international organisations, topic-specific research databases and in surveys on health services delivery, and patient-reported experiences and outcomes, and in standardized country reports.
The classical model of structure-process-outcome (Donabedian, 1988) can be recognized in the WHO PHC-IMPACT framework's three components: *capacity, performance and impact* of primary care (from right to left in Figure 3.1). From broad to specific, each of these components has been structured in six domains, 26 subdomains and 63 features, which have eventually been operationalized into 139 indicators. In the Indicator Passport each indicator has been described in detail, including: the indicator question; numerator / denominator or answer choices; unit of measurement; rationale; preferred data sources; and possible limitations.
For SiSPC the component of 'capacity' (with 82 indicators) is most relevant, as our purpose is to characterize primary care specifically at the national level.

Figure 3.1 The framework underpinning the PHC-IMPACT



Source: Barbazza et al, 2019

The indicators from the PHC-IMPACT Tool result from a *three-staged process*, including (1) a targeted review and classification of primary care features identified in existing frameworks, tools and surveys, (2) construction of a set of tracer conditions, and (3) mapping of existing indicators in the framework resulting from the first stage.
The indicators have been prioritized, i.a. based on measurability, availability of data and balance of perspectives and subsequently mapped according to the classification used in stage 1. The Indicator Passport is a reflection of this mapping process. Face and content validity of the framework and indicators were assessed in 2017 by national representatives and discussed among WHO experts.

3.2 Integrating PHC-IMPACT elements with remaining indicators of PHAMEU

We have screened the full list of PHC-IMPACT indicators on relevance for SiSPC and identified overlaps with the topics and indicators left from PHAMEU. The results are provided in Table 3.1 below. The results of the merger of PHC-IMPACT with our PHAMEU groundwork have been included in three parts of the table: PC Structure, Systemic aspects of facility management, and Systemic aspects of care delivery. In each group there is one panel for each dimension falling under this domain, containing topics or indicators that qualify for inclusion in SiSPC, their source and possible remarks. Sources can either be PHAMEU or PHC-IMPACT (referenced by the indicator code). In case of (more or less) duplication of indicators from PHAMEU and PHC-IMPACT, the PHAMEU indicator code will be provided in the column 'Source', while the PHC-IMPACT indicator code will be provided in the column 'Remarks'. Answers / coding of indicator questions will be provided later.

Table 3.1 Indicators / topics resulting from the merger of PHAMEU and PHC-IMPACT

Abbreviations and symbols:
FP = Family physician
PC = Primary care
≈ means: more or less similar
Capital letters refer to the numeration of the PHAMEU items (Kringos et al, 2010; Additional file: the European primary care monitor); normal size letters to WHO-IMPACT item numbers (WHO, 2019)

DOMAIN	**1. PC Structure**		
DIMENSION	1.1 Governance		
Provisional topics / indicators		**Source**	**Remarks**
Have policy documents (by government or important stakeholders) been issued that reflect a clear vision on current and future PC (e.g. for the next 5 years)?		PHAMEU: GOV1.1	≈gov1q1q1
Has a governmental policy on cooperation or integration of PC services been laid down in a law or policy paper?		PHAMEU GOV6.1	
Have responsibilities for PC been decentralized to regional or local level?		PHAMEU GOV3.2	
If state inspection on health care exists, does it have a specific unit for PC?		PHAMEU GOV4.1	
Has community influence on the provision of PC services been organised on a national or regional level? (e.g. via ownership of PC facilities by central or decentral authorities; patient councils with PC facilities; local / regional / national PC satisfaction surveys; volunteer work in PC facilities?		PHAMEU GOV3.4	See also 3.4 Community engagement
Does a licensing system exist at national level? (for FPs; nurses) How often is the license renewed?		gov4q8	
Have any laws / regulation pertaining to Informed consent in PC been implemented?		PHAMEU GOV5.1a	≈ gov4q11
Have any laws / regulation pertaining to a procedure to process patient complaints in PC facilities been implemented?		PHAMEU GOV5.1d	
DIMENSION	1.2 Economic & Financial Conditions		
Provisional topics / indicators		**Source**	**Remarks**
At the national level, does primary care have a budget that can be distinguished from other levels of care, such as specialist care?		gov2q3	
Total expenditure on PC as % of total expenditure on health		PHAMEU ECO1.1	≈ fin1q12
Total expenditure on prevention and public health as % of total expenditure on health		PHAMEU ECO1.2:	
Is the following support available for carers / family carers? (in cash/care allowance; paid care leave; attendance allowance in kind, e.g. vouchers, respite services, social insurance contributions, unpaid care leave, day/night care services, community care services in general)		fin2q18	
Are the following services included in the health benefit package? (outpatient consultations / visits: FP office consultations / visits; FP home visits; outpatient prescription medicines – prescribed in PC) (Options: free at point of care; subject to a co-payment per service; subject to a co-payment as % of the price; not part of the benefit package)		fin3q19	

DOMAIN 1. PC Structure		
DIMENSION 1.3 Workforce Development		
Provisional topics / indicators	**Source**	**Remarks**
Do national associations or colleges of FPs exist in this country?	PHAMEU WFD5.1	≈ gov3q5
Do national associations or organisations of PC nurses exist in this country?	PHAMEU: WFD5.3	≈ gov3q6
Are evidence-based national clinical practice guidelines/clinical protocols / standards available for the management (diagnosis and treatment) of chronic conditions through a primary health care approach recognized / approved by government or competent authorities? (on cardiovascular disease; diabetes; cancer; chronic respiratory disease; mental health condition)	gov4q10	≈ PHAMEU GOV4.4
Do the following health professionals work in primary care? (FP; midwife; nurse; social worker; psychologist; paediatrician (specialist); physiotherapist; dietician and nutritionist; occupational therapist; speech therapist; dentist; pharmacist; public health professional)	wrk1q20	
Have tasks / duties of FPs been formally defined, by the government or professional bodies?	wrk1q21	limited to FP only
Do the following mechanisms to encourage generalist medical practitioners to work in underserved, remote and/or rural areas exist? (compulsory service requirements in rural and remote areas; scholarships, bursaries or other education subsidies with enforceable agreements of return of service in rural or remote areas; financial incentives (e.g. hardship allowances, grants for housing, free transportation, paid vacation, grants for education of dependents; other)	wrk1q22	≈ PHAMEU GOV2.1
Are data available from studies on PC workforce capacity needs and development in the future?	PHAMEU WFD3.3	≈wrk1q24
How does the gross annual income of a mid-career FP (about 10 yrs experience with average size of practice) relate to the gross annual income of the following medical disciplines of the same age? Please give an estimation whether a FP's income is [Much lower / lower / equal / higher / much higher	PHAMEU WFD2.2	≈ wrk2q25
Age distribution of practising generalist medical practitioners (<34; 35-44; 45-54; 55-64; >=65)	wrk3q26	
% of medical universities (or universities with a medical faculty) with a postgraduate programme in Family Medicine	PHAMEU WFD4.1	≈ wrk4q28
Do general practice / family medicine trainees spend time practicing in a primary care facility during postgraduate education programme?	wrk4q29	
What % of all medical graduates chooses to enrol in postgraduate training in family medicine (within 1 year after graduation)?	PHAMEU WFD2.3	≈ wrk4q30
Is there professional training specifically for: a. district- or community nurses? b. PC/FP practice nurses?	PHAMEU WFD4.3	≈ wrk4q31 Specify level and duration
Is a journal on family medicine / general practice being published in this country?	PHAMEU WFD5.2	≈ wrk4q32
Is a professional journal on PC nursing being published in this country?	PHAMEU WFD5.4	

DIMENSION 1.4 Information Structures		
Provisional topics / indicators (none yet)	**Source**	**Remarks**
DOMAIN 2. Systemic Aspects of Facility Management		
DIMENSION 2.1 Scale of PC Delivery		
Provisional topics / indicators	**Source**	**Remarks**
In which type of settings are primary care services predominantly provided? (i.a. public office of a FP; public FP group practice; public multi-profile group practice; private office of a FP; private FP group practice; private multi-profile group practice)	fin2q15	Too detailed. Rephrased as: % of FPs in solo practice etc
DIMENSION 2.2 Systems/structures for Quality Assurance and Safety		
Provisional topics / indicators	**Source**	**Remarks**
Do the following mechanisms exist for primary care facilities to operate? (licensure; accreditation; certification)	gov4q9	
Is primary care performance assessment carried out? (nationally; regionally)	imp1q78	More focus on certification
Are community health surveys conducted to improve the quality and responsiveness of PC?	PHAMEU COO4.2	
Are patient experiences measured and published?	imp1q79	
Is there a national policy / strategy / order that requires the following quality of care processes to be implemented in primary care? (quality improvement teams; periodic health audits; patient complaints systems; peer review meetings; incident reporting)	imp2q80	
DIMENSION 2.3 Practice Management Incentives		
Provisional topics / indicators	**Source**	**Comment**
(No indicators identified from both sources)		
DIMENSION 2.4 Community Engagement		
Provisional topics / indicators	**Source**	**Remarks**
Is there a formal role for citizen or patient representatives in the following areas? (health needs assessment and priority setting; health policy discourse and debate; licensing of pharmaceuticals; health technology assessment; trainings for patients; membership in PC advisory boards at the community level (e.g. council boards); membership in supervisory boards of PC facilities	gov3q7	
See also 1.1 Governance	PHAMEU GOV 3.4	

DOMAIN	3. Systemic Aspects of Care Delivery		
DIMENSION	3.1 Accessibility		
Provisional topics / indicators		**Source**	**Remarks**
The total number of directly accessible medical, para-medical and nursing disciplines available per 100,000 population		PHAMEU ACC1.1	Disciplines to be specified
Difference between region, province or state with highest and with lowest density of FPs (per 100,000 population		PHAMEU ACC2.1	
Difference between average urban density of FPs (per 100,000 population) and average rural density of FPs		PHAMEU ACC2.2	
Do (regional or national) shortages exist of FPs according to usual national norms?		PHAMEU ACC2.3	
Are FP practices or PC centres obliged to have a minimum number of opening hours or days?		PHAMEU ACC3.1	≈ org2q65
To what extent are the following models for the provision of after-hours PC commonly used? (6 options specified)		PHAMEU ACC3.4	≈ org2q66 Revise options
DIMENSION	3.2 Comprehensiveness		
Provisional topics / indicators		**Source**	**Remarks**
How are the following screening programmes delivered? (cervical cancer screening; breast cancer screening; colon cancer screening) (Options: integrated into PC; in PC but organized as vertical programme; as vertical programme)		sel1q45	
Are the following vaccination services available in PC? (HPV vaccination for girls; HPV vaccination for boys; influenza vaccination for at risk population (elderly, pregnant women etc.); child vaccinations		sel2q49	Integrate with PHAMEU COM6.2
To what extent are FPs (or practice nurses) involved in infant vaccination? (On: DTP (Diphtheria, Tetanus and Pertussis); Measles; Hepatitis B; Mumps; Rubella		PHAMEU COM6.2	Integrate with sel2q49
To what extent will patients with the following health problems visit a FP for first contact care? (list of health problems)		PHAMEU COM2.1	Selection of health problems
DIMENSION	3.2 Comprehensiveness		
Can FPs prescribe / refill the following medicine without recommendation from a medical specialist? (statin as secondary prevention for those with prior CVD; for those 40+ registered with DM2; penicillin as secondary prophylaxis for rheumatic fever or heart disease; aspirin as secondary prevention for those with ischemic heart disease; angiotensin-converting enzyme inhibitor (ACE-I); beta-blocker; calcium channel blockers (CCB); thiazide or thiazide-like diuretic; metformin; insulin; sulphonylurea; bronchodilators; inhaled steroids; nicotine replacement therapy; oral morphine; treatment for drug-susceptible tuberculosis: isoniazid, rifampicin, pyrazinamide, ethambutol (first line treatment: 2HRZE/4HR); antipsychotics for psychotic disorders; antidepressants for depression and anxiety disorders; anxiolytics and tranquilizers for anxiety disorders and sleep disorders (diazepam); anticonvulsant medicine and mood stabilizers for bipolar disorder (carbamazepine, lithium carbonate, valporic acid)		sel4q50	Not: 'refill'. Rephrased. Limited to limited number of medicines

DOMAIN	3. Systemic Aspects of Care Delivery		
DIMENSION	3.1 Accessibility		
To what extent do FPs provide the following health services to their patients who need so? (Family planning / contraceptive care; Routine antenatal care (in line with national scheme); Routine paediatric surveillance to children (up to 4 years)		PHAMEU COM6.1	
DIMENSION	3.3 Continuity		
Provisional topics / indicators		**Source**	**Remarks**
Are patients free to choose the PC centre and FP they want to register with? (Options: patients are: assigned to PC centre and FP in their area; free to choose centre but assigned to FP in the centre; assigned to centre but free to register with a FP in the centre; can freely choose any centre or FP)		PHAMEU CON3.1	≈ org1q61 Rephrased
Do FPs have a patient list system?		PHAMEU CON1.1	≈ org1q62
DIMENSION	3.4 Coordination		
Provisional topics / indicators		**Source**	**Remarks**
Do patients need a referral to access the following medical, para-medical and nursing disciplines (Options: no gatekeeping; no gatekeeping but incentives against direct access; partly gatekeeping, for some specialties; full gatekeeping)		PHAMEU COO1.1	≈des1q55
To which of the following medical, para-medical and nursing disciplines people have direct access (which means without referral or intervention by another medical provider)?		PHAMEU WFD1.1	

4 Extraction of relevant elements from other frameworks

4.1 Aim and strategy

As a next step we explored new sources to enrich the provisional set of indicators provided in the previous chapter. Two elements guided our strategy.

- **A balanced approach**, also previously mentioned, implies that indicators should reflect the broad focus of primary care, including prevention and treatment, both acute and chronic disease and people of all age groups.
- **Being up-to-date** is another SiSPC requirement. As the PHAMEU indicators were developed by a systematic review of the literature until 2008/9, there was no need to search for older sources. Newer sources may have been reviewed for WHO-IMPACT, but given the different aims of SiSPC and WHO-IMPACT we have decided to review frameworks from 2010 onwards.

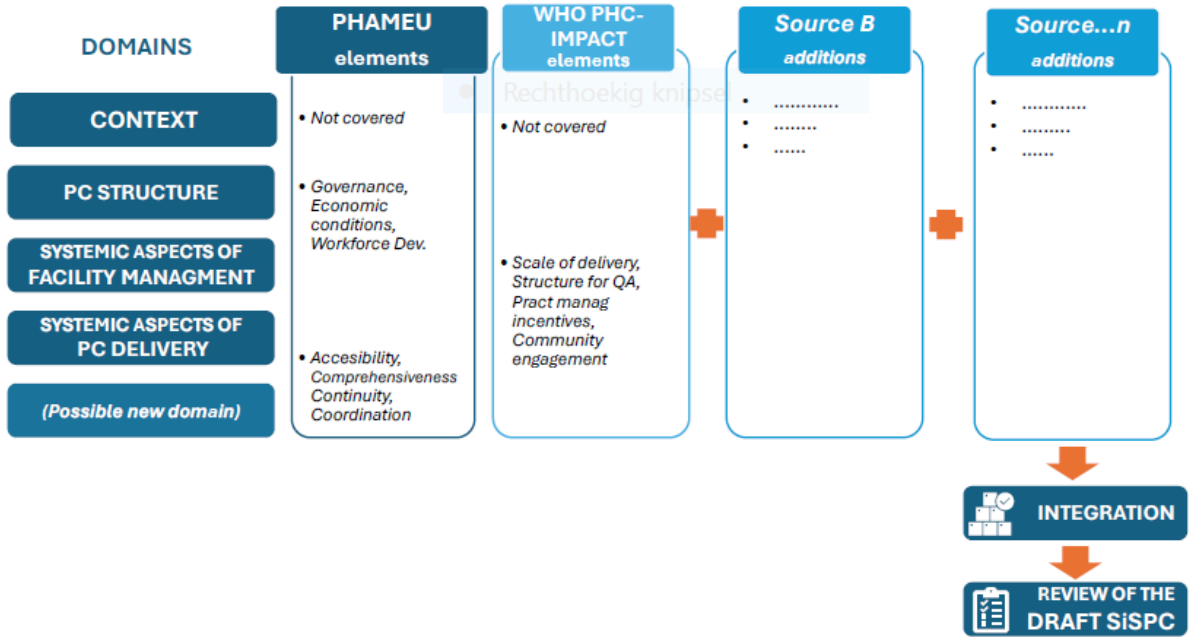
To meet the requirements, we used the results of the review undertaken to develop the PaRIS conceptual framework. For development of the conceptual framework a scan of the literature has been done to search for potentially relevant frameworks (Valderas et al., 2024). On the basis of this scan and the conceptual framework developed for PaRIS we have reviewed the following frameworks:

- OECD Health Care Quality Indicators framework (2015) and OECD Survey on Health System Characteristics (2016; 2023).
- Primary health care measurement framework and indicators (2022).
- Consolidated framework for Assessing PC organization and performance (2021).
- WHO Operational framework for Primary Health Care (2020).
- Public Health (PH) functions and operations (regarding PC–PH relationships) (2018; 2015).
- The PHCPI Framework (Primary Health Care Performance Initiative) (2017).
- Primary Health Care: a strategic framework for the prevention and control of chronic non-communicable diseases (2014).
- A number of frameworks from Spanish-speaking countries.

4.2 Inputs from sources used for the development of the PaRIS conceptual framework

Results from the search undertaken to feed the PaRIS conceptual framework were examined independently by two researchers to decide about their additional relevance to our indicator development and our provisional framework and indicators. In the uniform tables below the frameworks labelled ‘relevant’ will be presented one by one, as well as the selected elements to be included into the provisional framework and indicators. All tables are summarised at the end of this chapter, after which a final examination decides which elements have sufficient added value to be taken forward to the work presented in Chapter 3. The flow of work in our search process is depicted in Figure 4.1.

Figure 4.1 Process of successive additions from newly identified frameworks



Publications that were selected in the search will be presented one-by-one in this chapter and reviewed on usable elements for SiSPC, either at the level of dimensions or domains. It should be noted that the context of primary care came up as an important area in the course of the review of existing frameworks. It has therefore been included in the overview tables in this chapter.

4.3 Selected publications and possible elements for SiSPC

Each publication will be shortly introduced. Elements that we have identified as being relevant for SiSPC will be classified in a table divided in Context / Domains, Dimensions and Indicators and including the 3 provisional domains (PC Structure; Systemic aspects of PC facility management; Systemic aspects of PC delivery). Relevant information that cannot be classified will be added in the last row of the table. We will first present two OECD sources: the Health Care Quality Indicators framework and the Survey on Health System Characteristics. Thereafter, the order will be according to the year of publication.

4.3.1 Two OECD sources

- **The OECD Health Care Quality Indicators framework (2015)**
  Edward Kelley, Jeremy Hurst. OECD Health Working Papers No. 23. Health Care Quality Indicators Project Conceptual Framework Paper. Health Working Papers, 2006.
- **The OECD Survey on Health System Characteristics (2016; 2023)**
  OECD Health Committee Survey on Health System Characteristics, 2023

Backgrounds

The Health Care Quality Indicators framework (HCQI) was originally developed by OECD in 2006 as a common conceptual framework for health system performance (Arah et al., 2006). The core quality dimension was envisaged as a nested matrix, including an initial list of candidate indicators under the vertical dimensions of ‘effectiveness’, ‘patient safety’ and ‘responsiveness/patient-centeredness’.

The HCQI framework was also reviewed for the development of the PaRIS survey conceptual framework.

With the OECD Survey on Health System Characteristics data are periodically collected on the main characteristics of health systems of OECD countries. The dataset currently consists of results for the 2012, the 2016 and the 2023 rounds. A new round was held for Latin-American OECD member countries in 2018. The Survey has been designed to reduce the data collection burden on countries, promote exchange and shorten the publication delay.

