



## Models of Child Health Appraised

(A Study of Primary Healthcare in 30 European countries)

Work Package 9: Validated Optimal

Models of Children's Prevention

Orientated Primary Health Care:

**An E-Book showcasing conditions for  
implementation of examples of good  
practices in primary child health care  
in European Countries**



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# **An E-Book showcasing conditions for implementation of examples of good practices in primary child health care in European Countries**

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# Models of Child Health Appraised

(A Study of Primary Healthcare in 30 European countries)

## **An E-Book showcasing conditions for implementation of examples of good practices in primary child health care in European Countries**

*A comparative case study between six countries in Europe*

### SUMMARY

This e-book is part of the Models of Child Health Appraised (MOCHA) project. The aim of this e-book was to (a) to gain insight into the availability and use of good practices of measles immunization, information provision on contraceptive advice for adolescents, assessment of mental health problems, and asthma care in six European countries and (b) to achieve a better understanding of the facilitators and barriers of implementation of suggested good practices within the context of various models of primary child care in Europe. A diverse case method was used to get insight into these research aims. In total six European countries were included in the study: Germany, Cyprus, Sweden, The Netherlands, Italy, and Poland. Countries were selected in such a way that they were more or less exemplary of the broad features of the types of primary care models in the EU. They varied in terms of lead practitioner (general practitioner, primary care paediatrician, mixed) and professional autonomy in the provision of health services (more or less dominant). In total 55 experts from these countries filled out a questionnaire. The results provide insight into 1. the availability and use of guidelines and formal procedures and training of primary care professionals; 2. barriers and facilitators of implementation of the good practices studied and 3. similarities and differences between good practices and models of child primary care.

The number of the health themes for which guidelines were available in the individual countries fluctuated between health themes within and between countries, as well as the extent to which they

were used. It appeared, for example, that all countries have guidelines or formal procedures available for asthma, but that in spite of their availability, use of these guidelines or formal procedures was limited. On the contrary, guidelines or formal procedures for immunisation were generally used for nearly all children. Also in terms of the implementation of the guidelines, the experts indicated that the action of motivating vaccine hesitant parents using face to face communication was the best implemented. Performing spirometry in children who have a significant likelihood of asthma was, according to the experts, the least implemented. The results with regard to sexual reproductive health and mental health varied per country.

Additionally, a number of barriers and facilitators of the implementation process of good practices at the level of the good practice itself, the primary care professional, the organisation, and in terms of the socio-political context were examined. The results showed that the experts from most countries identified mostly facilitators with regard to communicating with vaccine hesitant parents. Barriers were notably found with regard to the conduct of spirometry in diagnosing asthma

Finally, the findings of this study suggest that models of primary care to a certain extent are relevant for the implementation of good practices. One result found was in terms of the availability of guidelines: countries with a GP or mixed-led, hierarchical professional systems seemed to have guidelines available with regard to more health themes than countries who have paediatrician or mixed-led, non-hierarchical professional systems. The same result was found for training of primary care professionals.

Further research of the MOCHA project should provide an improved understanding of the way models of child primary care influence implementation conditions of good practices and the transferability of these models in the EU context.

## 1. INTRODUCTION

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This e-book showcases potential best practices that are used in primary child health care as identified by the MOCHA project, and how experts in the field of care for children from 6 European Union (EU) countries assess the conditions under which implementation of good practices of measles immunization, information provision on contraceptive advice for adolescents, assessment of mental health problems, and asthma care take place.

This e-book is part of the Models of Child Health Appraised (MOCHA) project. Across Europe different models of primary child health care exist, but there is little evidence available on the effectiveness of these models. Therefore, the MOCHA project aims to perform a systematic, scientific evaluation of the types of different models of primary child health care in all 30 EU/EEA countries (<http://www.childhealthservicemodels.eu/>) and seeks to compare and appraise existing national

models of primary care for children. One dimension of effective primary child health care delivery is the quality management infrastructure, which includes features such as availability of relevant clinical guidelines, certification of providers, and professional competence (Kringos, Boerma, Hutchinson, Van der Zee & Groenewegen, 2010). There is empirical evidence that use of guidelines positively affects outcomes in patients, provided that they are carefully implemented (Durlak & DuPre, 2008; Fleuren, van Dommelen, & Dunnink, 2015). Accordingly, this e-book investigates and compares implementation conditions for what appear to be exemplary good practices for EU child primary care models in a sample of six countries. These six countries represent various models of primary child care in Europe.