Content of HCQI

Consistent with the conceptual framework released by the US Institute of Medicine, the dimensions of the HCQI were horizontally subdivided according to levels of healthcare needs over the life cycle, as follows:

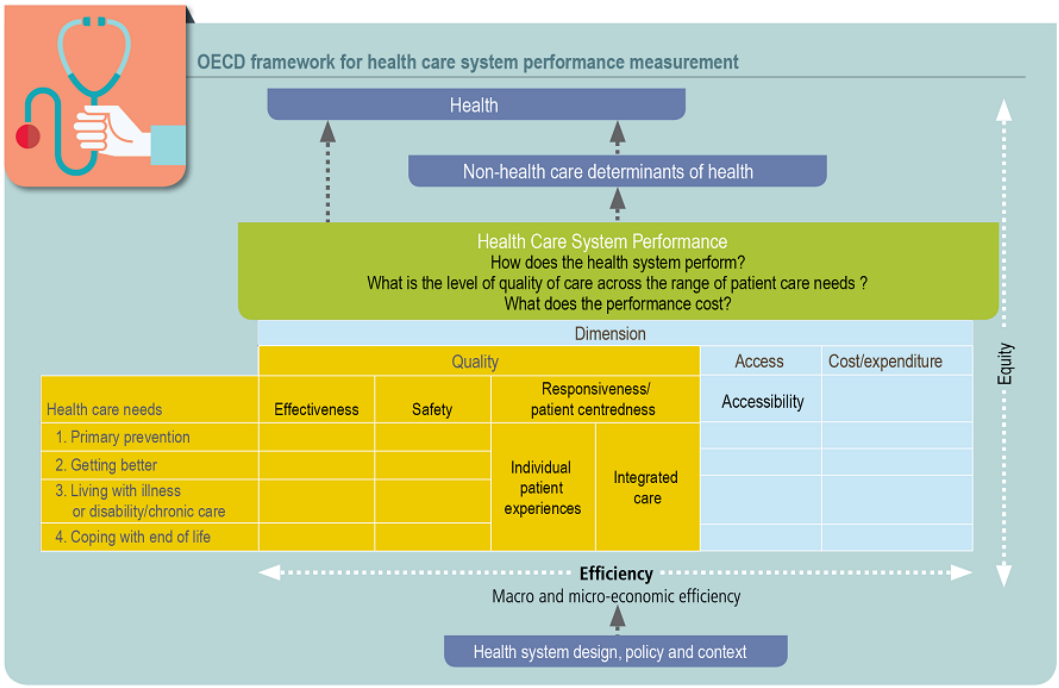
- 'Staying healthy' for healthy subjects.
- 'Getting better' for people affected by a disease.
- 'Living with illness or disability' for those living with a chronic condition.
- 'Coping with end of life' for terminal patients.

Over the years, as data were collected and statistical analysis was carried out, the coverage of the matrix and the number of countries involved progressively expanded. In 2015, the Health Care Quality Indicators (HCQI) Expert Group agreed that the 4 × 3 quality matrix represented the appropriate scope for the project and proposed minor revisions, including:

- The wording 'staying healthy' would become 'primary/secondary prevention' to provide a more precise distinction with 'living with illness and disability—chronic care'.
- The categories of 'individual patient experiences' and 'integrated care' were included under the theme of 'responsiveness' to pave the way for future indicator development.

The HCQI Framework, depicted in the scheme below, has not been designed specifically for primary care. However, the life course approach may have particular relevance for primary care.

Figure 4.2 The revised OECD Health Care Quality Indicators framework



Source: OECD, 2024

Content of HSC Survey

The OECD Survey on Health System Characteristics contains a list of 77 questions regarding aspects of the organisation, financing and delivery of healthcare systems. The survey questions are structured in three parts, which again are subdivided in sections, as follows:

PART I. HEALTHCARE FINANCING AND COVERAGE ARRANGEMENTS

- Section 1: Characteristics of basic healthcare coverage
- Section 2: Regulation of health insurance markets for basic healthcare coverage
- Section 3: Other interventions of the public sector in the health insurance market
- Section 4: Comprehensiveness of basic healthcare coverage
- Section 5: Protection against excessive out-of-pocket expenditures
- Section 6: Private health insurance acting as a secondary source of coverage

PART II. HEALTHCARE DELIVERY SYSTEMS

- Section 7: Provision and payment of healthcare services
- Section 8: Price regulation for healthcare services
- Section 9: Employment status and remuneration of healthcare professionals
- Section 10: Pay-for-performance and other financial incentives for providers
- Section 11: Patients' choice and competition among providers
- Section 12: Health workforce (training, scope of practice and resilience)
- Section 13: Primary care delivery system

PART III. GOVERNANCE AND RESOURCE ALLOCATION

- Section 14: Priority setting
- Section 15: Quality of care
- Section 16: Patients' rights and citizens' involvement
- Section 17: Budgeting practices for health

The list of questions of the Survey on Health System Characteristics has been reviewed in the light of the aims and requirements that we formulated, in particular whether they provide information on the strength of primary care. In the table below possible inputs have been provided.

Table 4.1 Possible additions from HCQI and HSC Survey to SiSPC

Context / DOMAINS	Possible inputs for SiSPC	Comments
PC Context	Health system design, policy, non-healthcare determinants of health	
PC Structure	Basic health coverage (1) List system and gatekeeping (37, 38, 39) Incentives for FPs (34a) Quality assurance (43) Policies on staff shortage (44) New roles of nurses (47-52) Access after-hours (55) Medicines restrictions in PC (59) Citizen / patient involvement (71)	
Systemic aspects of PC facility management	Safety	
Systemic aspects of PC delivery	Integrated care (18); intersectoral collaboration Shared decision making; self-management Comprehensiveness of basic package (11,12,13) Health care quality (65-68)	
Not fitting in above Domains	Life course approach to health needs	Important: focus on prevention

The numbers in brackets refer to questions in the OECD Survey

4.3.2 Primary health care measurement framework and indicators (2022)

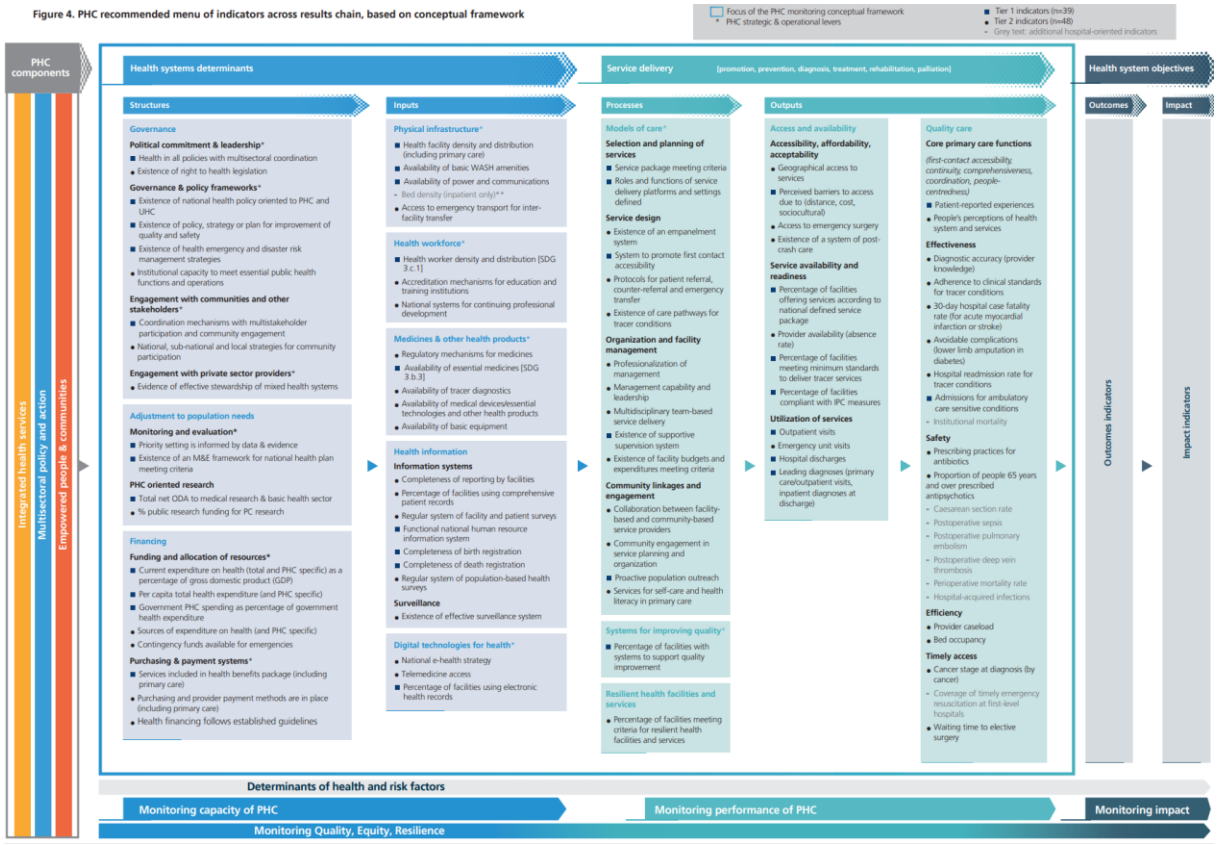
World Health Organization (WHO) and United Nations Children's Fund (UNICEF). Primary health care measurement framework and indicators: monitoring health systems through a primary health care lens (2022).

Backgrounds

The indicators and conceptual framework presented in this document are based on the 14 levers of the Operational framework for primary health care (see section 4.3.4). An overview is provided in a comprehensive menu of 87 indicators (see Figure 4.3). The menu (for each domain and subdomain) is meant to enable countries to track and monitor progress in the strengthening of their PHC system. Furthermore, the indicator system has the following features:

- Indicators result from a systematic review of indicator systems and measurement methods for PHC followed by expert consultation.
- Most indicators draw from qualitative and facility-level data (surveys; routine care data).
- Policy-makers can choose to implement a subset of indicators from the menu.
- There are two tiers: tier 1 indicators are feasible to collect; tier 2 are not or require further methodological development.

Figure 4.3 WHO / UNICEF Menu of indicators



Source: WHO/Unicef (2022)

Content of the PHC measurement framework

The following 14 levers for action are distinguished, consisting of:

4 core strategic levers:

- Political commitment and leadership.
- Governance and policy frameworks.
- Funding and allocation of resources.
- Engagement of community and other stakeholders.

10 operational levers

- Models for providing high quality of care.
- Primary health care workforce.
- Physical infrastructure (e.g. proper facilities).
- Medicines and other health products.
- Engagement with private sector providers (partnerships in integrated service delivery).
- Purchasing and payment systems (facilitating integrated delivery of services).
- Digital technologies for health (facilitating i.a. access and service delivery).
- Systems for improving the quality of care.
- Primary health care-oriented research (including dissemination of lessons learned).
- Monitoring and evaluation (tracking progress and performance through effective health information systems).

Table 4.2 Possible additions from WHO / UNICEF framework and indicators to SISPC

Context/DOMAINS	Possible inputs for SiSPC		Comments
	Concerning Dimensions	Concerning indicators	
Also: PC Context			
PC Structure	**Governance** (political commitment & leadership; governance and policy frameworks; engagement with communities & multisectoral stakeholders; engagement with private sector providers	Coordination mechanisms with multi-stakeholder participation and community engagement Existence of (sub)national strategies for community participation	General: many items need further specification & detail to be measurable Also: stakeholder and private sector engagement
	Adjustment to population needs (Monitoring & Evaluation; PHC-oriented research)	Priority setting informed by data & evidence Existence of monitoring / evaluation framework for national health plan meeting criteria % of public research funding for PHC research	Could also be labelled as conditions for Learning Health Care System
	Health information	Regular systems of facility / patient surveys	
	Digital technologies for health	Telemedicine access	
Systemic aspects of PC facility management		Professionalisation of management	
Systemic aspects of PC delivery	**Models of care** (selection and planning of services; service design; org and facility management; community linkages & engagement)	Protocols for pat referral / counter referral and emergency transfer Exist of care pathways for tracer conditions Multidisc team-based service delivery % of facilities with systems to support QI	
	Quality care (core primary care functions; effectiveness; safety; efficiency; timely access)	Prescribing practices for antibiotics % 65+ prescribed antipsychotics	
Not fitting in above Domains	**Community participation**		Community participation could be a separate dimension of PC structure

Note: we distinguished the many possible inputs into two categories: those relevant to our dimensions and those more detailed to feed the indicators

4.3.3 Consolidated framework for Assessing PC organization and performance (2021)

Senn et al., Assessing primary care organization and performance: Literature synthesis and proposition of a consolidated framework; Health Policy 2021.

Backgrounds

This study aimed to develop a consolidated framework based on a synthesis of the many published frameworks for the assessment of primary care organisation and performance. The work has focused on linking key concepts among frameworks and trying to identify their similarities and differences. To that end the literature was reviewed to identify those frameworks and their scope in high income countries. Additional strategies to access relevant references were undertaken via PC experts and snowballing. Seven frameworks were found, and these were then hierarchically structured into: domains, dimensions and elements. Key domains were subsequently mapped and, if semantically covering similar fields, clustered in groups.

The consolidated framework that resulted was assessed by a panel of experts in a (Delphi) e-survey.

Content

The consolidated framework comprises the following four domains:

- Population needs (both individual patients and collective).
- Organisation and structure of PC practices (e.g. facilities; equipment; HR management; information systems; organisation of services).
- Delivery of PC services (first contact; continuity; coordination).
- Patient and population health outcomes (results of 'delivery of PC services').

In order to link the domains, the following 'connecting constructs' were added to the framework:

- Accessibility (linking needs - organization).
- Appropriateness (linking needs - received care).
- Productivity (linking received care - organization).
- Efficiency (linking resources – patient outcomes).
- Effectiveness (linking provision of care – impact on outcomes).
- Equity has a central role in all 4 domains (it is also related to other sectors than health).
- Integration (to express the importance of this function for PC).

Contextual factors were also included, not as domains, but to take the broad environment of PC into account. The overall health system is one of them, but also the economic, political, legal and socio-cultural context as well as the physical and biological environment are determinants.
The framework with its domains and connecting constructs has been depicted in the Figure below.

Figure 4.4 Consolidated framework assessing PC organization and performance

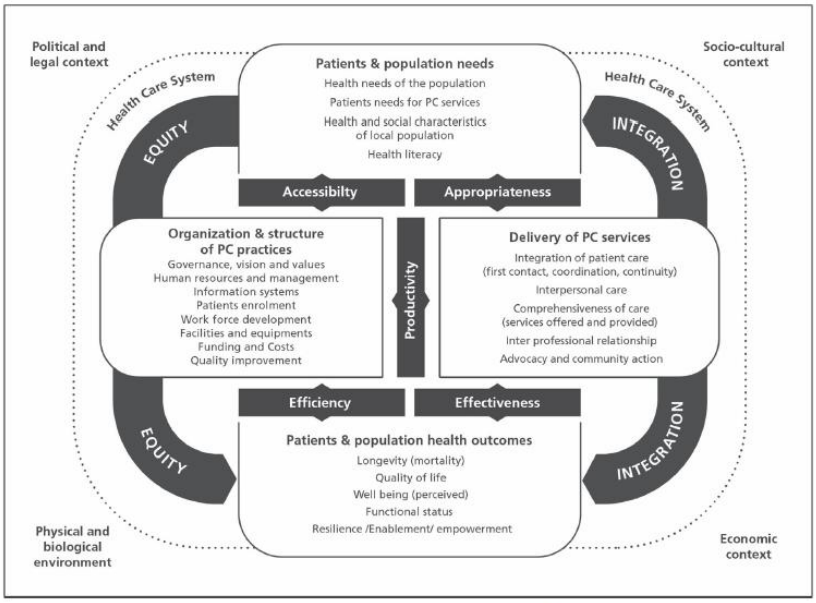


Fig. 2. Consolidated framework assessing PC organization and performance.

Source: Senn et al., 2021

Table 4.3 Possible additions from Consolidated framework for Assessing PC to SISPC

Context / DOMAINS	Possible inputs for SiSPC.	Comments
PC Context	Political and legal	
	Socio-cultural	
	Physical and biological environment	Too much small area variation in environmental characteristics to measure at country level
	Economic	
PC Structure		Largely focussed on the level provider organisations
Systemic aspects of PC facility management		
Systemic aspects of PC delivery	Advocacy and community action	
Not fitting in above Domains	Patient and population needs	

Although health needs of the population, as such, are beyond our scope, for our purpose it is relevant whether or not primary care systematically assesses the needs of the (practice) population. Hence it is part of population orientation. Furthermore, 'Context' is part of this framework, like it is in SiSPC. Finally, equity has a central role in all four domains (it is also related to other sectors than health).

4.3.4 WHO Operational framework for Primary Health Care (2020)

WHO, Operational framework for primary health care; transforming vision into action. Geneva: World Health Organization and the United Nations Children's Fund (UNICEF), 2020.

Among the 14 levers for action in the WHO Operational framework (already mentioned in 4.3.2), the four 'core strategic levers' partly overlap with the PHAMEU framework. However, a number of elements are new:

- The focus on community engagement.
- Intersectoral policies and health in all policies (part of the first two core strategic levers).

The operational levers are heterogeneous in terms of the measurement level (health system, service providers, patients). However, some elements can be assessed at system level and are not represented in the PHAMEU framework:

- In models of care (5): focus on integrated care; relations between primary care and public health.
- Engagement with private sector providers (9): some health care systems have commercial primary care providers.
- Systems for improving the quality of care (12): accreditation of primary care providers (at system level: % providers with accreditation).
- Primary care oriented research (13): could be assessed with a PubMed search.

Table 4.4 Possible additions from WHO Operational framework for PHC to SISPC

Context / DOMAINS	Possible inputs for SiSPC.	Comments
PC Context	none	
PC Structure	Intersectoral policies and health-in-all-policies	This could fit into the dimension governance
	Engagement with private sector providers	Role of private sector strongly differs between systems
	Systems for improving the quality of care	Accreditation of primary care providers (at system level: % providers with accreditation)
	National quality policy and/or strategy; routine measurement and reports on quality of PC	
	Development of PC-oriented research; development of PC research networks	
Systemic aspects of PC facility management	none	
Systemic aspects of PC delivery	Integrated care	
	Relations between primary care and public health	
Not fitting in above Domains	Community engagement	
	Role of civil society organizations in improving health system performance	

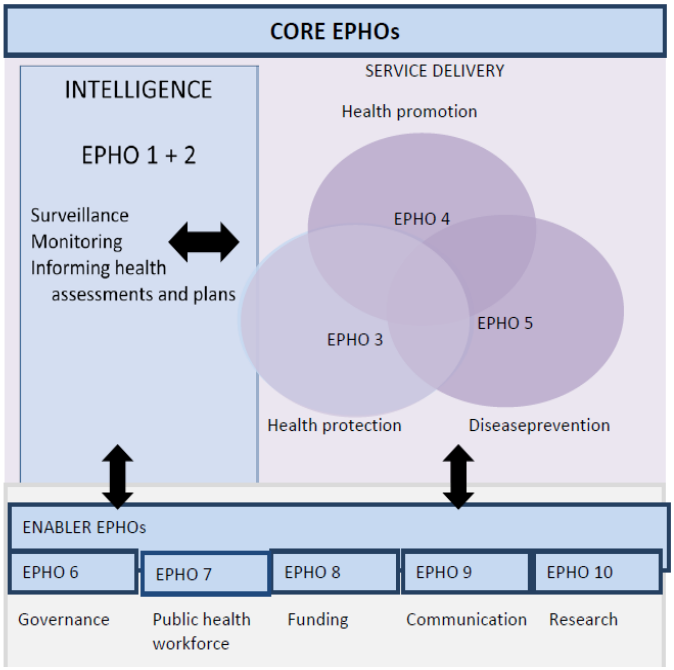
4.3.5 Public Health (PH) functions and operations (regarding PC–PH relationships) (2018; 2015)

WHO. Essential public health functions, health systems and health security: developing conceptual clarity and a WHO roadmap for action. WHO, Geneva, 2018.

WHO Europe. Self-assessment tool for the evaluation of essential public health operations in the WHO European Region. WHO, Copenhagen, 2015.

The WHO Self-assessment tool lists the ten essential public health operations and indicates how they can be measured by experts. The ten essential public health operations are depicted in Figure 4.5. Different organisations and regions of WHO use slightly different frameworks and formulations of the essential functions and operations of public health. An overview of frameworks to describe essential public health functions is given in WHO (2018; appendix 2). For our purpose, these differences are not important. We focus here on the WHO Europe self-assessment tool for essential public health operations (EPHOs).

Figure 4.5 WHO Essential public health operations



Source: WHO, 2018

The most relevant essential public health operations (EPHOs) for our purpose are:

- EPHO 1 (relating to surveillance): relevant is the availability and use of information from PC in public health (PH) and the other way around.
- EPHO 2 (relating to health hazards): the actual cooperation between PC and PH during the COVID-19 pandemic may be useful.
- EPHO 5 (on disease prevention): highlights the role of PC in vaccination, in screening programmes and in lifestyle counselling, such as smoking cessation.

The availability of data and actually sharing data and the collaborative use of data in analysis was stressed by the Institute of Medicine in a report on PC and PH integration (IOM, 2016).

Table 4.5 Possible additions from Public Health functions and operations to SiSPC

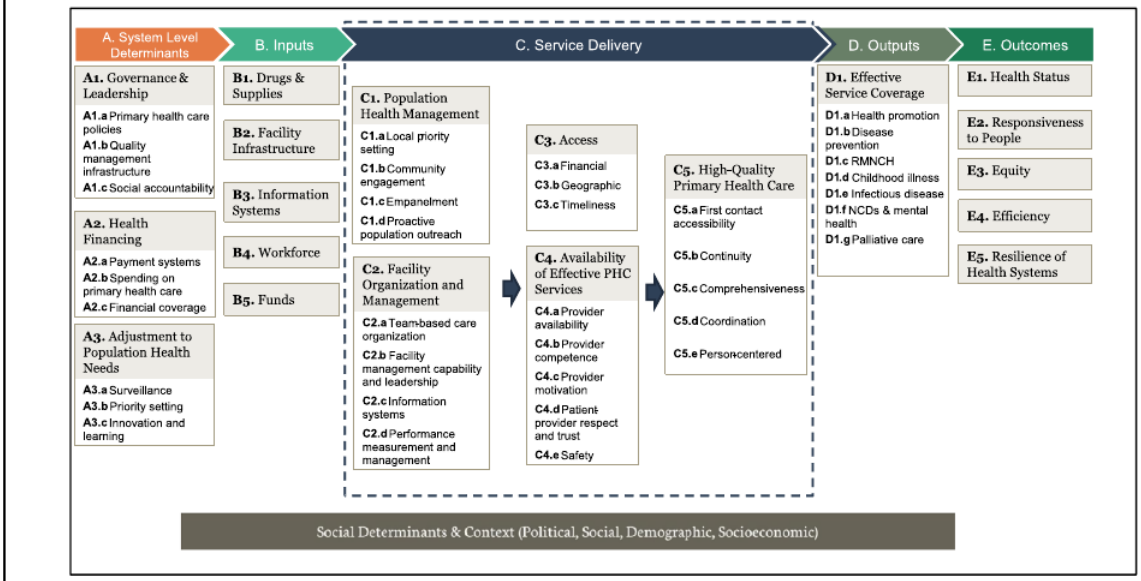
Context / DOMAINS	Possible inputs to SiSPC	Comments
PC Context	none	
PC Structure	Population orientation	
	Availability of local public health data for PC	
	Relations between PC and PH	
	Interagency cooperation between National institutes of public health and national PC organisations	
Systemic aspects of PC facility management		
	Integration with public health.	
	Role of PC in vaccinations, screening and lifestyle counselling	
Systemic aspects of PC delivery	Use of PC electronic record information in public health	
	Cooperation between PC and PH during the COVID-19 pandemic	
Not fitting in above Domains	none	

4.3.6 The PHCPI Framework (Primary Health Care Performance Initiative) (2017)

Veillard J et al. Better measurement for performance improvement in low- and middle-income countries: the primary health care performance initiative (PHCPI) experience of conceptual framework development and indicator selection. (2017).

The framework developed by the PHCPI (Primary Health Care Performance Initiative, a collaboration between the Bill and Melinda Gates Foundation, The World Bank, and the World Health Organization) was developed to describe the critical components of a strong primary care system. It includes the key system-level characteristics, being: inputs, service delivery processes, and goals of an effective PHC system. It also highlights the broader socioeconomic, political, and cultural context of health systems. As this framework was developed for lower- and middle-income countries, it does not fully suit the needs of SiSPC, but elements can be used to broaden the coverage.

Figure 4.6 Overview of the PHCPI framework



Source: Veillard J et al., 2017

Table 4.6 Possible additions from PHCPI to SiSPC

Context / DOMAINS	Possible inputs to SiSPC	Comments
PC Context	Political, social, demographic, socioeconomic	
PC Structure	E5. Resilience of health system	In this framework, this is seen as an outcome of the primary care service delivery
Systemic aspects of PC facility management	none	
Systemic aspects of PC delivery	Parts of the C (service delivery) indicators can be conceptualised and measured at system level, in particular C1 (population health management)	B (inputs) and C (Service delivery) seem to be conceptualised at the provider organisation level. The indicators are mostly formulated as survey questions and not as system characteristics
Not fitting in above Domains	A3. Adjustments to population health needs	

4.3.7 Primary Health Care: a strategic framework for the prevention and control of chronic non-communicable diseases (2014)

Demaio, AR et al. Primary Health Care: a strategic framework for the prevention and control of chronic non-communicable Disease. Global Health Action 2014;7: 24504.

This article covers the strengths of a PHC approach to prevention and control of non-communicable diseases (NCDs). Elements discussed in the paper are:

- PHC encourages an integrated approach to healthcare and prevention.
- PHC emphasizes community participation.
- PHC ensures inter-sectoral collaboration and private sector involvement.
- A focus on equity.
- Use of appropriate technology.

The focus of this paper is on NCDs / chronic conditions. Prevention (both primary and secondary) and health promotion are emphasized. Community engagement is seen in the context of effective health promotion (not of the governance and operation of primary care provision).
(no figure available to depict framework)

Table 4.7 Possible additions from PHC Strategic framework to SISPC

Context / DOMAINS	Possible inputs to SiSPC	Comments
PC Context		
PC Structure	private sector involvement	Focus on NCDs / chronic conditions
Systemic aspects of PC facility management	none	
Systemic aspects of PC delivery	integrated approach to healthcare and prevention	
	inter-sectoral collaboration	
Not fitting in above Domains	community participation	Condition for effective health promotion
	policies on equity	

4.3.8 Frameworks from Spanish-speaking countries

To find additional frameworks, written in Spanish and developed within the Latin American context, the main sources of information have been websites of international and multilateral organisations, such as the InterAmerican Development Bank (IDB), Panamerican Health Organisation (PAHO), Economic Commission for Latin America & the Caribbean (ECLAC), South American Institute of Health Governance (ISAGS-UNASUR) and Latin American Council of Social Sciences (CLACSO).

Given that the search resulted in a very limited number of new frameworks and indicators, it was widened to include relevant publications from the Spanish Ministry of Health. Furthermore, we performed a search of the grey literature, using the following key terms: “indicadores desempeño APS/sistema de salud”, “indicadores APS”, “marcos conceptuales APS”, “indicadores estructura/proceso APS”, “indicadores cronicidad”, “indicadores coordinación sistema de salud”.

Eventually, this has led to the following documents to be reviewed:

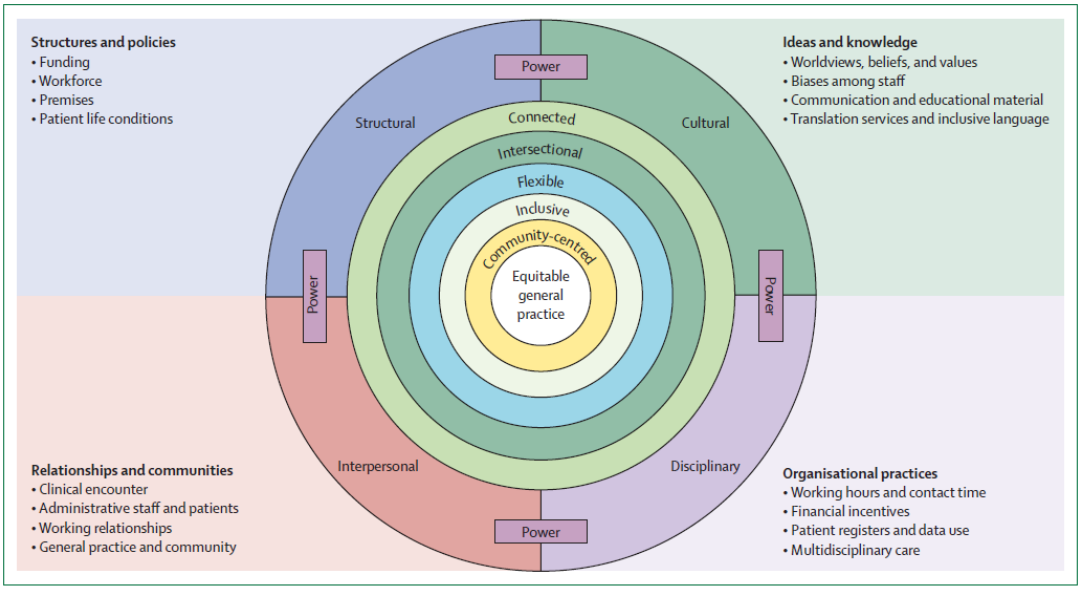
1. Organización Panamericana de Salud (2021), 'Marco de Monitoreo para la Salud Universal en las Américas'. [Framework for monitoring universal health in America].
2. Banco Interamericano de Desarrollo (2018), 'Desde el paciente: Experiencias de la Atención Primaria de Salud en América Latina y el Caribe'. [From the patient: primary health care experiences in Latin America and the Caribbean].
3. Naciones Unidas (2017), 'Marco de indicadores mundiales para los Objetivos de Desarrollo Sostenible y metas de la Agenda 2030 para el Desarrollo Sostenible'. [Framework of global indicators for the Sustainable Development Goals and the Agenda 2030 for the sustainable development].
4. Ministerio de Sanidad (2017), 'Indicadores Clave del Sistema Nacional de Salud'. [Key indicators of the National Health System; Spain].
5. Ministerio de Sanidad (2016), 'Propuesta de indicadores para evaluar la atención a la cronicidad en el marco de la Estrategia para el Abordaje de la Cronicidad en el Sistema Nacional de Salud'. [Proposal of indicators to assess chronic care within the framework of the Strategy to approach Chronicity in the National Health System; Spain].
6. Consorcio de Salud y Social de Cataluña (2012), 'Indicadores de Coordinación asistencial entre niveles de Atención'. [Indicators of clinical coordination across levels of health care].

Table 4.8 Possible additions from sources from Spanish-speaking countries to SiSPC

Context / DOMAINS	Possible inputs to SiSPC	Comments
PC Context	Modes of revenue collection	sources of financing (compulsory; voluntary health insurance; out-of-pocket)
	Coverage by health insurance scheme; uninsured people	Mind cumulation of personal characteristics that promote inequity (see fig. 4.7)
PC Structure	Access and use of shared medical records	Important for continuity across levels of care
	Availability of public policies / plans/ protocols / interventions against discrimination by race / ethnicity in healthcare	Relevant to SDG 3.8 (UHC)
Systemic aspects of PC facility management	none	
Systemic aspects of PC delivery	Availability and accessibility of physical resources	Better ask in providers survey
	Integration with social services	Relevant to chronic care
Not fitting in above Domains	none	

The review of Latin American literature pointed to the importance of equity policies in the structure of primary care. This has been reinforced by a recent review study on primary care interventions to improve equity. The review proposes five organising principles that may facilitate equity-oriented policies and interventions in primary care: connected components of interventions, intersectional approach, flexible to patients' needs, preferences and resources, inclusive organisational culture, and population oriented and community-centred (see Figure 4.7).

Figure 4.7 Conditions for successful equity interventions and policies in general practice



Source: Gkiouleka et al., 2023

4.4 Elements taken from 4.3.1 – 4.3.8 for our indicator system

Two researchers independently reviewed the tables in the previous sections on relevance to SiSPC and whether these were not yet covered by the provisional system of indicators provided in Table 3.1. Only those not yet represented were added. The result of this exercise will be presented in this section.

4.4.1 PC Context

The context of primary care came up as an important area for indicators that are not measuring the strength of primary care but may contribute to our understanding of variations in the strength of primary care. Context aspects roughly concern the health system and health policies; the political, social and cultural influences on the primary care system (Sidel and Sidel, 1977; Kringos et al, 2013); and the non-health care determinants of health. This is summarized in the ecological model of health, as was provided e.g. by Dahlgren and Whitehead (1991; 2021) (see Figure 4.8).

Figure 4.8 Ecological model of health

Source: Dahlgren, Whitehead (1991)

The figure was used to help identifying dimensions of the context of primary care from our review. For our purpose we started with the following groups of indicators: social and economic context (including population; economy; social and cultural values; welfare benefits and social protection; educational resources; lifestyle) and health care system overall (including health coverage).
It should be noted that indicators of 'Context' will not be used in building composite measures of PC strength in countries, but can contribute to answering specific research questions. So, the choice of context characteristics depends on the specific research question for which the SiSPC framework will be used.

The frameworks that we reviewed point to the following aspects of the context of primary care:
- Health system design; revenue collection; overall coverage; policy; non-health care determinants of health (see 4.3.1; Kelley, Hurst, 2006; 4.3.8).
- Political and legal, socio-cultural, physical and biological environment; economic (see 4.3.3; Senn et al, 2021).
- Political; social; demographic; socioeconomic (see 4.3.6; Veillard et al, 2017).

4.4.2 PC Structure

Inputs from OECD sources on PC structure were from the OECD Health System Characteristics Survey, in particular at the level of indicator items. These are partly used to replace our (almost) similar questions, which enables a better use of the OECD Health System Characteristics Survey as a source. On the following topics these new elements can be added to our provisional system of indicators.
- Influence of citizens in primary care governance.
- Protection of groups at risk (access to basic services; financial hardship).
- Policies to counteract staff shortage.
- PC nurses working in advanced roles.

Many inputs for PC Structure were from the WHO / UNICEF PHC Measurement Framework and Indicators (see 4.3.2). Coverage of the suggested indicators is as follows:
- Coordination mechanisms with multi-stakeholder participation and community engagement
  Community involvement is covered as element of the structure of PC under 2.1 Governance: GOV3.4
  Multistakeholder participation: not explicitly covered.
- Existence of strategies for community involvement
  Covered under 2.1 Governance: GOV3.4
  Note: 'Community involvement' has also been identified as a topical issue in Chapter 5 (see 5.2.5).
- Priority setting informed by data & evidence
  Covered under 2.4 Information structures: COO4.1 / man3q77.
- Existence of monitoring / evaluation framework for national health plan meeting criteria
  Covered under 3.2 Systems / structures for QA and safety: imp1q78 (PC performance assessment).
- % of public research funding for PHC research
  Not covered.
- Regular systems of facility / patient surveys
  Covered under 3.2 Systems / structures for QA and safety: COO4.2.
- Telemedicine access
  Not covered (this varies between PC practices and therefore should be asked in PC practice surveys).

- Learning Health Care System
  Not explicitly covered (see topical issues, Chapter 5).

Inputs from WHO Operational Framework (see 4.3.4) are:
- Intersectoral policies and health-in-all-policies
  Not covered.
- Engagement with private sector providers
  Not covered (see above: multistakeholder participation).
- Systems for improving the quality of care
  Covered under 3.2 Systems / structures for quality assurance (QA) and safety: COO4.2 / gov4q9 / imp1q78 / imp1q79 / imp2q80.
- National quality policy and/or strategy; routine measurement and reports on quality of PC
  Covered under 3.2 Systems / structures for QA and safety: imp1q79 / imp2q80.
- Primary care oriented research; Development of PC oriented research; development of PC research networks
  Not covered.

From the Public Health functions and operations (see 4.3.5) we take the following inputs:
- Population orientation
  Covered under 2.1 Governance: GOV3.4 / GOV5.1d and under 3.2 Systems/structures for QA and safety: COO4.2 / imp1q79.
- Availability of local public health data for PC
  Not covered.
- Relations between PC and PH
  Could partially be covered under 2.1 Governance: GOV6.1 and under 2.2 Economic & Financial Conditions: ECO1.2 and under 4.2 Comprehensiveness: sel1q45 / COM6.2 / sel2q49.
- Interagency cooperation between national institutes of PH and national PC organisations
  Not covered (see above 'Multistakeholder participation').

From PHCPI (see 4.3.6) we take: Resilience of the health care system
  This is not covered (it is a Topical issue in Chapter 5).

From the PHC, a strategic framework for the prevention and control of chronic NCDs, we take:
- Private sector involvement.
  This is not explicitly covered (see above 'Multistakeholder participation' and 'Engagement with private sector providers').

From the frameworks from the Spanish language environments, we take:
- Integration with social services
  This is also in Chapter 5 (topical issues) and will be dealt with there.
- Policies to address inequities
  This came up with other frameworks too. It will be included under the dimension GOV2.1.
- Access and use of shared electronic medical records
  This fits with GOV2.4 (Information structure) and can be added there.
- Health insurance coverage
  This has been covered under Dimension 2.2.

Conclusion

We include the following indicator topics under Domain 1: PC Structure

- Multistakeholder participation / Engagement with private sector providers
- Public research funding for PHC research
- Telemedicine access
- Access and use of shared medical records
- Learning Health Care System
- Intersectoral / health-in-all-policies
- Development of PC oriented research
- Availability of local public health data for PC
- Relations between PC and PH
- Relations between PC and social care
- Policies on inequities
- Resilience of the health care system

4.4.3 Systemic aspects of facility management

For Domain 2 we found the following two inputs:

From *OECD-HCQI* (see 4.3.1):

Safety, which is covered under 3.2 Systems/structures for QA and safety: imp2q80.

From OECD HSC Survey:

Quality assurance mechanisms at professional and facility level.

From WHO / UNICEF PHC Measurement Framework and Indicators (see 4.3.2) the following:

Professionalisation of management; which is not covered yet.

Conclusion

Under Domain 2, Systemic aspects of facility management, we suggest to add indicators for (incentives to facilitate) professionalisation of practice management and quality assurance mechanisms.

4.4.4 Systemic aspects of service delivery

From OECD-HCQI (see 4.3.1) we take the following two topics for Domain 3:

- Integrated care / intersectoral collaboration
  Covered under 2.1 Governance: GOV6.1.
- Shared decision making / self-management
  Covered under 2.1 Governance: GOV5.1a / gov4q11.

From WHO / UNICEF PHC Measurement Framework and Indicators (see 4.3.2) the following indicator fields are relevant:

- Protocols for patient referral / counter referral and emergency transfer
  Covered under 2.3 Workforce development: gov4q10 / GOV4.4.
- Existence of care pathways for tracer conditions
  Not covered.
- Multidisciplinary team-based service delivery
  Partly covered under 3.1 Scale of PC delivery: COO1.

- % of facilities with systems to support Quality Improvement
  (Better be inquired at facility level).
- Prescribing practices for antibiotics
  (Better be inquired at facility level).
- % 65+ prescribed antipsychotic drugs
  (Better be inquired at facility level).