This e-book builds on the work already carried out by the international scholars involved in the work packages (WP) of the MOCHA project. By clicking on links in this e-book you will be taken to the source materials, such as reports and project descriptions, within the MOCHA website.

- WP1 categorized in several work packages the primary care models in the EU countries, including school health and adolescent services ([Work Package 1: Final Report on Current Models of Primary Care for Children](#)).
- WP 2 and 7 assessed effects of the current models on equity and on continuity of care in the interface between primary and secondary care ([Work Package 7: Report on differences in outcomes and performance by SES, family type and migrants of different primary care models for children](#)) ( [Work Package 2: Report on Needs and Future Visions for Care of Children with Complex Conditions](#)).
- WP 4, 5 and 6 developed measures of quality, outcome, cost, and workforce, and applied them using policy documents, routine statistics, and available electronic data sets. ([Work Package 4: Innovative measures of outcome and quality of care in child primary care models](#)) ([Work Package 5: Semantic models of key clinical conditions and outcome measures](#)).
- WP 8 established patterns of use of electronic records and big data in child primary care ([Work Package 8: Description and Analysis of current child health electronic record keeping across Europe](#)).

This e-book will report on similar cases and tracer conditions to those used in the previous MOCHA research, to provide a continuous and comparative study .

The e-book forms part of WP 9 “[Validated Optimal Models of Children’s Prevention-Orientated Primary Health Care](#)” and is the first report of this WP. In the final stage of the MOCHA project Work



Package 9 will develop optimal primary child health care models emerging from the analyses of the other work packages. The investigation of the implementation conditions of good practices in this e-book informs the development of optimal models. The MOCHA project makes use of a network of country agents from every EU/European Economic Area (EEA) country. These local informants can provide unique national perspectives to the structure and use of the models of primary care. Enlarging the project data, WP9 seeks to bring together multi-disciplinary approaches and multi-stakeholder views to develop new approaches to primary care or improve existing approaches to prevention and treatment in children. In this e-book we will present the views of an external group of stakeholders in the field of child primary care.

### 1.1. Case selection

To gain insight into the implementation conditions of best practices in six EU countries, we selected four health themes that relate to the different functions of primary child health care – the functions being prevention, surveillance and diagnosis. National and international guidelines, procedures and literature were reviewed, based upon the four good practices that were selected. Table 1 gives an overview of the selected health themes and good practices identified that relate to them. The inclusion criteria for selecting the health themes and good practices were:

- a) (inter)national agreement was reached on dealing with the specific health theme in generally accepted guidelines and/or formal procedures;
- b) recent experience with implementation of the good practices; and
- c) the choice was in line with the choices for health cases and good practices in other MOCHA work packages.

**Table 1: Health themes of good practices in primary care**

**Selected cases**

*Aspects of primary child health care*

<i>Evidence-based practice</i>	Prevention	Prevention	Surveillance	Diagnosis
Guidelines and/or formal procedures	Measles immunization and under-vaccinated children	Access to contraceptive information and services for adolescents aged 10 to 18 years	Assessment of mental health problems among adolescents aged 10 to 18 years	Diagnosis of asthma in children aged over 6 years
MOCHA Identified good practice	Primary care practitioners-parent communication to motivate parents to have their child vaccinated (Rainey et al., 2011)	Conducting a psychosocial assessment in sexually active adolescents (Department of Health, 2004)	Conducting a risk assessment for mental health problems in adolescents (Department of Health Western Australia, 2013)	Performance of spirometry (Global Initiative for Asthma, 2016)
Case description	<i>Celine is an 18 months old girl. She is not vaccinated against measles.</i>	<i>Anna is a 15 year old girl. She just started dating with a 16 year old boy. At this moment they are at the point of just kissing each other. Anna expects that they will be having sexual intercourse very soon. She does not want to get pregnant, and wants to be prepared to have sex with her boyfriend. She wants to start using hormonal contraception.</i>	<i>One Wednesday afternoon, 16 year old Yann and his mother consult a primary care practitioner. Yann tells the practitioner he has been suffering from depressive feelings and admits that he has suicidal thoughts.</i>	<i>Jakob is a 10 year old boy. Most of the time he is well, but occasionally he suffers from chest tightness. The sound is more prominent when Jakob breathes out than when Jakob breathes in. Furthermore, the mother of Jakob has asthma.</i>