From Consolidated Framework (see 4.3.3) the following indicator field has been identified:
- Advocacy and community action
  Covered under 2.1 Governance: GOV3.4 / Under 3.2 Systems / structures for QA and safety: imp1q79
  (See also Chapter 5: 'Community involvement' (5.2.5).

From WHO Operational Framework (see 4.3.4) the following:
- Integrated care.
- Relations between PC and PH
  Partially covered under 2.1 Governance: GOV6.1 and under 2.2 Economic & Financial Conditions: ECO1.2 and under 4.2 Comprehensiveness: sel1q45 / COM6.2 / sel2q49.

From the Public Health functions and operations (see 4.3.5) the following:
- Integration with public health
  Partially covered under 2.1 Governance: GOV6.1 and under 2.2 Economic & Financial Conditions: ECO1.2 and under 4.2 Comprehensiveness: sel1q45 / COM6.2 / sel2q49.
- Role of PC in vaccinations, screening and lifestyle counselling
  Largely covered under 4.2 Comprehensiveness: sel1q45 / COM6.2 / sel2q49.
- Use of PC electronic record information in public health
  Covered under 2.4 Information structures: COO4.1 / man3q77.
- Cooperation between PC and PH (during the COVID-19 pandemic)
  Partially covered under 2.1 Governance: GOV6.1 and under 2.2 Economic & Financial Conditions: ECO1.2 and under 4.2 Comprehensiveness: sel1q45 / COM6.2 / sel2q49.

From PHCPI (see 4.3.6) we can particularly use indicators from part C (on service delivery) because these can best be conceptualised and measured as features at system level. The indicators on Access and on Availability are sufficiently covered. For the rest, we consider the following:

On population health management:
- Local priority setting
  Covered under 2.4 Information structures: COO4.1 / man3q77.
- Community engagement
  Covered under 2.1 Governance: GOV3.4.
- Empanelment
  Covered under 4.3 Continuity: CON1.1 / org1q62.
- Proactive population outreach
  Not covered (but this can better be measured at provider level).

On facility organization and management:
- Team-based care
  Partly covered under 3.1 Scale of PC delivery: COO1.
- Facility management capability
  Not covered.

– Information systems
  Covered under 2.4 Information structures: COO4.1 / man3q77.
– Performance measurement and management
  Covered under 3.2 Systems/structures for QA and safety: imp1q78.

From the Spanish language countries frameworks:
– Physical access to PC facilities, in particular, the distance to PC facilities
  Covered by two indicators for the geographical distribution of PC facilities at country level (PHAMEU ACC2.1 and PHAMEU ACC2.2).

Conclusion

Concerning Domain 3 we identify the following indicator fields that are not covered yet by the current framework:

- Existence of care pathways for tracer conditions
- Multidisciplinary team-based service delivery (in particular with non-physicians)
- Relations between PC and PH (in particular incentives / conditions)
- Facility management capability

4.4.5 Important inputs not fitting in our Domains

From the search reported in the sections 4.3.1 to 4.3.7 we took the following topics we could not allocate to one of the domains:

– Life course approach to health needs (incl. prevention; living with disability and chronic conditions; end-of-life)
  Covered under 2.2 Economic and Financial conditions: fin2q18. Under 4.2 Comprehensiveness: sel1q45; COM2.1; COM6.1. Possible extension: palliative care.
– Community participation (or -involvement) could be a separate dimension of PC structure
  Now it is covered under 2.1 Governance: GOV3.4. (See also 5.2.5).
– Patient and population needs
  Covered under 2.4 Information structures: COO4.1 / man3q77.
– Role of civil society organizations in improving health system performance
  Covered under 3.4 Community engagement: GOV3.4 / gov3q7 (expand the question?).
– Adjustments to population health needs
  Covered under 3.2 Systems/structures for QA and safety: COO4.2 / imp1q79.

Conclusion

From the remaining topics we take the following forward:

- Life course approach to health needs: palliative hospice care
- Role of civil society organizations in improving health system performance (expand GOV3.4 / gov3q7)

4.5 Indicator topics from Chapter 4 to be added to the current framework

Table 4.9 Overview of indicator topics from Chapter 4 to be added to the current framework

Context / DOMAINS	Listing of additions from 4.4.1 – 4.4.5
PC Context	Population Economy Social and cultural values, politics Welfare benefits and social protection Educational resources Lifestyle Health care system overall
PC Structure	Multistakeholder participation / Engagement with private sector providers Public research funding for PHC research Telemedicine access Access and use of shared medical records Learning Health Care System Intersectoral / health-in-all-policies Development of PC oriented research Availability of local public health data for PC Relations between PC and PH Resilience of the health care system Relations between PC and social care Policies on inequities
Systemic aspects of PC facility management	(Incentives to facilitate) professionalisation of practice management.
Systemic aspects of PC delivery	Existence of care pathways for tracer conditions Multidisciplinary team-based service delivery (in particular non-physicians) Relations between PC and PH (in particular incentives /conditions) Facility management capability Involvement in palliative care
Not fitting in above Domains	Life course approach to health needs: palliative / hospice care Role of civil society organizations in improving health system performance (expand GOV3.4 / gov3q7) Policies on equity

5 Integrating identified topical issues

Further to the inputs described in chapter 4, we searched, in a snowballing strategy, for papers focusing on current challenges in primary care and with a vision of what is needed for primary care to cope with these challenges. Information from these sources has been used to enrich and update our framework and indicators.
In this chapter the issues identified will be listed with their references, explained and examined on their coverage by our provisional system of indicators.

5.1 Topical issues identified in our search

The results of our search are the challenges and issues listed below (with their references).
- **Health system resilience, dealing with pandemics** (Kruk et al, 2015; EXPH, 2020; OECD, 2021).
- **Environmental footprint of health care** (Lenzen et al, 2020; Gonzalez-Holguera et al, 2022; Klemenc Ketis et al, 2022).
- **Health care in depopulating regions** (WHO / Bosmans et al, 2021).
- **e-Health care** (OECD, 2020).
- **Community involvement** (DeCamp et al., 2019; Eder et al., 2013; Modigh et al. 2021; Sharma & Grumbach, 2017; CDC, 2011).
- **Shortage of health care staff** (WHO, 2016b; OECD, 2020).
- **Dealing with multimorbidity** (Adan M, et al., 2020; WHO, 2016a; Rijken et al., 2018).
- **Mental health and PC** (Smits et al., 2020).
- **PC and social care collaboration** (RCGP, 2019; EuroHealthNet, 2022).
- **Continuity of care out-of-hours** (Hetlevik Ø et al., 2021; RCGP, 2016).
- **Care team well-being, Quadruple Aim** (Bodenheimer et al, 2014).
- **Social prescribing** (NHS, 2019; WHO, 2022).
- **Extension of FP training duration** (RCGP, 2019).
- **Population health approach, outreaching** (De Maeseneer, 2017; RCGP, 2019; Jiao et al, 2022; NASEM, 2023; RVS, 2023).
- **Learning health system based on PC data** (IOM, 2007; Friedman et al, 2015).

5.2 Explanation of each topical issue, its current coverage and suggested additions

Issues will be explained in this section and examined on the extent to which they are covered by current items in our provisional framework. Suggestions are made for new indicator fields.

5.2.1 Health system resilience and dealing with pandemics

Resilience is an important characteristic of health systems that recently emerged after the COVID-19 pandemic as a topical issue with particular relevance for primary care. The European Observatory on Health Systems and Policies defines resilience in its recent Policy Brief as: 'Health system resilience is the ability to prepare for, manage (absorb, adapt and transform) and learn from shocks' (Thomas et al., 2020). Although resilience is a characteristic of health systems as a whole, it can at least partly be applied to primary care. Strong PC can be seen as creating conditions for resilient health systems, as was witnessed during the COVID-19 pandemic, by absorbing part of the shock that struck hospital

care, by adapting its organization (Groenewegen et al, 2022), changing tasks within PC teams (Groenewegen et al, 2022) and outreaching to vulnerable people (Van Poel et al, 2023). Strong PC has a role in surveillance and data it generates in electronic medical files can be used to feedback population information to PC providers and local and national authorities. A recent review added community involvement as a condition for successful absorption and adaptation to crises (Myat Thu et al, 2022), at the PC facility level and at national level (as part of stakeholder involvement). Universal Health Coverage is an important mechanism to protect people against the financial burden of crises (Thomas et al, 2020).

Coverage in our indicator framework

A comparison of the strategies to strengthen resilience, as compiled by Thomas et al (2020), with our provisional system of indicators, shows that a number of important indicators relating to these strategies have already been included, as summarized below:
On Governance: Strong vision on PC is covered by PHAMEU GOV1.1 / GOV3.4; Coordination between sectors and key stakeholders covered by PHAMEU GOV6.1; Effective information systems covered by man3q77.
On Financing: Universal health coverage covered by fin3q19.
On Resources: Appropriate level and distribution of human resources covered by wrk1q22 / PHAMEU WFD3.3 / ACC2.1.

Conclusion

No need to add further indicators for resilience of primary care

5.2.2 Environmental footprint of health care

The environmental footprint of health care is an emerging topic of the last decades (WHO, 2008). It stresses the responsibility of health care for an important aspect of population health: the effects of climate change on people's health (Rocque et al, 2021). Primary care has a responsibility in this area (Klemenc Ketis et al, 2022; NHG, 2023). Although we don't expect direct effects of primary care's involvement with climate change on outcomes of primary care, the subject is important for two reasons: it may indicate the future orientation of primary care and the sensitivity of primary care to the influence of environmental circumstances on health.
By now, estimates of the environmental footprint of health care have been made, not only for health care as a whole but also for primary care separately (Lenzen et al, 2020; Gonzalez-Holguera et al, 2022). The ways the footprint is estimated differs. This means that estimates of the footprint will not be comparable between PC systems. However, the fact that estimates have been made, can be seen as an indicator of the prominence of the environmental footprint of PC.

Coverage in our indicator framework

This topic has not been represented in our provisional framework.

Conclusion

We add a new indicator topic 'Environmental footprint of primary care', to be part of the Context of primary care, with a new indicator, as follows:

- Is an estimate or calculation of the environmental footprint of PC available (Y/N).

5.2.3 Serving depopulating regions

In many parts of the world, rural and remote areas are depopulating, as young people move towards urban centres for education and employment. The result is an ageing population, with increasing health needs and a shrinking carrying capacity for primary health care services and community functions (WHO, 2021; Euripa, 2022). Although the problem may be bigger in large countries – like the USA, Australia – depopulating regions are also occurring in smaller countries. Increasing needs and lower access to (primary) care are a challenge for primary care provision. Policies exist to increase the availability of primary care, ranging from interventions in medical education and FP training to new skill mix arrangements and mobile clinics (Flinterman et al, 2023). The COVID-19 pandemic has shown how digital tools can make PC accessible under difficult circumstances and PC in remote and rural areas can use these experiences, taking into account the specific characteristics of ageing rural populations, e.g. in relation to digital health literacy (Euripa, 2022; Petrazzuoli et al, 2023).

Primary care in depopulating regions is not only related to access to care, but also to PC worker wellbeing. PC workers and their families are subject to the same influences as the general population, e.g. in terms of access to education for their children.

Coverage in our indicator framework

How the PC system deals with care in depopulating areas is largely covered by the indicators on incentives for working in remote areas (wrk1q22) and regional shortages (PHAMEU ACC2.1 / ACC2.3).

Conclusion

No need to develop new indicators for this topic

5.2.4 e-Health care

e-Health care refers to the use of information and communication technology (ICT) to support and improve health and health care. The European Commission (2012) has made e-Health care into a spearhead of innovation to tackle the challenges facing European health care systems.

E-Health care emerged in the past century with the introduction of (personal) computers in primary care to support PC providers through electronic medical records and, later, electronic communication between care providers. The introduction of ICT as support to PC providers varies between PC providers and countries (De Rosis and Seghieri, 2015) and has presumably led to improved continuity and coordination of care and patient safety (e.g., through electronic prescribing systems and connections with pharmacies).

Only later e-Health care to support the health of patients and their access to information and to health care came up. E-Health care is used to support self-management by patients, to provide access to their own electronic patient records, and to provide online access to care. In particular access to care received a big boost during the COVID-19 pandemic when PC practices had to reorganise their ways of working to prevent infections and to give access to care to people who could not otherwise reach the practice.

Patients seek information about their health complaints on internet (e.g., Thuisarts.nl, developed by the Dutch College of General Practitioners). The extent to which this is done by patients depends on the access to internet and on people's digital (health) literacy. Patients' use of ICT for self-management developed during the last decade.

Coverage in our indicator framework

E-health care is relatively well-covered in Dimension 2.4: the use of patient records to define needs and priorities (PHAMEU COO4.1 / man3q77); Telemedicine access; Learning Health Care System;

availability of local PH data for PC; access and use of shared medical records. Still there is room for indicators specifically related to e-health access to PC practices and the availability of reliable online patient information.

Conclusion

The following new indicators are suggested:

- Are GPs / practices remunerated for online consultations (under Dimension 1.2)
- Is there a national website for medical patient information set up / approved by the MoH or a GP professional association?
- Percentage of PC practices using apps or online platforms

5.2.5 Community involvement

Community involvement in primary care has been found to increase satisfaction with care / treatment and better self-management of condition (self-efficacy) for patients (Modigh et al. 2021) and increased trust in healthcare organizations (DeCamp et al. 2019). It is also mentioned as a condition for effective health promotion (Demaio, 2024).
Community involvement can be implemented in various ways. Sharma & Grumbach (2017) present a list of forms of participation (ordered from least- to most engaged). The logic of their ordering of the forms of participation is similar to the ordering of community engagement (engagement – collaboration – shared leadership) used by Eder et al. (2013), but in a more fine-grained way. However, most of these can be best measured at practice level instead of a systemic level).
Sharma & Grumbach distinguish the following forms of participation, with increasing intensity:

- Patient surveys.
- Suggestion boxes.
- Secret shoppers (patients gather experiential feedback from trial phone calls to clinic or gathering step-by-step feedback on each step of clinic visit).
- Town hall (large-scale forum to gather community feedback on clinic initiative).
- Patients as QI partners (patients serve as members of quality improvement or practice improvement teams).
- Patients join staff at conferences / workshops.
- Patient advisory councils (representative group of 7–15 patients who meet on monthly or quarterly basis to discuss practice improvement).
- Patients assist in training staff (patients participate in onboarding and training new clinical staff, particularly in patient communication).
- Emerging options: virtual advisory boards / social media.

More systemic level indicators are suggested by CDC (2011). For example, policymakers may make community involvement a condition of funding (p46). Another indicator could be whether or not community engagement is focused on specific health issues like, conceivably, people with (certain) chronic conditions or from deprived communities.
CDC (2011) also refers to the importance of PC providers having a sound knowledge of the community. An indicator for this could be if there are central data-sharing agreements or infrastructures specifically aimed at allowing PC practices to learn the essential characteristics of the community they are serving. Additional potential indicators related to the principles:

- Is there funding available for practices to engage in (long term) engagement with their community?

- Are training programs available for practices to learn best practices about community engagement?
- Are frameworks (developed by, e.g., governments, FP associations etc.) in place that offer guidelines for community engagement?
- Do patient organizations (and/or other interest organizations) actively pursue the diffusion of community engagement amongst PC practices?

Coverage in our indicator system

Community involvement is covered by GOV3.4 in the indicator system. (Some of) the levels suggested by Sharma & Grumbach (2017) can be used as indicator values. Another indicator, PHAMEU COO4.2, addresses one of these levels (community health surveys) and could be integrated into the overall indicator. This also holds for gov3q7 and WHO / UNICEF-c1: Regular systems of facility / patient surveys, at least as far as the community level is concerned.
The WHO - PH-PC set (population orientation) also addresses the availability of local public health data for PC. The WHO / UNICEF set has two indicators (a1: Coordination mechanisms with multi-stakeholder participation and community engagement and a2: Existence of strategies for community participation) that address policies aimed to increase community participation.

Conclusion

Significant aspects of community involvement are covered; no need for additions

5.2.6 Shortage of health care staff

Shortages in health care staff in PC and in particular of FPs is an increasing problem in many countries (Russo et al, 2023) and, according to WHO Europe, a challenge in all countries in the European region (WHO, 2022). The ratio of FPs to population differs between countries and to some extent a lower number of FPs is compensated by a different team composition and skill mix profile of practices. Nevertheless, the COVID-19 pandemic has made policy-makers aware of the staffing problems in PC (WHO, 2022). Ageing of the PC workforce is a big problem in many countries with eleven countries in the European region having over 40% of their FPs aged 55 years and older (WHO, 2022, Figure 3).
WHO proposes ten actions to alleviate the problem:

- Align education with population needs and health service requirements.
- Strengthen continuing professional development to equip the workforce with new knowledge and competencies.
- Expand the use of digital tools that support the workforce.
- Develop strategies that attract and retain health workers in rural and remote areas.
- Create working conditions that promote a healthy work-life balance.
- Protect the health and mental well-being of the workforce.
- Build leadership capacity for workforce governance and planning.
- Strengthen health information systems for better data collection and analysis.
- Increase public investment in workforce education, development and protection.
- Optimize the use of funds through innovative workforce policies.

Coverage in our indicator system

Shortage of staff is covered by addressing actions concerning attraction and retention of health workers in remote areas (wrk1q22/PHAMEU GOV2.1) and the work-private balance. Furthermore, education and professional development are covered by: PHAMEU WFD5.1 / gov3q5, PHAMEU WFD5.3 / gov3q6. Mechanisms for work in underserved, remote and/or rural areas are covered by

wrk1q22 / PHAMEU GOV2.1. Availability of data available on FP workforce capacity needs and development in the future is covered by PHAMEU WFD3.3 / wrk1q24.

Conclusion

No additions needed

5.2.7 Dealing with multimorbidity

Although multimorbidity is not a new issue, there is still a long way to go to improve care for people with multiple (chronic) diseases. Multimorbidity gained attention in the 1980's with one of the first comprehensive overviews of the incidence of multimorbidity in PC being the study of Van den Akker et al (1998). Increasingly, PC guidelines pay attention to the management of multimorbidity and the associated problem of polypharmacy (Muth et al, 2019). To improve the management of multimorbidity, a focus on the organisation of the health system and a patient-centred approach are necessary to overcome fragmentation of care (Breuer et al, 2022; Van der Heide et al, 2017). The burden of multimorbidity on primary care is increased by the fragmentation of specialist care and the tendency to move care for persons with a chronic illness to primary care. Three key elements are: customizing care to the needs, preferences, values and resources of patients, involving informal carers as co-clients and co-care providers, and integration and coordination of care. This requires 'a transition to person-centred health systems—health systems underpinned by technology-enabled primary, community, and social care that sustain and improve health and do not merely react to disease.' (Atun 2015, p. 722).

Coverage in our indicator system

Patient / person-centeredness is represented by two questions. First, whether community health surveys are conducted to improve the quality and responsiveness of PC (PHAMEU COO4.2). Second, whether patient experiences are measured at facility level for quality improvement (imp1q79). How multimorbidity is dealt with in primary care largely varies between providers and, therefore, could better be measured at provider or practice level.

Conclusion

No further additions are needed

5.2.8 Mental health and PC

Helping people with mental health problems belongs to the broad, generalist service profile of primary care (WHO / WONCA, 2008). Moreover, many somatic health problems also have mental health aspects, sometimes as unrelated co-morbidity, sometimes as related co-morbidity (e.g. in the case of Parkinson's disease and depression), and sometimes as a consequence of the burden of coping with a somatic disease (Nuijen et al, 2006). The burden of disease, associated with mental health problems, is large (GBD 2019 Mental Disorders Collaborators, 2022) and waiting lists in the mental health care sector are large. As a consequence, an increasing share of more complex mental health problems are presented in primary care. The increased mental health workload in primary care can also result from deliberate policy measures to shift particular mental health services from secondary to primary care.