Other work packages of MOCHA comprised the following similar health themes and good practices on immunisation, contraception and mental health, and spirometry:

- A systematic review and meta-analysis was conducted on immunisation coverage, age of diagnosis of different types of mental health problems and prevalence of asthma ([WP1: Identification of models of children's primary care: Systematic Review and Meta-analysis](#)[WP 1: Identification of models of children's primary care: Systematic Review and Meta-analysis of the Literature – Part 2](#)).
- Research was carried out with regard to modelling the pathways of asthma care, including spirometry ([WP 1: Final Report on Current Models of Primary Care for Children](#)).
- The equity of provision of immunisation and mental health services for disadvantaged groups has been studied ([WP 7: Report on differences in outcomes and performance by SES, family type and migrants of different primary care models for children](#)).
- An assessment was made of the barriers and facilitators for care of children with mental illnesses who need support from multiple agencies, or long term support. This WP used Autism and ADHD as tracer conditions at the interface of primary care and secondary or other forms of care ([WP 2: Report on requirements and models for supporting children with complex mental health needs and the primary care interface](#)).
- Data were gathered on experiences of the EU/EEA countries with regard to confidentiality issues in advising on sexual health by adolescent health services, using surveys among MOCHA's country agents. These data will be included in future MOCHA-reports.

## 1.2. Aims of this study

Specifically, the purpose of this study was (a) to gain insight into the availability and use of good practices based upon the clinical guidelines with regard to different aspects of children's primary care in six European countries and (b) to achieve a better understanding of the facilitators and barriers of implementation of suggested good practices. In particular, the following research questions were formulated:

1. To what extent is a guideline or formal procedure formulated for each health theme, is the guideline or formal procedure being used by primary care practitioners and is usage or adherence to the guideline or formal procedure being monitored or evaluated in the participating countries?
2. What are the perceived facilitators and barriers of implementation of the good practices (e.g., characteristics of the good practice, the primary care practitioner, the organizational and the socio-political context) in the participating countries?

3. What are the similarities and differences between different good practices, countries and their models of children's primary care?

## 2. METHODS

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The methodological approach used in this study was that of a cross case research design (Gerring, 2011). A diverse case study approach is especially useful when the research is largely exploratory and contextual conditions are pertinent to the phenomenon of the inquiry. A case is defined as “a contemporary phenomenon within its real life context, especially when the boundaries between a phenomenon and context are not clear and the researcher has little control over the phenomenon and context” (Yin, 2002, p.13). A case study approach investigates the cases by addressing “why” and “how” questions. This approach to the design and analysis has revealed what implementation conditions are of four good practices in six European countries, by asking experts from these countries to fill out a questionnaire to get insight into their perspectives.