Continuity of care between primary and specialised care is often a challenge i.a. because of different financing (see also Position Paper EFPC, Smit et al, 2020). Access barriers, in particular among patients with co-morbid addictions, abound. Primary care is in a position to provide person-centred

care in cooperation between patients and their informal carers, and primary care teams; community-oriented care; and care that does not focus on providing a psychiatric diagnosis, but on a pragmatic approach to people's problems (Smit et al, 2020). In conclusion, dealing with mental health problems in primary care requires the right skills (mix) in primary care and good cooperation between the primary care team and specialised mental health services.

Coverage in our indicator system

Mental health skills in PC teams are covered by the indicator: Do the following health professionals work in primary care? (wrk1q20) with 'psychologist or mental health nurse' as an answering / coding option.
Cooperation between PC and specialized mental health care services can be covered by a separate question on availability of relevant policy documents (similar to GOV6.1) and by a separate indicator in the dimension coordination.

Conclusion

The following additions will be made:

- Has a governmental policy on cooperation or integration between PC and specialised mental health services been laid down in a law or policy paper? (further to GOV6.1; under 1.1 Governance)
- Do FPs control access to specialist mental health care? (under 3.4 Coordination)

5.2.9 PC and social care collaboration

Health and social problems are intertwined. Social problems can be cause or consequence of health problems. The silos of health and care systems are a reality for professionals, but not for patients (RCGP, 2019; EuroHealthNet, 2022). Consequently, people may present their problems where they think they may be solved, and this does not always coincide with the views of professionals. To prevent patients being sent from pillar to post, professionals in primary care and in social care need to have short lines of cooperation. In particular with a view to the social determinants of health, the collaboration with social care professionals is important. The upstream causes of inequalities in health are largely outside the realm of influence of primary care, but can be addressed in social care. Health care tends to focus on individual patients, while the problems of these patients are often not individual but a result of structural features of society. Risk factors for ill health are often embedded in social networks, and their management, although usually called self-management, requires a network approach. Social workers have a broader view of the networks of people and may be able to address these networks.

Coverage in our indicator system

Whether or not social workers are members of the primary care team is asked in the indicator: Do the following health professionals work in primary care? (wrk1q20) with 'social worker' as an answering / coding option. Cooperation between PC and social work services can be covered by a separate question on the policy documents (GOV1.1 and GOV6.1).

Conclusion

- Has a governmental policy on cooperation or integration between PC and social services been laid down in a law or policy paper? (further to GOV6.1; under 1.1 Governance)

5.2.10 Continuity of care out-of-hours

Continuity of care is an important goal in primary care. It is a broad concept referring to both ongoing patient-provider relationships and to aspects of the organization and provision of care. Usually a distinction is made between relationship continuity, management continuity and informational continuity (Hetlevik, 2021; RCGP, 2016). Continuity of care, either measured at individual patient level or as a practice characteristic, is associated with outcomes of care, such as reduced acute hospital admissions. Patient groups that most benefit from continuity of care are those with multi-morbidity and those with lower levels of education. Discontinuity may easily occur in evenings, nights and weekends, when primary care practices are usually closed and patients may have difficulties in finding care and health care workers may lack information about the patients.

Personal continuity is currently suffering as a result of demographic developments, staff shortage and new ways of working in today's health care services. To some extent this can be compensated for by management continuity and informational continuity. Management continuity, or the 'seamlessness' of care, involves co-ordination and teamwork between care-givers and across organizational boundaries. It helps the patient navigate the healthcare system. It depends on good communication and in the timely and accurate sharing of information, which is informational continuity. Informational continuity is the backbone for both relational and management continuity (RCGP, 2016).

Most solutions to the falling levels of continuity should be found at practice level, by improved teamwork, new ways of access and integration of services, supported by low threshold information technology. Barriers to sharing information within general practice and between primary and secondary care must be removed primarily at local level.

At regional level, networking of primary care practices with shared back-office functions and broadened skill mix can promote access and continuity, in particular in sparsely populated areas. Such networks can also have a function in the provision of primary care out-of-hours. Information technology and record sharing, should enable FPs and locums to provide continuity to patients from practices participating in the network. At system level such networking can be facilitated.

Coverage in our indicator system

The degree of involvement of PC in the provision of out-of-hours services is well-covered in Dimension 3.1 (Accessibility) by the question about the prevailing model(s) of these services (PHAMEU ACC3.4 / org2q66). This not only provides information on the mode of access for patients outside office hours, but also estimates the burden of these services for individual FPs. Also relevant in connection to out-of-hours care is the availability and exchange of patients records. This aspect is covered in Dimension 1.4 (Information structures).

Conclusion

There is no need for further additions

5.2.11 Care team well-being, Quadruple Aim

Primary care is under pressure in many countries. Increasing demand for primary care services coincides with a decreasing supply, resulting in overburdened care providers and vacancies in the teams. A recent report of the National Academy of Sciences of the USA, titled Achieving Whole Health (NASEM, 2023), has therefore emphasised team wellbeing as an important area of concern. This follows the step from triple aim to quadruple aim (Bodenheimer et al, 2014). Team wellbeing may be related to patient experiences. An international analysis of general practitioner job satisfaction showed a positive relation with patient satisfaction (Stobbe, Groenewegen, 2021). The same study also showed that job satisfaction is higher when general practitioners work less hours

and have more vacation. Less working hours and more vacation can be seen as a way to balance the tensions between work and private life, although part-time working can just as well be a challenge to continuity in the practice. There are no norms for what constitutes a 'healthy' number of working hours. There is no international regulation of working hours in primary care (as there is e.g. for residents working in hospitals: maximum of 48 hour working weeks according to EU regulation; Breuer et al, 2023). There may be national regulation for PC team members working in employed service, but self-employed primary care providers will most probably not by subject to working hours regulation.

Coverage in our indicator system

Team well-being is very much a variable at the level of practices and centres. In our indicator system several questions under Dimension 1.3 (Workforce development) are relevant, such as the ones asking about policies to address supply problems (HSC Survey) and the relative income of FPs (PHAMEU WFD2.2 / wrk2q25). But also in Dimension 2.2 there are relevant questions, such as whether patient experiences are measured at facility level and the availability of incentives for professionalisation of practice management.

Conclusion

An addition is suggested regarding the work-private balance:

The following additions are suggested regarding the work-private balance:

- Which percentage of active GPs is working part-time?
- Offers the medical curriculum in family medicine / general practice the possibility for part-time residents?

5.2.12 Social prescribing

The King's Fund defines social prescribing as: 'social prescribing, also sometimes known as community referral, is a means of enabling health professionals to refer people to a range of local, non-clinical services' to enhance their health and wellbeing (The King's Fund, 2020). Social prescribing acknowledges that the problems patients present to their PC provider are not necessarily (entirely) in the medical domain, but also in the social and community care domain. The fact that the patient's PC provider gives a social prescription, may give patients extra motivation to follow-up the prescription.

Social prescriptions are possible in several PC systems now, sometimes as pilots, but also on a broader scale (Scarpetti et al, 2024.). The scope, target groups, funding etc. of social prescribing differs between countries (Scarpetti et al, 2024). Social prescription is still being developed in many countries and the evidence for its effects for patients is largely in the phase of smaller, uncontrolled studies.

Coverage in our indicator system

The current indicator system does not yet contain indicators on social prescribing. It is worth adding because its broad, holistic approach to patients' wellbeing an health and the link it provides to social and community care.

Conclusion

We add 'social prescribing' to the set and would place it under the Domain of 'Systemic aspects of service provision', Dimension 3.2 'Comprehensiveness'. The new indicator question would be:

- Are social prescriptions by PC providers formally recognised in the country's PC system?

5.2.13 Extension of FP training duration

In most countries family medicine training lasts four years. The Royal College of General Practitioners has pleaded for an extension to six years (RCGP, 2019). However, this is a wish for the future and not a characteristic of PC. Therefore, we will not include it.

Coverage in our indicator system

The time residents spend in PC during training is represented in our indicator set (wrk4q29). However, the length of family medicine training is not.

Conclusion

The following indicator is suggested to add:

- What is the duration of the postgraduate training in family medicine / general practice?

5.2.14 Population health approach, outreaching

A population health approach is relevant because of the increasing importance of lifestyle diseases, health behaviours and social determinants of health. Conditions to promote continuity of care are important, such as patients listed with a specific PC provider.

Where in the past FPs could say that patients who did not contact the FP / practice were apparently healthy, this is no longer true (if ever it was). People are getting older and in many countries they (want to) stay longer in their own environment and in the community. This requires a more active, outreaching approach (Van Poel et al, 2023). The COVID-19 pandemic has shown that an outreaching approach is possible and adopted by PC practices in many countries. The question is whether it has become part of the normal routines, now that the pandemic has receded.

Coverage in our indicator system

Dimension 3.3 is devoted to continuity of care with questions about registration of patients with a PC provider ((PHAMEU CON1.1 / org1q62) and freedom to choose a PC provider (PHAMEU CON3.1 / org1q61). New questions will focus on service delivery by multidisciplinary teams and the evaluation of care pathways. Furthermore, the availability and exchange of relevant patient/population data are important (Dimension 1.4). Furthermore, collaboration between PC and public health care and between PC and social services are important for outreaching care. New questions will be added to Dimension 2.1 (Scale of PC Delivery) and Dimension 1.1 (Governance).

Conclusion

Taking other additions into account, no more are needed.

5.2.15 Learning health system based on PC data

In the process of care delivery, PC generates a lot of information. This information is stored in Electronic Medical Files (EMF) and, depending on the functionalities of the EMFs and guarantees for

protection of personal data (Kuchinke et al, 2016), this information can be used to feedback into the health care system at different levels. This makes a learning health care system possible (IOM, 2007; Friedman et al, 2015). PC is particularly suited for this function when patients are listed with a PC provider; in this case the population to which the information applies is known. The PC learning health care system enables a population orientation at the level of PC providers, regions and nationally. As a result of a learning PC system, more information about patients' needs is available.

Coverage in our indicator system

An important condition for a learning health care system in PC is indicated by the current indicator imp1q79 in Dimension 2.2 (Systems / structures for Quality Assurance and Safety).

Conclusion

No need to develop new indicators for this topic.

5.3 Summary of additions on topical issues

The result of the process of examination and consensus-seeking on identified topical issues among the researchers has been laid down in Table 5.1.

Table 5.1 Possible indicators on topical issues to be included, based on Chapters 3 and 4

Topical issue	Suggestions for new indicator (topics)
Health system resilience, dealing with pandemics	none
Environmental footprint of health care	'Environmental footprint of primary care', with a new indicator as follows: - *Is an estimate or calculation of the environmental footprint of PC available (Y/N).*
Serving de-populating regions	none
e-Health care	- *Are FPs / practices remunerated for online consultations* (under Dimension 1.2) - *Is there a national website for medical patient information set up / approved by the MoH or a FP professional association?* - *Percentage of PC practices using apps or online platforms*
Community involvement	none
Shortage of health care staff	none
Dealing with multimorbidity	none
Mental health and PC	- *Has a governmental policy on cooperation or integration between PC and specialised mental health services been laid down in a law or policy paper? (further to GOV6.1; under 1.1 Governance)* - *Do FPs control access to specialist mental health care? (under 3.4 Coordination)*
PC and social care collaboration	- *Has a governmental policy on cooperation or integration between PC and social services been laid down in a law or policy paper? (further to GOV6.1; under 1.1 Governance)*

Topical issue	Suggestions for new indicator (topics)
Continuity of care out-of-hours	none
Care team well-being, Quadruple Aim	- *Which percentage of active FPs is working part-time?* - *Offers the medical curriculum in family medicine / general practice the possibility for part-time residents?*
Social prescribing	Under Dimension 3.2 'Comprehensiveness': - *Are social prescriptions by PC providers formally recognised in the country's PC system?*
Extension of FP training duration	- *What is the duration of the postgraduate training in family medicine / general practice?*
Population health approach, outreaching	none
Learning health system based on PC data	none

6 Feedback on the development process and the draft indicators

In all stages of the development of SiSPC the research team received feedback. Initially this mainly concerned the development process, but later on also the emerging indicator system. The latter concerned the validity and consistency of the indicator items, including the correct phrasing of items in line with the indicator and whether they measure the indicator fields they are supposed to indicate. A major event of internal feedback was the presentation of the draft report and indicators to the consortium at a meeting in September 2024. Consortium partners were invited to reflect on the steps we made in developing SiSPC, and the provisional system of indicators available at that time and aspects of the data collection.
At several occasions and in several stages of the process the research team has presented its work in order to gain external feedback and to get new ideas on the way forward.

6.1 European Forum for Primary Care workshop 2022

In an early phase, in September 2022, a workshop was organized at the yearly conference of the European Forum for Primary Care (EFPC) to discuss the framework for SiSPC and to collect feedback and ideas from the participants.
Aim of the workshop was to get input and feedback from participants on our initial framework. SiSPC and its role in the PaRIS project were introduced at that occasion. The workshop was attended by some twenty participants from various countries (including Austria, Azerbaijan, Belgium, France) and with different backgrounds (FPs, policy-makers, researchers).
The discussion among participants was guided by a number of questions:

- What are main primary care challenges in your country?
- What success of primary care you can boost on in your country?
- How people-centred is primary care in your country?
- What system characteristics indicate for people-centred care?
- What about community participation in primary care in your country?
- What system characteristics indicate for community participation?
- Are vision documents on future developments in your country available? (e.g. from government; patient- or professional organisations) What are key elements?

Challenges to strengthening primary care that were reported in the discussion, related to:

- Fragmentation of expenditures for primary care, leading to less efficient and less satisfactory organisation of PC.
- Unclear roles and responsibilities of stakeholders, involved in the governance of primary care.
- Lack of clarity of competences of primary care and secondary care providers.
- Availability and implementation of self-monitoring devices for patients with chronic conditions.
- Use of PC generated information for surveillance.
- Organisation of out-of-hours services with regard to the role of FPs and accessibility to patients.

Successes of primary care in participants' countries that were mentioned in the discussion, were:

- Availability and use of guidelines; guidelines can be helpful tools to prevent overproduction and overutilization of care.

- Availability of (shared) data from electronic medical files; use of this information to inform practices on the profiles of their patient population.

The discussion about *community participation* revealed the following important issues and potential indicators:
- Community participation is not only relevant at the level of primary care practices, but also in health care institutions at the national level (e.g. insurance bodies).
- The role of patient associations in national policy making.
- The existence of non-disease-specific, national patient platforms.
- The existence of legislation on or national support for patient councils at primary care practice level.

Other inputs on indicators for strong PC:
- Resilience of the PC system, which is related to the problem solving capacity in PC and to accountability to and communication with all stakeholders.
- The proportion of the health budget allocated to primary care.
- Availability of incentives for improving quality of care.
- Existence of interprofessional teams.
- Use of telemedicine.
- Patient lists system and referral system.
- Ambulatory care sensitive conditions as focal area in quality assurance and improvement.
- Availability of information on ambulatory care sensitive conditions in the national information structures.

6.2 External consultation with draft final SiSPC

In the final stage of SiSPC development, by the end of 2024, we have presented the draft version of this report and system of indicators for review to a large number of international experts. These included National Project Managers of the PaRIS project and other experts from the network of the authors. Concerning the provisional indicators, reviewers were asked to reflect on:
- whether, in their view, the indicators cover what SiSPC aims to measure: the strength of the primary care system in their country;
- whether we missed important indicators for the strength of primary care at system level;
- whether indicators are redundant in their view;
- and finally, if they could report difficulties in answering indicator items and indicator data sources in their country (in English, French or German) that are accessible at central level.

This last mentioned information in particular, enables us to estimate the feasibility and burden of data collection to measure the SiSPC items. In that respect, we distinguish three groups of indicator items:
- Those for which data are collected centrally by the consortium (from accessible databases).
- Those to be answered easily by the country experts and NPMs and their team (which varies).
- Those needing more effort by experts and NPMs; e.g. because other experts need to be involved.

6.3 Results of the external consultation round

In December 2024 we invited National Project Managers from the PaRIS project and other experts, altogether from 34 countries, to review the final draft version of this report and the draft SiSPC indicator system. Besides, we received feedback - throughout the time of the project - from the five PaRIS consortium members.
Table 6.1 provides an overview of the response, broken down to the countries of the reviewers, whether the country participated in the PaRIS project and the availability of historical data from PHAMEU.

Table 6.1 Feedback on draft SiSPC report and indicators by country (and: either or not PaRIS participant and availability of historical PHAMEU data for comparison)

Country	Feedback on draft SiSPC received		PaRIS participant	PHAMEU data available**
Australia		No	●	●
Austria	Yes*			●
Belgium	Yes		●	●
Bulgaria		No		●
Canada		No	●	●
Cyprus	Yes			●
Czech Republic	Yes		●	●
Denmark		No		●
Estonia	Yes			●
Finland	Yes			●
France		No	●	●
Germany	Yes / Yes*			●
Greece	Yes		●	●
Hungary	Yes			●
Iceland	Yes		●	●
Ireland	Yes			●
Italy	Yes		●	●
Latvia	Yes			●
Lithuania	Yes			●
Luxembourg		No	●	●
Malta	Yes			●
Netherlands	Yes*		●	●
New Zealand	Yes			●
North Macedonia	Yes			●
Norway	Yes		●	●
Poland	Yes			●
Portugal	Yes		●	●
Romania		No	●	●
Saudi Arabia	Yes		●	
Slovak Republic	Yes			●
Slovenia	Yes		●	●
Spain	Yes*		●	●

Country	Feedback on draft SiSPC received		PaRIS participant	PHAMEU data available**
Sweden		No		
Switzerland	Yes			
Turkey	Yes			
UK - England - Wales	Yes* Yes			
USA		No		
Total	25 reviewers 5 SiSPC/PaRIS	9	19	35

* from members of SiSPC / PaRIS team

** PHAMEU data for Australia, Canada and New Zealand were collected separately for use in the QUALICOPC study

By the end of February 2025, after one reminder, we received a response from 25 out of 34 countries, a rate of 74%. About half of the respondents are from countries that did not participate in the PaRIS project. The success of our review round is not just visible in the good response rate but also in the accompanying letters to the feedback, which were generally appreciative and encouraging. We divided the feedback we received into two groups: on the one hand, general remarks, which will be discussed hereafter, and, on the other hand, comments on specific items, which will be presented in section 6.3.3.
In processing the feedback, we basically applied the same criteria as we did in the Chapters 4 and 5. In short, suggested items or proposed changes should relate to systemic aspects of primary care; not relate to outcomes of strong primary care; and point to omissions in draft indicator system.

6.4 General feedback from reviewers

In addition to the positive receipt of SiSPC, as a very timely initiative to strengthen research and development of primary care internationally, we identified the following general points (each of which is followed by our reaction).

- **Balanced focus**
  A general problem identified, is whether there is sufficient focus on chronic disease in SiSPC. This concern may be related to the origin of SiSPC in the PaRIS project on primary care for people living with chronic conditions. The importance of primary care for the management of chronic disease has been mentioned by several reviewers of the report. However, without denying this point, other reviewers mention that primary care also has an important role in prevention as well as in care for acute episodes.
  Our reaction: SiSPC aims to provide a balance between attention to chronic care and other roles of primary care. Perhaps, the attention our indicator system explicitly pays to specific aspects of (the management of) chronic disease is not very extensive. But many aspects of strong primary care are extremely relevant to people living with a chronic diseases, in particular in the area of coordination and comprehensiveness of primary care. At the same time, however, we have included indicator items relating to prevention and acute care.

- **Strong focus on family physicians**
  Many indicators that constitute SiSPC refer to family practice and family physicians. Reviewers stress that primary care is broader and that, ideally, all other professions active in primary care teams should also be considered in SiSPC.

Our reaction: although we agree that primary care is broader that family practice alone, we have come to the conclusion that our approach is defendable and that the 'ideal' broad approach is not feasible, for several reasons. First, we think that FPs continue to be the backbone of primary care. Secondly, paying equal attention in our indicator system to all other primary care disciplines would multiply the number of indicators. This would not only result in a too bulky number of indicators, also the availability of information on other professions is generally very limited. Still, we are devoting quite some attention to practice nurses, whose profession is increasingly important for strong primary care, in particular in the care for people with a chronic disease.

- **The time dimension**
  Reviewers point to the absence of items on changes over time in the SiSPC indicator system. For example, an increase of the share of elderly in the population may be more important than just the actual percentage of elderly people. Also in other areas, changes may be more relevant than the situation at one point in the time. It has also been suggested that we may miss situations were a change occurred, but that was reversed again. The example related to health in all policies.
  Our reaction: The (first) measurement of the SiSPC indicator system, later this year, is likely to represent the situation in the early 2020s. A first indication of past changes may come from a comparison with PHAMEU data, which reflect the situation around 2005. However, probably more importantly, we aim to have SiSPC updated regularly, in the context of future rounds of the PaRIS project. Such repeated measures will produce valuable insight in future changes in the strength of primary care. Nevertheless, capturing the impact of changes - and their possible reversals - will continue to be challenging. Basically, SiSPC will provide repeated cross-sections.

- **Relevance of answering categories**
  According to some reviewers, the answering categories or suggested coding are not always clear enough. In some countries, the answering categories for indicator items are not able to cover the specific situation in that country. Reviewers suggested possible options for "Not applicable", "Partial" or "no available data" for a number of indicators. Furthermore, we should more often provide the option "Other" with the possibility of free-text input.
  Our reaction: This makes sense and, so, we have checked the indicator items on the need for such additional answering options.

- **Core set of indicators as an option**
  Given the length of the SiSPC indicator system, it was suggested to distinguish a core set of ('mandatory') indicators by way of a 'short SiSPC' for quick measurement.
  Our reaction: Although a core set of indicators seem to enable an easier, more efficient data collection, we are not in favour of it. The SiSPC indicator items refer to comprehensive dimensions of strong primary care and will be combined through a statistical model. Measurement with a core set of indicators would miss out important areas. Furthermore, statistical analyses applied on SiSPC data also have a 'self-cleaning' function: they can identify indicator items that weakly relate to an overarching dimension and that can be skipped in future data collections.

- **Regarding data collection**
  The following remarks are particularly important for the actual data collection:
  - **Instruction**
    In the actual collection of the information. a clear instruction will be helpful.
    Reaction: an instruction will be provided on the level of the indicator items (if necessary)
  - **Federal countries**
    How should experts / NPMs be instructed in strongly de-centralised (federal) countries?

Reaction: for federal countries we aim at information of the country as a whole and not per federal state / autonomous province. We are aware that this may be problematic if primary care systems differ strongly between states and provinces.

- **Diverse health insurance systems**
  How to handle countries with different insurance modalities that have different requirements?
  Reaction: we will instruct experts to focus on the most important insurance systems (in terms of numbers of insured people).

6.5 Specific additions and modifications suggested by the reviewers

Table 6.2 Additions and modifications to the current framework suggested by external reviewers

PC Structure	
Suggested additions / modifications	**Our comment**
Stakeholder involvement is missing	We think, patients are the most important stakeholders in any primary care system. Patient involvement is included in SiSPC Furthermore, the relevance of other stakeholders is much more system-dependent. Not adopted
(Corporate) ownership of primary care practices. D1.1.13 only refers to non-profit	We don't see how this relates to strength of primary care. In some situations or systems corporate ownership may work well. Not adopted
A government health policy on chronic care (national chronic care plan)	For SiSPC health policy on chronic care is only relevant if restricted to primary care. Not adopted
Are chronic patients educated/activated in self-management?	Patient education and -activation can better be measured at patient and/or provider level. Not adopted
Availability of a national registry / administrative data flow from primary care	We think, this is sufficiently covered by D1.4 information structures. Not adopted
Four indicators missing: 1. Is patient registration mandatory?	We think, this is sufficiently covered by 3.3.3. Not adopted
2. Is appointment system in place?	This will vary between practices and, therefore can best be measured at practice level. Not adopted
3. Are PC providers public employees or private providers or both (what are the shares?)	We don't see how this relates to strength of primary care. Not adopted
4. Is there a national masterplan (network) for PC providers? When was it adopted / last updated?	We think, this is largely covered by 1.1.1. Not adopted
Existence of PHC governance at national / regional level; existence of intermediate organizations (networks, regional organizations)	We think, this is sufficiently covered by 1.1.8. Not adopted

PC Structure	
Suggested additions / modifications	Our comment
Not only list system is important, but also the length of the patient / PHC doctor relationship	This can only be measured at patient level. Not adopted
D1.1.3 Consider adding a question on the degree of implementation	It will be very difficult to extract 'degree of implementation' from policy documents. Not adopted
Explicit measures of health inequality (e.g. access for marginalised groups)	Such policy is addressed in 1.1.7. Cost-sharing, which is relevant in this respect, is asked in D1.2.7. Not adopted
A key indicator would be if preventive services are included in automatic / mandatory PC coverage	This is covered to some extent by D3.2.1 and D3.2.2. We think, no more expansion is needed here. Not adopted
D1.1.10 what if in some committees?	We added 'in any' to the answering options
D1.2.5 Would find hard to answer as a simple yes/no. What is the threshold for 'yes'?	We rephrased the question: 'Is any of the following …'
D1.2.6 (Coverage of the population): Will population be defined in terms of citizenship / residency or more broadly?	We rephrased the question: 'What % of the resident population …'
D1.2.7 The answers may differ for different categories of population	We rephrased the question: '… in the most common basic benefits package …'
1.3 Workforce development: to which extent each category of healthcare professionals operates up to their license and fulfils their roles based on their knowledge and skills	This is e.g. the problem of nurses doing mainly administrative tasks. Relevant but too difficult to measure. Not done.
D1.3.1 Role = share?	We rephrased the question and specified the answers: 'What is the estimated share of ….'. Answers: Important (>20% estimated), Marginal (5-20%), Insignificant or absent (<5%)
1.3.5 it is not clear which chronic conditions are meant specifically	In this item we are interested in any guideline, not just on chronic conditions. We rephrased the question: '…..standards available for the management (diagnosis and treatment) of diseases ….'
D1.3.8 it may be relevant if there are other programmes/strategies in place to supplement the work force	This is covered by 'other, namely ….' Not done
1.3.15 (% of med graduates that become FPs) What time period do you have in mind? Data for the most recent available year or an average over the last x years?	We added: 'Latest available year'
Development of e-health The role of e-health and telemedicine could be further specified as they are becoming increasingly central to primary care	For now, we think, this is sufficiently covered by D1.2.8 (Payment of telemed consultations). The use of specific e-health applications can best be measured at provider level. Not adopted

PC Structure	
Suggested additions / modifications	Our comment
So-called digital health centres have become more common in Finland and remote care is generally increasing. We have an indicator: E-service appointments, % of outpatient appointments in primary health care (in Finland 24.5 % - year 2023). Perhaps you could consider the question of whether primary care uses electronic patient records, electronic prescriptions, remote consultations (video), chat services, and digital health stations.	As we think that, at present, most FPs use electronic records in the countries SiSPC is aimed at, this is not asked. The average use of e-Health applications is asked in D1.4.3. Not adopted
Use of data from primary care. The question is how it is used - whether for the purposes of differentiation in reimbursement, for evaluation of the quality of care or for research reasons.	We think, this is covered and sufficiently specified by D1.4.1 and D1.4.4. Not adopted
D1.4.1 We consider this to be a very useful question in which we suggest adding the answer option of 'Administrative information'. In some systems (such as in Greece), where adequate clinical information is not systematically available, administrative information is an alternative.	If only administrative information is available, we think this indicates relatively weaker primary care. Not adopted
D1.4.2 We find it difficult to collect this information systematically. In addition, several academic centers may have a rich production of scientific articles related to PHC, but these may not reflect research activity throughout the country and most importantly do not reflect the degree of development of PHC.	We removed this indicator altogether from SiSPC. It is not just difficult to measure centrally, it may also be biased by the language of the publication
Indicators on programmes for remote patient monitoring using digital systems/equipment? Use of AI in primary care organisation and practice - or about initiatives that encourage the use of digitalization and/or IA in daily practice?	Indeed, these topics are relevant, but they can better be measured at patient and/or provider level Regarding the use of AI: we think that in this stage, applications are not (yet) related to stronger primary care Not adopted

Systemic aspects of PC facility management	
Suggested additions / modifications	**Our comment**
2.1.1 (percentage of FPs working in the following practice settings): answering options unclear	The answering options are simplified and we changed 'Other' into: 'Other primary care disciplines, namely .....'
2.1.1 focus on the two main models of provision from which the majority of beneficiaries are served	See above
Do FPs work in community services? yes or no	In different countries the term 'community services' will be understood differently, which make the question ambiguous. Not adopted
Is CPD of PHC professionals financially supported by the state	We think that 'mandatory' is more essential than who is paying. We are not in favour of asking more details. Not adopted
2.2.3 (Are community health surveys conducted to improve the quality and responsiveness of PC?): We have county health surveys, but not particularly to improve quality and responsiveness of PC. Given this, I am not sure how to respond to this indicator	For this Dimension (Systems/ structures for Quality Assurance and Safety) the aim to improve quality and responsiveness of primary care is quite relevant. Not adopted
D2.2.3 difference between regularly and incidentally?	We removed 'regularly' and 'incidentally' in the wording of the answering options to only Yes/No
D2.3.1 Do you mean that there is an allocated budget coming from the healthcare system I find the wording of this tricky. Why not look at the actual (whether practice managers are widespread) rather than the availability of funding?	Yes, question has been reformulated; 'allocated budget' is used Concerning the actual employment of practice managers, this can better be asked in provider surveys
D2.2.4 addition between brackets: (for quality improvement). What if for certification?	We removed the addition between brackets
D2.4.1 Define answering options	We reformulated the question: 'Do … have any formal role in ….' The answering categories are: Yes/No

Context	
Suggested additions / modifications	**Our comment**
Using % of the population 45+ would be closer to PaRIS	For the workload of primary care, the proportion of 65+ is likely to be more relevant. Moreover, the focus of SiSPC is broader than that of PaRIS
Age dependency ratio	While % 65+ is relevant for demand for care, age dependency ratio is indeed relevant for care provision. So we added this to Context
People with chronic morbidity (self-reported chronic morbidity (https://ec.europa.eu/eurostat/web/health/database))	This information is not available in non-EU countries. Not adopted
C2.2 measure unemployment by age group and consider adding the percentage of long-term unemployment. We also consider reporting the dependency rate employed to 65+ to be important as well	This is not adopted because it is too detailed. In specific studies researchers should find it themselves
C3: Trust in public institutions as a proxy for the relationship between public authorities and citizens (https://www.oecd.org/en/topics/trust-in-government.html)	This has been added
C3.2: Due to cultural differences and high degree of subjectivity we propose to exclude this indicator. Instead, we propose to use the results of the Time Use Surveys in order to gain information about 'the time allocated to provide help to an adult of another household'. We consider that this type of information offers more objective information about individuals'	Our aim with this indicator is to measure cultural differences, not actual spending of time. Not adopted
Why just count the number of years in government and not the % of parliament?	Influence of political parties will be stronger when they are part of the government. We ask about the number of years because it takes time (years) to implement policies. Not adopted.
C4: People at risk of poverty and social exclusion (https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Living_conditions_in_Europe_-_poverty_and_social_exclusion) People at risk of poverty thresholds as a proxy for affordability (https://ec.europa.eu/eurostat/databrowser/product/view/ilc_li01?category=livcon.ilc.ilc_ip.ilc_li)	Indicator C4 relates to Welfare benefits and Social protection structures, not at populations at risk. Not adopted
C4.2 We propose the index 'Unemployment benefit as % of average earnings per employee'	The advantage of our indicator C4.2 is its availability for a larger number of countries. Not adopted
C7.1 We propose to report data related to "Unmet Health Needs due to financial barriers" or considering adding it to DOMAIN 3. Systemic Aspects of Care Delivery - DIMENSION 3.1 Accessibility	Unmet health needs can best be measured directly at population level. Not adopted

Not fitting in the above domains	
Suggested additions / modifications	Our comment
Avoidable Hospitalization for chronic conditions as a proxy of an effective primary care (source: OECD Health at Glance) Avoidable A&E visits for chronic conditions	These are outcomes of strong primary care (which are part of SiSPC). Not adopted
What is the date of the answers/items? Which time is important – the present, or the (recent) past (which may still enduring effects even after policy reversals)?	This needs to be explicitly mentioned in the instructions
<u>Redundant</u> Some indicators on specific professions (e.g. primary care nurses) could be consolidated to avoid duplication The indicators on financing and remuneration could also be streamlined, as they partially overlap in terms of content 1.3.14 (time spend practicing in a PC/FP practice during postgraduate specialisation 1.3.22 (duration of the postgraduate training in family medicine) 1.4.2 (volume of publications)	We don't think 1.3.14 and 1.3.22 are redundant. Not adopted (Previous) question 1.4.2 has been removed altogether (see above)

7 Result: overview of indicators and data sources

The overview provided in this chapter builds on all information from the Chapters 3, 4 and 5 as well as the feedback from the broad international review described in Chapter 6. Our focus In processing all this information was the relevance of the items for our purpose (‘does it inform us about the strength of primary care’) an whether the indicators had sufficient added value. Last but not least, we aimed to avoid an unpractical bulky system of indicators. Table 6.2 shows in detail how we dealt with this challenge.

The final selection of indicator topics has been worked out in indicator questions and answering categories (coding). Furthermore, for each indicator item source(s) of information have been identified. The research team has tried its best to find international databases and other available online sources. For countries where indicator information may be found in the series Health Systems in Transition (HiT) of the European Observatory on Health Systems and Policies, the relevant sections have been provided and specific subjects and key words have been suggested to help searching the HiT publication.
Altogether, this final version of SiSPC contains 70 indicators for the strength of primary care; many of which can be clustered into broader dimensions. Furthermore, there are 30 indicators on the context of primary care that can be used as backgrounds in the analyses. Indeed, single indicator items can be used for particular analyses, but a more powerful use of this dataset will be to cluster items into a comprehensive score for a broader dimension, as we suggest in the ordering of Table 7.1.

Table 7.1 Overview of indicators, answering categories and sources of information

Abbreviations:
FP = Family physician
PC = Primary care
HSPM = Health Systems Performance Monitor
HiT = Health Systems in Transition Series (European Observatory on Health Systems and Policies)
HSC= OECD Health System Characteristics survey

CONTEXT INDICATORS

Indicators of PC Context (not on strength of primary care) (30 indicators)		
Section C.1 Population (5 indicators)	Coding / answering categories	Source(s)
C.1.1 Population size	Continuous variable: - # inhabitants (in mln)	Source (internat. databases) WorldBank database https://databankfiles.worldbank.org/public/ddpext_download/ POP.pdf
C.1.2 Population density	Continuous variable - # inhabitants per km^2	Source (internat. databases) WorldBank database Population density (people per sq. km of land area) | Data (worldbank.org)
C.1.3 Age distribution	- % of population 65 /+	Source (consortium) WorldBank database Population ages 65 and above (% of total population) | Data (worldbank.org)
C1.4 Age dependency ratio	….. % of dependents per 100 working-age population	Source: https://databank.worldbank.org/metadataglossary/gender-statistics/series/SP.POP.DPND#:~:text=Age%20dependency%20ratio%20is%20the,per%20100%20working%2Dage%20population
C.1.5 Urbanicity	- % of population living in urban areas (as defined by national statistical offices)	Source (internat. databases) WorldBank database https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS

Indicators of PC Context (not on strength of primary care) (30 indicators)			
Section C.2 Economy (4 indicators)		Coding / answering categories	Source(s)
C.2.1	Structure of the economy; added value per sector	Answer: - added value to GDP: o % primary sector o % secondary sector o % tertiary sector	Source (internat. databases) WorldBank database Primary: Agriculture, forestry, and fishing, value added (% of GDP) | Data (worldbank.org) Secondary: Industry (including construction), value added (% of GDP) | Data (worldbank.org) Tertiary: Services, value added (% of GDP) | Data (worldbank.org)
C.2.2	Unemployment	- Average % last 5 years	Source (internat. databases) WorldBank database World Development Indicators | DataBank (worldbank.org)
C.2.3	Gross national income (GNI) per capita	- In PPP $	Source (internat. databases) United Nations Development Programme (UNDP)
C.2.4	Income inequality	- Gini index	Source (internat. databases) WorldBank database Gini index | Data (worldbank.org)
Section C.3 Social & cultural values (4 indicators)		Coding / answering categories	Source(s)
C.3.1	Values regarding the Role of the state	Government's vs individual responsibility: scored 1-10 (1 = completely agree with responsibility of government; 10 = completely agree with responsibility of individual) Answers: - % 1-3 - % 8-10	Source (internat. databases) World Value Survey and European Values Survey; Wave 7 (2017-2022). Q108 WVS Database (world valuessurvey.org) https://europeanvaluesstudy.eu/methodology-data-documentation/survey-2017/joint-evs-wvs/
C.3.2	Family values	Child's duty to take care of ill parent (degrees of agreement). Answer: - % (strongly) agree	Source (internat. databases) World Value Survey and European Values Survey; Wave 7 (2017-2022). Q38 WVS Database (world valuessurvey.org) https://europeanvaluesstudy.eu/methodology-data-documentation/survey-2017/joint-evs-wvs/

Indicators of PC Context (not on strength of primary care) (30 indicators)			
Section C.3 Social & cultural values (4 indicators)		Coding / answering categories	Source(s)
C.3.3	Government participation of left-wing parties	Number of years in government in the period 2007-2021 (last 15 years) Answers (to be calculated): - 1.00=100% of years left wing parties; - 0,75= >66,6%; - 0,50= 66,6-33,3%; - 0,25= <33,3% Variable: GOV_left1	Source (internat. databases) Inst of Pol Sc, Univ of Bern (Comparative political dataset) Data – Comparative Political Data Set (cpds-data.org)
C.3.4	Trust in public institutions	….. % of population who indicate trust in their national government (0-10 scale)	Source https://www.oecd.org/en/topics/trust-in-government.html
Section C.4 Welfare benefits and social protection (3 indicators)		Coding / answering categories	Source(s)
C.4.1	Social expenditure	Public social spending Answer: - As % of GDP	Source (internat. databases) OECD database Social Expenditure - Aggregated data (oecd.org)
C.4.2	Protection against loss of income due to unemployment	SDG 1.3.1 Answer: - % of unemployed covered against loss of income	Source (internat. databases) ILO ILO Data Explorer
C.4.3	Effectiveness of pension schemes: net pension replacement rate *(Defined as the individual net pension entitlement divided by net pre-retirement earnings; taking into account personal income taxes and social security contributions paid by workers and pensioners)*	Answer: - Pension as % of pre-retirement earnings (by gender)	Source (internat. databases) OECD (2024), Net pension replacement rates. doi: 10.1787/4b03f028-en (Accessed on 01 February 2024) Pensions - Net pension replacement rates - OECD Data