### 2.1. Theoretical framework

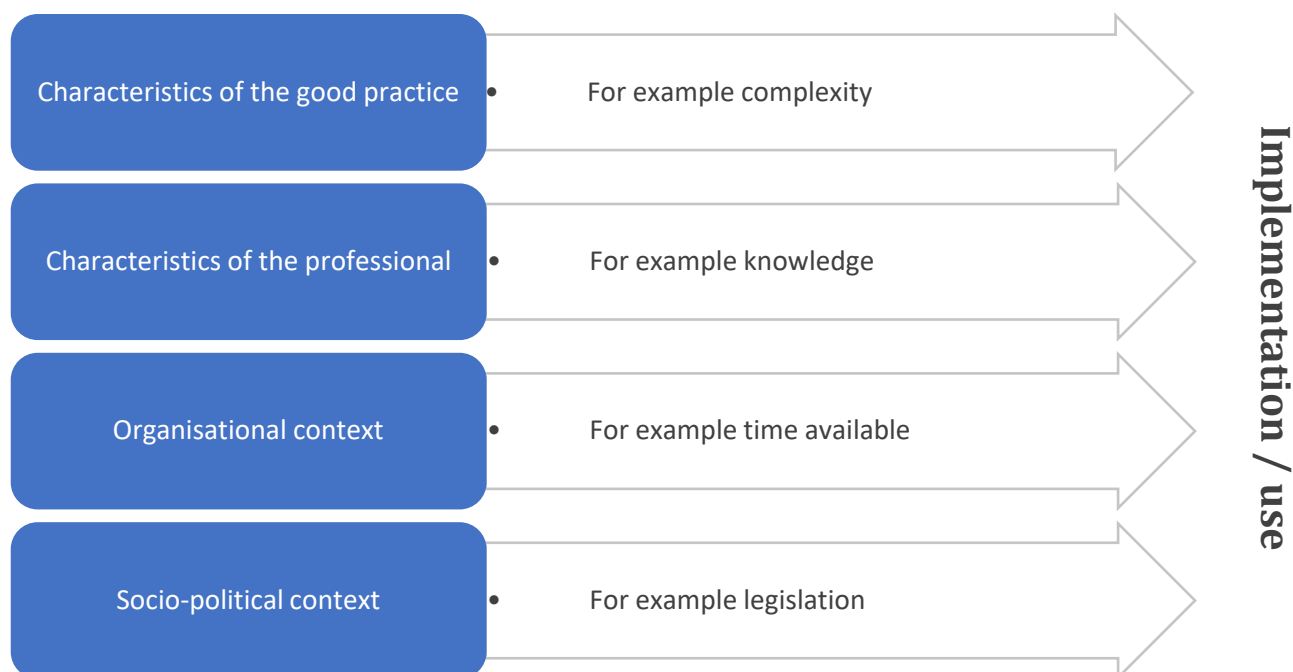
A generic framework on the innovation process and related categories of determinants (see Figure 1 and Appendix 1; Fleuren et al., 2004; 2006) was used as an organising structure for guiding this research and data gathering on the implementation conditions of good practices. Based on this framework, Fleuren et al. (2014) developed the Measurement Instrument for Determinants of Innovations (MIDI), which we used in our study. According to the framework, the implementation of good practice can be influenced positively or negatively by:

1. characteristics of the good practice;
2. the intermediate users (i.e., primary care professionals) of the good practice;
3. the organizational context in which the good practice is introduced, and
4. the socio-political context.

Use of this theoretical framework and the related MIDI measurement instrument adds to MOCHA's evidence base which allows the development of optimal models of child primary care, taking into account conditions for the implementation and transfer.

**Figure 1: Framework representing the innovation process and related categories of determinants**

Fleuren et al., 2004; 2006; 2014



## 2.2. Elements of primary child health care models taken into account

The study is meant to produce comparable information of the implementation conditions of good practices with regard to primary child health care across different models of primary care in European countries. The broad context of primary care affects its effectiveness (Blair, Rigby, & Alexander, 2017), and so consideration of context is an important factor in the implementation of good practices. Following the initial results of the MOCHA project, the lead practitioner in the provision of care to the child (Blair et al., 2017), and the professional's autonomy with regard to the provision of health services in European countries (Bourgueil, Marek, & Mousqués, 2009) were taken into account. We

### Lead practitioner, professional autonomy and health outcomes

- *Lead practitioner*: the person who has clinical responsibility for the child patient (Blair et al., 2017)
- *Professional autonomy*: an autonomous position of professionals in the health care system is more or less dominant (Bourgueil et al., 2009)
- *Health outcomes*: occurrence of a specific health problem among children and adolescents across Europe (Kringos et al., 2010)

also took into account positive or negative health outcomes of the health care systems and the chosen good practices (Kringos et al., 2010).