Indicators of PC Context (not on strength of primary care) (30 indicators)		
Section C.5 Education(-related) resources (3 indicators)	Coding / answering categories	Source(s)
C.5.1 Years of education	Answer: - # years	Source (internat. databases) United Nations Development Programme (UNDP)
C.5.2 Human Development Index (HDI)	Answer: - index	Source (internat. databases) United Nations Development Programme (UNDP)
C.5.3 Internet access	Answer: - % of households with internet access	Source (internat. databases) Eurostat EU survey on the use of Information and Communication Technologies (ICT) in households and by individuals https://ec.europa.eu/eurostat/databrowser/view/isoc_ci_in_h/default/table?lang=en
Section C.6 Lifestyle (3 indicators)	Coding / answering categories	Source(s)
C.6.1 Smoking	Answer: - % daily smokers 15+	Source (internat. databases) OECD Health data https://data.oecd.org/healthrisk/daily-smokers.htm (See table in folder data/Contextual indicators)
C.6.2 Alcohol use	Answer: - # litres annual sales of pure alcohol per person aged 15+	Source (internat. databases) OECD Health data https://data.oecd.org/healthrisk/alcohol-consumption.htm (See table in folder data/Contextual indicators)
C.6.3 Population overweight or obese	Answer: - % population overweight or obese aged 15+ (self-reported or measured)	Source (internat. databases) OECD Health data https://data.oecd.org/healthrisk/overweight-or-obese-population.htm
Section C.7 Health system (8 indicators)	Coding / answering categories	Source(s)
C.7.1 Health expenditure	Answer: - % of GDP	Source (internat. databases) WHO Global Health Expenditure Database (GHED) https://apps.who.int/nha/database/Select/Indicators/en
C.7.2 Hospital beds	Answer: - #/1000 population	Source (internat. databases) https://data.oecd.org/healthcqt/hospital-beds.htm

Indicators of PC Context (not on strength of primary care) (30 indicators)			
Section C.7 Health system (8 indicators)		Coding / answering categories	Source(s)
C.7.3	Long-term care beds	Answer: - #/1000 population	Source (internat. databases) OECD health statistics https://stats.oecd.org/Index.aspx?QueryId=30142
C.7.4	Non-public sources of revenue (Out of pocket payments OoP; Voluntary health insurance VHI)	Answers - OoP as % of current health expenditure - VHI as % of current health expenditure	Source (internat. databases) WHO Global Health Expenditure Database (GHED) https://apps.who.int/nha/database/Select/Indicators/en
C.7.5	Overall coverage of health care costs	Answer: - Index SDG 3.8.1	Source (internat. databases) OECD Health data https://www.oecd-ilibrary.org/sites/7a7afb35-en/1/3/5/1/index.html?itemId=/content/publication/7a7afb35-en&_csp_=6cf33e24b6584414b81774026d82a571&itemIGO=oecd&itemContentType=book
C.7.6	Situation of 'Health-in-all-policies' (HiAP) in the country	Answer (most appropriate): - (1) Very little or no HiAP awareness, action or whatsoever - (2) Emerging (there is a governmental vision; interest and intersectoral contacts but no formal commitment to develop HiAP). - (3) Progressing (there is formal commitment to proceed with HiAP; committees or task forces exist; but governance structures and implementation plans are in an early stage) - (4) Established: governance and implementation mechanisms work well; HiAP is embedded as a recognised way of working; e.g. health impact analyses; health lens analyses)	Source 1: (internat. databases): HiTs, text from section 2.5 (See subfolder Contextual indicators in folder Data) Source 2: (optional) National expert/NPM

Indicators of PC Context (not on strength of primary care) (30 indicators)			
Section C.7 Health system (8 indicators)		Coding / answering categories	Source(s)
C.7.7	To what extent is environmental footprint of health care a reality? (one answer)	Answer (most appropriate): - (1) No awareness, action, estimates or whatsoever on environmental footprint of health care - (2) Awareness but no or little action in this respect - (3) A vision on environmental footprint has been laid down in a policy document by government or professional organisation - (4) Estimates / calculations of the environmental footprint of health care facilities are available	Source 1 (internat. databases) See: 'Indicators C7.7 / C7.8 Environmental Footprint, Data Sources per country'; in folder Data Source 2: National expert /NPM / nat. source
C.7.8	Are estimates or calculations of the environmental footprint of PC facilities specifically available?	Answer: - Yes - No	Source 1 (internat. databases) See: 'Indicators C7.7 / C7.8 Environmental Footprint, Data Sources per country'; in folder Data Source 2: National expert/NPM

INDICATORS ON FEATURES OF PRIMARY CARE (PC)

DOMAIN 1. PC Structure (46 indicators)			
DIMENSION 1.1 Governance (12 indicators)		Coding / answering categories	Source(s)
1.1.1	A governmental health policy document issued including an explicit vision on P(H)C? *NB1: Vision means: basic principles; the role of PC in health care; priorities and future actions for PC.* *NB2: documents by stakeholders etc. are not meant here.* *NB2. The vision can be included in a broader document*	Answer: - No such document *(continue to 1.1.8)* - Yes If Yes: - Year of issue (latest) - Weblink of document(s) *(Also answer 1.1.2 – 1.1.7)*	Source 1: HiT (2020 – 2024) - search terms: PHC – PC – primary health care – primary care – ministry of health – legislation – strategy – plan - Relevant sections: 2.4 – 2.7 – 5.3 – 6.1 – 6.2 – 7.2 – 9.1 – 9.2 Source 2: EU/OECD/Observatory Country Health Profiles Source 3: National expert /NPM (for verification / addition)
1.1.2	*Re. 1.1.1 (if 'yes')* What is the status of the document in 1.1.1?	Answer: (which applies) - (1) Policy paper - (2) Law / regulation / directive - (3) Other: namely …..	Source 1: HiT (2020 – 2024) Source 2: National expert / NPM (details in 1.1.2 – 1.1.7 may not be available in HiTs)
1.1.3	*Re. 1.1.1 (if 'yes')* Has a policy on cooperation among services and providers within PC explicitly been mentioned?	Answer: - Yes - No	Source 1: HiT (2020 – 2024) Source 2: National expert /NPM The document used in 1.1.1 to be searched with (combinations of) these terms: - collaboration - teamwork - network - interdisciplinary integration

DOMAIN 1. PC Structure (46 indicators)			
DIMENSION 1.1 Governance (12 indicators)		**Coding / answering categories**	**Source(s)**
1.1.4	*Re. 1.1.1 (if 'yes')* Has a policy on cooperation between PC and specialised mental health services explicitly been mentioned?	Answer: - Yes - No	Source 1: HiT (2020 – 2024) Source 2: National expert /NPM The document in 1.1.1 to be searched with (combinations of) these terms: - teamwork - mental healthcare - collaboration
1.1.5	*Re. 1.1.1 (if 'yes')* Has a policy on cooperation between PC and social services explicitly been mentioned?	Answer: - Yes - No	Source 1: HiT (2020 – 2024) Source 2: National expert /NPM The document in 1.1.1 to be searched with (combinations of) these terms: - collaboration - social services - community services
1.1.6	*Re. 1.1.1 (if 'yes')* Has a policy on cooperation between PC and Public Health explicitly been mentioned?	Answer: - Yes - No	Source 1: HiT (2020 – 2024) Source 2: National expert /NPM The document in 1.1.1 to be searched with (combinations of) these terms: - public health - public health services - collaboration
1.1.7	*Re. 1.1.1 (if 'yes')* Has a policy to avoid inequities been mentioned (i.a. concerning particular groups in the population)	Answer: - Yes - No	Source 1: HiT (2020 – 2024) Source 2: National expert /NPM The document in 1.1.1 to be searched with (combinations of) these terms: - inequity - discrimination - migrants - minority group - health literacy - women
1.1.8	Have (major) responsibilities for PC been decentralized to regional or local level?	Answer: - Yes - No	Source 1: HiT (section 2.3) Source 2: HSPM / Country Health Profile HSPM (who.int) Source 3: (optional): National expert / NPM
1.1.9	If state inspection on health care exists, does it have a specific unit for PC?	Answers: N.a. (no state inspection) - Yes - No	Source: National expert / NPM

DOMAIN 1. PC Structure (46 indicators)			
DIMENSION 1.1 Governance (12 indicators)		**Coding / answering categories**	**Source(s)**
1.1.10	What is the role of patient organisations in aspects A-E of health care policy making?	Answers A-E: - (A) In making any key decision in health policy o No o As an observer o Consulted o As voting member - (B) In any expert panel or workshop at the Ministry of Health: o No o As an observer o Consulted o As voting member - (C) In any Health technology assessment (HTA) procedure for new treatment options o No o As an observer o Consulted o As voting member - (D) In any health decision making in the national parliament o No o As an observer o Consulted o As voting member - (E) In any ethics committees for clinical trials o No o As an observer o Consulted o As voting member	Source 1: HiT section 7.1.2 Source 2: National expert / NPM For France and Italy: Souliotis K, Agapidaki E, et al. Assessing Patient Organization Participation in Health Policy: A Comparative Study in France and Italy. Int J Health Policy Manag. 2018 Jan 1;7(1):48-58. doi: 10.15171/ijhpm.2017.44. PMID: 29325402; PMCID: PMC5745867. Answering categories get value 0, 1, 2 or 3. (Indicator score is sum of answers).
1.1.11	Have any laws/regulation pertaining to informed consent been implemented (also applicable to treatment in PC)?	Answer: - Yes - No	Source 1: HiT, section 2.8.3

DOMAIN 1. PC Structure (46 indicators)			
DIMENSION 1.1 Governance (12 indicators)		Coding / answering categories	Source(s)
1.1.12	Have any laws/regulation pertaining to a procedure to process patient complaints been implemented (also applicable to PC facilities)?	Answer: - Yes - No	Source 1: HiT, section 2.8.3 Source 2: National expert / NPM
DIMENSION 1.2 Economic & Financial Conditions (8 indicators)		Coding / answering categories	Source(s)
1.2.1	At the national level, does PC have a budget that can be distinguished from other levels of care (e.g. specialist care)?	Answer: - Yes - No	Source: National expert / NPM
1.2.2	Total expenditure on PC as % of total expenditure on health	Answer: - … %	Source: OECD System of Health Accounts (SHA). (see document in file Data) https://www.oecd-ilibrary.org/sites/7a7afb35-en/1/3/4/1/index.html?itemId=/content/publication/7a7afb35-en&_csp_=6cf33e24b6584414b81774026d82a571&itemIGO=oecd&itemContentType=book
1.2.3	Total expenditure on prevention and public health as % of total expenditure on health	Answer: - … %	Source: WHO Global Health Expenditure Database (GHED) https://apps.who.int/nha/database/Select/Indicators/en
1.2.4	What is the most frequent payment system for FPs/PC providers? (indicate the most frequent payment mode in case of a single mode of payment or the most frequent	Answer: - Salary - Capitation - Fee-for-service - Pay-for-performance - Bundled payments - Global budget - Other, please specify	Source 1: OECD HSC Survey (Q.18b) (see document in file Data) Source 2: HiT (section 3.7 Payment mechanisms) Source 3: National expert / NPM

DOMAIN 1. PC Structure (46 indicators)		
combination of single payment modes)		

DOMAIN 1. PC Structure (46 indicators)			
DIMENSION 1.2 Economic & Financial Conditions (8 indicators)		Coding / answering categories	Source(s)
1.2.5	Is any of the following support available for carers/family carers?	- In cash (e.g. care allowance, paid care leave, attendance allowance) o Yes / No - In kind (e.g. vouchers, respite services, social insurance contributions, unpaid care leave, day/night care services, community care services in general) o Yes / No	Source 1: European Social Policy Network ESPN LTC report; country profiles (see document in file Data) https://ec.europa.eu/social/BlobServlet?docId=24080&langId=en Search term: 'informal care' Source 2: HiT (section 5.9 Services for informal carers) Source 3: National expert / NPM
1.2.6	What % of the resident population obtains basic PC coverage through the following modes?	- Automatic PC coverage (e.g. based on residence) o ….. % - Compulsory/mandatory PC coverage, based on payment of a specific contribution or premium (by individuals or households) o ...%	Source 1: HSC Survey (mind: specific PC coverage) (Q.1) (see document in file Data) Source 2: HiT (sections 3.3.1 Coverage) Source 3: National expert / NPM
1.2.7	To what extent are the following FP services included in the (most common) basic health benefits package?	FP office consultations and home visits - Free at point of care o Yes / No - Subject to a co-payment per service o Yes / No - Subject to a co-payment as % of the price o Yes / No - Not part of the basic benefit package o Yes / No o	Source 1 HSC Survey, Q.12 re. Outpatient care contacts / Primary physician Medicines (not PC only) Source 2 WHO Europe (Can people afford to pay for health care) Source 3 National expert / NPM

DOMAIN 1. PC Structure (46 indicators)			
DIMENSION 1.2 Economic & Financial Conditions (8 indicators)		Coding / answering categories	Source(s)
1.2.7		FP prescribed medicines - Free at point of care o Yes / No - Subject to a co-payment per service o Yes / No - Subject to a co-payment as % of the price - Yes / No - Not part of the basic benefit package Yes / No	
1.2.8	Are FPs/PC practices remunerated for online consultations?	- Yes - No	Source: National expert / NPM
DIMENSION 1.3 Workforce Development (22 indicators)		Coding / answering categories	Source(s)
1.3.1	What is the (estimated) share of general physicians who did *not complete a family medicine specialisation* in the provision of first contact care? *NB: Residents in Family Medicine are not meant here.*	- Important (>20% estimated) - Marginal (5-20%) - Insignificant / absent (<5%)	Source: National expert / NPM
1.3.2	Are FPs obliged to participate in continuous professional development (CPD)? (e.g. in a system of gaining points)	- Yes - No	Source 1: HSC Survey (Q.43) Source 2: EURACT CME/CPD database (account needed) (39 European countries) https://www.euract.eu/country-database-entries/index/93c7b61e-25f3-4dde-89b6-2ce13168484a Source 3: National expert / NPM

DOMAIN 1. PC Structure (46 indicators)			
DIMENSION 1.3 Workforce Development (22 indicators)		Coding / answering categories	Source(s)
1.3.3	Do national association(s) or college(s) of FPs exist which have a focus on professional development, medical education and/or scientific activities? *(NB: focus beyond defending material interest).*	- Yes - No If yes: weblink	Source 1: WONCA Europe; member organizations (122 in 102 countries) Member Organisations | WONCA Europe (with links to each member) Source 2: National expert / NPM
1.3.4	Do national organisation(s) (or/and nurses scientific bodies) of PC nurses exist which have a focus on professional development and education and/or scientific activities? *(NB: focus beyond defending material interest; this focus may be represented in a broader professional organisation).*	- Yes - No If yes: weblink	Source 1: International Council of Nurses (ICN) | ICN - International Council of Nurses Source 2 National expert / NPM
1.3.5	Are evidence-based national clinical practice guidelines/clinical protocols/standards available for the management (diagnosis and treatment) of diseases in PC?	- Yes - No If yes: how have these been developed? - By the PC profession (e.g. professional FP association or college) Yes/No - Otherwise (e.g. by medical specialists; Ministry of Health) Yes/No	Source: National expert / NPM

DOMAIN 1. PC Structure (46 indicators)			
DIMENSION 1.3 Workforce Development (22 indicators)		Coding / answering categories	Source(s)
1.3.6	Which of the following health professionals are *directly accessible, without a referral* in PC?	- Family physician Y/N - Midwife Y/N - PC nurse Y/N - District (community) nurse Y/N - Social worker Y/N - Psychologist Y/N - Mental health nurse Y/N - Physiotherapist Y/N - Dietician / nutritionist Y/N - Occupational therapist Y/N - Speech therapist Y/N	Source: National expert / NPM
1.3.7	Have tasks/duties of FPs been formally defined, by the government or professional bodies?	- Yes - No	Source: National expert / NPM
1.3.8	Do mechanisms exist to encourage FPs to work in underserved, remote and/or rural areas?	- Yes - No If yes, what kind of mechanisms: - Compulsory service requirements in rural and remote areas Yes/No - Scholarships, bursaries or other education subsidies Yes/No - Financial incentives (e.g. hardship allowances, grants for housing, transportation) Yes/No - Other, namely :……. Yes/No	Source 1: HiT (sections 4.2.2 Trends in health workforce; 5.3 Primary care) Source 2: National expert / NPM
1.3.9	Which of the following policies exist to address identified shortages of FPs? (more answers possible)	- Not applicable (no shortages) o Yes / No - No particular policy o Yes / No - Increase training capacity o Yes / No - Prolong working time for physicians o Yes / No - Targeted immigration policies o Yes / No - Incentives to foster the take-up of general practice o Yes / No	Source 1: HSC Survey (Q.44) Source 2: National expert / NPM

DOMAIN 1. PC Structure (46 indicators)			
DIMENSION 1.3 Workforce Development (22 indicators)		Coding / answering categories	Source(s)

1.3.9		- Introduction or expansion of non-physician practitioner roles
		  ○ Yes / No
		- Financial incentives to correct geographic maldistribution
		  ○ Yes / No
		- Other, namely……
		  ○ Yes / No	

1.3.10	Are data available on FP workforce capacity needs and development in the future?	- Yes - No - If yes: source / weblink	Source: National expert / NPM
1.3.11	How does the gross annual income of a mid-career FP relate to the gross annual income of the following mid-career medical specialists of the same age?	Compared to FPs: - Cardiologist income is: much lower / lower / equal / higher / much higher - Obstetrician / gynaecologist income is: much lower / lower / equal / higher / much higher - General internist income is: much lower / lower / equal / higher / much higher	Source 1: OECD StatHealth (data for 13 countries) Source 2: National expert / NPM
1.3.12	What is the age balance between the number of younger and older practicing FPs (under 35 and over 55)?	- Under 35 …… % - Over 55 ……. %	Source 1: Eurostat Source 2: National expert / NPM
1.3.13	Which % of medical universities (or universities with a medical faculty) offer a postgraduate programme in General practice/Family Medicine?	- ……. % - Not applicable; postgraduate programme is not organised by (medical) universities, namely …….)	Source: National expert / NPM

DOMAIN 1. PC Structure (46 indicators)			
DIMENSION 1.3 Workforce Development (22 indicators)		Coding / answering categories	Source(s)
1.3.14	How much time do family medicine trainees spend practicing in a PC/FP practice during postgraduate specialisation?	- ……. months	Source 1: EURACT CME/CPD database (39 European countries) https://www.euract.eu/country-database-entries/index/93c7b61e-25f3-4dde-89b6-2ce13168484a Source 2: National expert / NPM
1.3.15	What % of all medical graduates have graduated as a FP?	- ……. % of all medical graduates (latest available year)	Source 1: EURACT Specialist training database (39 European countries) https://www.euract.eu/country-database-entries/index/93c7b61e-25f3-4dde-89b6-2ce13168484a Source 2: National expert / NPM
1.3.16	Is there professional training specifically for the following two types of PC nurses?	- District/community nurses: Y/N - PC/FP practice nurses: Y/N	Source: National expert / NPM
1.3.17	Do nurses work in advanced roles (e.g. as nurse practitioner, nurse specialist or diabetes nurse) in PC in the treatment of people living with chronic conditions? *(NB: advanced tasks are beyond the traditional scope of practice, including i.a. diagnosis, treatment, prescribing, first point of contact, responsibility for a group of patients).*	- Yes, nurses are working in advanced roles in PC - Yes, on a limited scale (e.g. in some regions/practices, in pilots or incidental projects) - No nurses are working in advanced roles	Source 1: OECD/HSC Survey (Q.47)

DOMAIN 1. PC Structure (46 indicators)			
DIMENSION 1.3 Workforce Development (22 indicators)		Coding / answering categories	Source(s)
1.3.18	Is a journal on family medicine/general practice being published in this country?	- Yes - No If yes: weblink	Source 1: SJR ranking (see document in file Data) Source 2: NLM search of FM/PC journals (see document in file Data) Source 3: Google search ('journal of family medicine and primary care in [country]') Source 4: National expert / NPM
1.3.19	Is a professional journal on PC nursing being published in this country?	- Yes - No If yes: weblink	National expert / NPM
1.3.20	Which % of active FPs is currently working part-time (≤ 4 days per week, excl. out of hours duties)?	- …… % - Not known	National expert / NPM
1.3.21	Does the postgraduate curriculum in family medicine / general practice offer the possibility for part-time residents?	- Yes - No	National expert / NPM
1.3.22	What is the duration of the postgraduate training in family medicine / general practice?	- ….. years	Source 1: internet search Source 2: National expert / NPM
DIMENSION 1.4 Information Structures (4 indicators)		Coding / answering categories	Source(s)
1.4. 1	Are clinical patient records from FP/PC used at regional or local level to identify health needs or priorities for health policy?	- Routinely (e.g. in health statistics) - Incidentally - Seldom or never	Source: National expert / NPM

DOMAIN 1. PC Structure (46 indicators)			
DIMENSION 1.4 Information Structures (4 indicators)		Coding / answering categories	Source(s)
1.4.2	Share of FPs who indicated the following state of telehealth use in their practice:	- 0 = not aware - 1 = do not have it - 2 = have it and do not use it - 3 = use it occasionally - 4 = use it routinely Scale score …..	Source 1: EC (2018), Benchmarking Deployment of eHealth among General Practitioners - 2018, European Union. Source 2: Outside EU: National expert /NPM Switzerland: Data from the CWF IHP survey, published in Obsan report «Ärztinnen und Ärzte in der Grundversorgung – Situation in der Schweiz und im internationalen Vergleich». (response options differ).
1.4.3	Are primary care data used regularly to report on health care quality or health system performance?	- Yes - No	Source 1: OECD Survey of Health Data Use and Governance, 2020. Source 2: (Non-OECD members) National expert / NPM)
1.4.4	Is there a national website for medical patient information, set up/approved by the MoH or a FP professional association?	- Y/N Weblink:	Source 1: internet (for 11 countries: Source 2: National expert / NPM

DOMAIN 2. Systemic Aspects of Facility Management (7 indicators)			
DIMENSION 2.1 Scale of PC Delivery (1 indicator)		Coding / answering categories	Source(s)
2.1.1	Which percentage of FPs are working in the following practice settings? *(NB: other PC disciplines: e.g. physiotherapist; social worker; speech therapist)*	- 1 FP (with or without a nurse): …… % - 2 or more FPs (with or without a nurse): …… % - 1 or 2 FPs (with or without a nurse) plus other PC discipline(s): …… % - 3 or more FPs (with or without a nurse) plus PC discipline(s) …… % - FPs in other settings, namely ……. …. %	Source: National expert / NPM
DIMENSION 2.2 Systems/ structures for Quality Assurance and Safety (4 indicators)		Coding / answering categories	Source(s)
2.2.1	Do the following mechanisms exist for FPs and PC facilities to operate? - Licensure (or: registration) = legal mandatory permission for individual FPs to practice - Re-licensure = mandatory periodical update of the individual FP license - Certification of additional qualifications = voluntary independent assessment of individual providers on competences	- Licensure (registration) ○ Yes ○ No - Re-licensure ○ Yes ○ No - Voluntary individual certification of qualifications ○ Yes ○ No - Voluntary practice certification ○ Yes ○ No	Source 1: EURACT CME/CPD database (re: re-licensure) (39 European countries) https://www.euract.eu/country-database-entries/index/93c7b61e-25f3-4dde-89b6-2ce13168484a Source 2: National expert / NPM

DOMAIN 2. Systemic Aspects of Facility Management (7 indicators)			
DIMENSION 2.2 Systems/ structures for Quality Assurance and Safety (4 indicators)		Coding / answering categories	Source(s)
2.2.1 ctd	- Practice certification = voluntary assessment of PC facilities or practices on organisational aspects (e.g. safety)		
2.2.2	Is the basis for re-licensure as a FP the number of CME points obtained?	- Yes - No	Source 1: EURACT CME/CPD database (account needed) (39 European countries) https://www.euract.eu/country-database-entries/index/93c7b61e-25f3-4dde-89b6-2ce13168484a Source 2: National expert / NPM
2.2.3	Are community health surveys conducted to improve the quality and responsiveness of PC?	- No - Yes, at the following scale: o Nationwide Yes/No o At local / regional level Yes/No	Source: National expert / NPM
2.2.4	Are patient experiences measured at facility level?	- No (or very rarely) - Yes, incidentally - Yes, widespread	Source: National expert / NPM
DIMENSION 2.3 Practice Management Incentives (1 indicator)		Coding / answering categories	Source(s)
2.3.1	Is an allocated budget available for PC/FP practices to pay a (part-time) practice manager?	- Yes - No	Source: National expert / NPM

DOMAIN 2. Systemic Aspects of Facility Management (7 indicators)			
DIMENSION 2.4 Community Involvement (1 indicator)		Coding / answering categories	Source(s)
2.4.1	To what extent do citizens/ patient representatives have any formal role in the areas specified?	Training/education for patients - Strong - Incidental / developing - Weak/ No Membership in PC advisory boards at community level (e.g. council boards) - Strong - Incidental / developing - Weak/ No Membership in supervisory boards of PC facilities - Strong - Incidental / developing - Weak/ No	National expert / NPM

DOMAIN 3. Systemic Aspects of Care Delivery (17 indicators)			
DIMENSION 3.1 Accessibility (6 indicators)		Coding / answering categories	Source(s)
3.1.1	The total number of (directly accessible) active FPs available per 100,000 population	- FPs: …. per 100.000	Source 1: (partly/t.b.s) WHO/HlthRes-DB. European database on human and technical resources for health - European Health Information Gateway (who.int) Source 2: National expert / NPM
3.1.2	Difference between region, province or state with highest and with lowest density of FPs (per 100,000 population)	FPs …. per 100.000 in highest region FPs …. per 100.000 in lowest region	Source 1: Eurostat NUTS 2 or 3 (depending on availability) Source 2: National expert / NPM
3.1.3	Difference between average urban density of FPs (per 100,000 population) and average rural density of FPs	Urban average FPs per 100.000 …….. Rural average FPs per 100.000 …..	Source: National expert / NPM
3.1.4	Do (regional or national) shortages exist of FPs according to usual national norms?	Nationwide Yes / No In certain regions Yes / No	Source: National expert / NPM

DOMAIN 3. Systemic Aspects of Care Delivery (17 indicators)			
DIMENSION 3.1 Accessibility (6 indicators)		Coding / answering categories	Source(s)
3.1.5	Are FP practices or PC centres obliged to have a minimum number of opening hours or days?	Yes / No	Source: National expert / NPM
3.1.6	How is out-of-hours PC organised? Indicate for each of the specified models to what extent it is used?	Models of out-of-hours PC: Solo FP is available for his/her own practice only - (Almost) always used - Usually used - Occasionally used - Seldom or never used Group of FPs on a rota basis is available for the practices of the group - (Almost) always used - Usually used - Occasionally used - Seldom or never used Larger group of FPs are working in special OOH facility with support staff - (Almost) always used - Usually used - Occasionally used - Seldom or never used FPs are working at Emergency department of hospital - (Almost) always used - Usually used - Occasionally used - Seldom or never used No FP-based OOH services exist; patients attend hospital - (Almost) always used - Usually used - Occasionally used - Seldom or never used Commercial deputizing services are hired during OOH - (Almost) always used - Usually used - Occasionally used - Seldom or never used Other: …… (please specify)	Source 1: Steeman et al, 2020 Source 2: National expert / NPM

DOMAIN 3. Systemic Aspects of Care Delivery (17 indicators)			
DIMENSION 3.2 Comprehensiveness (6 indicators)		Coding / answering categories	Source(s)
3.2.1	In which organisational way are the specified screening programmes delivered?	Cervical cancer screening - Integrated into PC: Y/N - In PC but organized as a vertical programme: Y/N - As a vertical programme (not PC) Y/N Breast cancer screening - Integrated into PC: Y/N - In PC but organized as a vertical programme: Y/N - As a vertical programme (not PC) Y/N Colon cancer screening - Integrated into PC: Y/N - In PC but organized as a vertical programme: Y/N - As a vertical programme (not PC) Y/N	Source: National expert / NPM
3.2.2	Are the specified vaccination services being carried out in PC as part of a national vaccination programme?	- HPV vaccination for girls: Y/N - HPV vaccination for boys: Y/N - Influenza vaccination for at risk population: Y/N - DTP (Diphtheria, Tetanus and Pertussis) vaccination: Y/N - Measles vaccination: Y/N - Hepatitis B vaccination: Y/N - Mumps vaccination: Y/N - Rubella vaccination: Y/N	Source: National expert / NPM

DOMAIN 2. Systemic Aspects of Facility Management (7 indicators)			
DIMENSION 3.2 Comprehensiveness (6 indicators)		Coding / answering categories	Source(s)
3.2.3	To what extent will patients with the specified health problems visit a FP for first contact care?	Child with severe cough - (Almost) always - Usually - Occasionally - Seldom or never Child aged 8 with hearing problem - (almost) always - Usually - Occasionally - Seldom or never Woman aged 18 asking for oral contraception - (almost) always - Usually - Occasionally - Seldom or never Woman aged 35 with irregular menstruation - (almost) always - Usually - Occasionally - Seldom or never Woman aged 35 with psychosocial problems - (almost) always - Usually - Occasionally - Seldom or never Woman (aged 50) with a lump in her breast - (almost) always - Usually - Occasionally - Seldom or never Man (aged 28) with a first convulsion - (almost) always - Usually - Occasionally - Seldom or never Man (aged 52) with alcohol addiction problems - (almost) always - Usually - Occasionally - Seldom or never	Source: National expert / NPM

DOMAIN 2. Systemic Aspects of Facility Management (7 indicators)			
DIMENSION 3.2 Comprehensiveness (6 indicators)		Coding / answering categories	Source(s)
3.2.4	How is the coverage of medicines prescribed at PC level defined?	Yes - there is a positive list of medicines (those covered) - there is a negative list (those not covered) No (such restrictions do not exist)	Source 1: OECD HSC Survey (q.59 'medicines') Source 2: National expert / NPM
3.2.5	To what extent do FPs / PC practices provide the following health services to their patients who need so?	Family planning /contraceptive care - (almost) always - Usually - Occasionally - Seldom or never Routine antenatal care (in the context of a national scheme) - (almost) always - Usually - Occasionally - Seldom or never Routine pediatric surveillance to children (up to 4 years) - (almost) always - Usually - Occasionally - Seldom or never Palliative care - (almost) always - Usually - Occasionally - Seldom or never	Source: National expert / NPM
3.2.6	To what extent is social prescribing in PC practices recognised? *(Social prescribing means that FPs can refer patients to non-clinical social programmes in the community. The focus can be on i.a. income, health food, sports, housing, social activation, informal care support)*	- Social prescribing is formally recognized and increasingly practiced - Social prescribing is being discussed but not (or hardly) practiced - Social prescribing is currently (practically) unknown	Source 1: Literature; answers for 12 countries Source 2: National expert / NPM (for other countries)

DOMAIN 2. Systemic Aspects of Facility Management (7 indicators)			
DIMENSION 3.3 Continuity (3 indicators)		Coding / answering categories	Source(s)
3.3.1	To what extent are patients generally free to choose a FP or PC practice? (*choose most applicable option)*	- The patient is assigned to a specific provider (e.g. a health centre serving a geographical area) Y/N - The patient's choice is limited (e.g. to a small geographical area or a specific network of providers) Y/N - Patients are not obliged to register with a PC practice/FP but there are (financial) incentives (e.g. reduced co-payments) to do so Y/N - No such incentive, encouragement or obligation to register Y/N	Source 1: OECD/HSC Survey (q.39a) Source 2: National expert / NPM
3.3.2	Can patients choose his/her individual care provider (FP) within the PC practice chosen or assigned to?	- Yes, patients can freely choose FP Y/N - No, patients cannot choose FP Y/N - Not relevant (PC services are predominantly provided in solo practices) Y/N	Source 1: HiT (Ch5) Source 2: National expert / NPM
3.3.3	Are people registered with a FP/ or PC practice?	Yes - almost) the whole population (>95%) Y/N - the majority (>50%) Y/N - less than 50% Y/N No	Source 1: OECD/HSC Survey (q.37) Source 2: HiT (Ch5) Source 3: National expert / NPM
DIMENSION 3.4 Coordination (2 indicators)		Coding / answering categories	Source(s)
3.4.1	To what extent do FPs control access to (medical) specialist care?	- FP referral is compulsory to access most types of (medical) specialist care (except in case of emergency) Y/N - FP referral is compulsory to access restricted types of (medical) specialist care (except in case of emergency) Y/N - Patients have financial incentives to obtain a FP's referral (e.g. reduced co-payments), but direct access is always possible Y/N - There is no need and no incentive to obtain FP referral Y/N	Source 1: OECD/HSC Survey (q.38) Source 2: HiT Source 3: National expert / NPM

DOMAIN 2. Systemic Aspects of Facility Management (7 indicators)			
DIMENSION 3.4 Coordination (2 indicators)		Coding / answering categories	Source(s)
3.4.2	To what extent do FPs control access to specialised mental health care?	- FP referral is compulsory to access specialised mental health services Y/N - Referral is not compulsory but patients have financial incentives to obtain a FP referral (e.g. reduced co-payments) Y/N - There is no need and no incentive to obtain a FP referral Y/N	Source 1: HiT (section 5.10 or 5.11). Results extracted for 18 countries Source 2: National expert / NPM

8 Conclusions, discussion and the way forward

8.1 SiSPC framework

We have developed the new indicator system SiSPC in a number of steps, described in this report, and on the basis of existing frameworks, in order to provide both continuity with the past and to enable comparisons over time.

8.2 Use and advantages

The system of indicators provided by SiSPC is an important tool for researchers to measure the strength of primary care. As latest developments were taken into account, it measures 'strength' in line with current expectations of primary care. SiSPC data can be used to satisfy various needs for information, such as:

- Describing, at country level, the state of affairs of primary care (particularly in high- and middle-income countries) and to monitor its development in the future (with repeated measurement).
- Analysing whether and how the strength of primary care is associated with the country context.
- Analysing whether and how the strength of primary care is associated with outcomes of primary care, as measured at provider level and at patient level.
- Showing changes in the strength of primary care between 2005 and 2025 (by comparing SiSPC data with those from PHAMEU).

The aim of SiSPC as a whole (at the level of domains or dimensions) is to indicate the strength of primary care, although single indicators can be used in particular analyses or to test certain hypotheses. Furthermore, single indicators are not meant to flag potential quality problems in primary care in countries. Taken together, the indicators feed the latent concept of the strength of primary care.

In contrast to other tools, in which indicators relating to the system level, the provider level and the patient level are mixed, SiSPC has an exclusive focus on the systemic features of primary care systems. We think this approach contributes to clarity of information relevant to different levels of health care and promotes a clear analytical separation of issues that are at play at these different levels. Such a separation is vital for policy makers, as policy levers employed to improve the primary care system often operate level-specific. A clear empirical analysis of the different areas where improvements can be made, is possible by combining SiSPC data with, for instance, data from surveys among providers and patients in a multi-level design.

Our focus on the feasibility of data collection will facilitate the practical use of SiSPC in research. Many SiSPC data can be collected centrally from international sources (e.g. from databases of the OECD, World Health Organization, European Union, WorldBank and from international publications, such as from the European Observatory on Health Systems and Policies). This will reduce the burden of data collection at country level considerably. Furthermore, experts in the countries have been asked to provide their feedback on the draft final system of indicators, in particular on the clarity of the indicator questions and the feasibility of data collection. A major issue may exist in collecting data in federal countries with different health subsystems. In some cases, features may apply and be available in one unit of a federation but not in the other.

In developing SiSPC we seized the opportunity to realize it in the context of the OECD PaRIS surveys. The work was born out of the PaRIS project and will be used in analyses of the results, but it was not part of it nor funded by the OECD. The OECD aims to develop PaRIS into a regular data collection in an increasing number of countries. Updates and data collection for SISPC could follow the future rounds of the PaRIS surveys. Even though the indicator system is ready-for-use, a large-scale data collection and analysing the data (e.g.) every five years may be a challenge. However, it will also be necessary to do a regular review of SiSPC as a whole to incorporate future developments in primary care. In addition, although linked to the PaRIS surveys, the outcomes of strong primary care are not restricted to patient-reported experiences and outcomes. Outcomes may be based on other surveys, e.g. about unmet needs or untreated conditions, or on aggregated data, e.g. on the prevalence of primary care sensitive conditions.
SiSPC was developed in the context of PaRIS with its focus on care for people with chronic conditions. The rising prevalence of chronic conditions is a major challenge in many health care systems. People living with chronic conditions are likely intensive users of (primary) care, and major features of primary care, like coordination and continuity, have considerable influence on their experiences and outcomes. Also, people living with chronic conditions tend to suffer heavily in situations, such as a pandemic. However, in developing SiSPC we have opted for a balance between the chronic care approach and other PC functions in the area of prevention and acute care. In this way the relevance of SiSPC to be used in other studies is safeguarded.

We developed SiSPC on the basis of existing frameworks, the most important of which being PHAMEU and PC-IMPACT. We made a combined use of them. PHAMEU has a solid foundation but is outdated regarding the measurement of its indicators and is perhaps missing new developments in primary care. PC-IMPACT is more up-to-date and comprehensive, but to be used more for self-assessment by individual countries than for international comparison. SiSPC aims at a comparative perspective with information on many countries, and thus may contribute to strengthening primary care in countries by providing opportunity for comparisons with the situation in other countries.

8.3 Limitations

A limitation of SiSPC is that it has not been feasible, due to restricted time and funds, to perform a new literature review to assess the evidence-base for newly developed indicators. As a second-best option we relied on previous work by the authors of the main frameworks that we used in the development of SiSPC. Besides, for the validation of the SiSPC indicator system, we relied on expert reviews, both within the PaRIS consortium and external reviewers. The intended analysis of SiSPC data in relation to patient experiences and outcomes, as measured in the PaRIS project, will reflect a substantive relationship; we don't see it as a validation exercise. (Obviously, not finding a relation where one is hypothesised, may mean two things: either there is no relationship in reality or it may be due to problems of measurement and validity).

Another limitation is that we largely focused on Western (OECD) countries and some in Latin America, which are mostly high-income countries. This was done first of all for reasons of comparability. Despite the heterogeneity that generally characterizes health care systems, those in these countries are relatively well comparable as these share a basic institutional set-up. Another reason was that SiSPC has been developed in the context of the OECD PaRIS project and that its first implementation, in terms of data collection and analytical use of the data, will be in the OECD member countries participating in that project. Nevertheless, it will be important to assess the usability and validity of the SiSPC in lower- and middle-income countries.

The indicators that constitute SiSPC mainly refer to family physicians. Ideally, all other professions active in primary care teams should also be considered. However, we have concluded that this is unfeasible for several reasons. First, primary care doctors are still the backbone of primary care; secondly, equal attention to all other primary care disciplines would multiply the number of indicators, while availability of information on other professions is small. However, we have devoted quite some attention to practice nurses, whose profession is increasingly important for strong primary care, in particular in the care for people with a chronic disease. We have also given attention to relationships of FP practices with other primary care providers and social care.

The SiSPC indicator system does not contain items on changes over time. The first measurement of SiSPC is likely to represent the situation in the early 2020's. Comparisons with PHAMEU data will provide two cross-sections; however, if we will find any changes these cannot be assigned to specific policies or circumstances. In the Czech Republic, for example, the COVID-19 pandemic has shown different performances of solo practices (which are the majority) and team practices, with the latter being able to much better cope with the situation. The pandemic has started a trend of more team-based practice, supported by health insurers. Comparisons between PHAMEU en SiSPC data will show, in this case, the shift towards team practice but not shed light on the processes that caused the change. The same applies, for instance, to increased use of online (video) consultations and the use of email in patient contacts.

8.4 Way forward

Our next step will be the measurement of the indicators. As much as possible, this will be done on the basis of published sources, containing international comparable data. Where these are lacking for all or some countries, we will appeal to national experts.
The first step after data collection will be a statistical analysis to construct the latent variables. The same procedures will be followed as we did in analysing PHAMEU data. The resulting variables will be used in further analysis of the PaRIS data. This will provide the basis for the use in future rounds of PaRIS (if OECD member states decide so), but in other studies as well.
The actual data collection with the SiSPC system of indicators and the presentation of results are the subject of a separate report.

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