### 2.3. Country selection

On the basis of the systems' elements mentioned above, we selected countries that were more or less exemplary of the broad features of the types of primary care models in the EU. We also took into account geographical characteristics of the countries in the selection procedure, such as spread over Europe, small countries and islands. It should be stressed that despite the importance of context, the chosen countries are seen as exemplars of the type of system and the general implementation criteria in that model. The individual country circumstances are not explored. In total six European countries were included in the study: Germany, Cyprus, Sweden, The Netherlands, Italy, and Poland. Countries were selected in such a way that they varied in terms of lead practitioner (general practitioner, primary care paediatrician, mixed), professional autonomy in the provision of health services (more or less dominant) and health outcomes (more favourable or less favourable). For an overview of the characteristics of the selected countries see Table 2.

The six countries differ with regard to the lead practitioner, defined as the person who has the primary clinical responsibility for the care for a child. In Cyprus and Germany the primary care paediatrician is the lead practitioner. These countries also can be characterized as having a non-professional hierarchical model of care in which the organization of primary care is less structured and healthcare professionals act autonomously. In this model, patients have direct access to specialists, such as secondary care paediatricians. In Sweden and The Netherlands the general practitioner is the person with the lead responsibility. Countries are organised in a hierarchical professional model, where the general practitioner is the cornerstone of the health system and often is the gatekeeper to specialist care. In these models, care is often regulated by the state. Italy and Poland are mixed systems in terms of who has the lead responsibility for the care of a child patient. In these countries, either the paediatrician or GP can assume lead responsibility. Primary child health care in Poland is more centrally regulated, while in Italy there exists regional variations in care.

The scores on health outcomes were based on the prevalence of five indicators of the four selected health themes: measles, unwanted pregnancy and chlamydia, suicide and asthma. Table 2 gives an overview of favourable (+) or negative (-) prevalences per health theme per country. The prevalences were not available for all outcomes in all countries, which potentially affected comparability. For instance, in Cyprus the prevalences were known for only measles and chlamydia, which were favourable. The Netherlands did not collect comparable data on asthma and chlamydia, but the prevalences of the other outcomes were favourable. Sweden had complete data sets, but the

outcomes on suicide and chlamydia were unfavourable. Health outcomes for Germany were negative for asthma and measles and in Poland negative for suicide and teenage pregnancies. Prevalence of measles was the only negative indicator for Italy.

**Table 2: Characteristics of the selected countries**

	Lead practitioner	State regulation	Health outcomes*
Sweden	GP	Hierarchical professional	A +, M +, S -, TP +, C -
The Netherlands	GP	Hierarchical professional	A u, M +, S +, TP +, C u
Poland	Mixed	Hierarchical professional	A +, M +, S -, TP -, C u
Italy	Mixed	Non-hierarchical professional	A +, M -, S +, TP +, C -
Germany	Pedi	Non-hierarchical professional	A -, M -, S +, TP +, C u
Cyprus	Pedi	Non-hierarchical professional	A u, M +, S u, TP u, C +

\* A=asthma, M=measles, S=suicide, TP=teenage pregnancy, C=chlamydia, + favourable prevalence, - unfavourable prevalence, u unknown

## 2.4. Participants

Data collection took place between September 2017 and November 2017. The strategy of network sampling was used to recruit general experts for this study. Included were professionals or end users who have a general view on primary child health care and are considered an expert in this field. Country agents or other participants of the MOCHA project (Work Package leaders or members of the External Advisory Board) of the included countries received an email in which a) the purpose of the study was explained briefly and b) they were asked to name experts in their country who are knowledgeable about primary health care (i.e., have expertise in the areas of immunization, sexual reproductive health care, mental health care, and asthma care).

At least two experts in each of the following fields of expertise per country were targeted to be included in the survey, preferably with knowledge of more than one health theme:

1. Policy: policy makers concerned with the implementation of the health theme (i.e., professionals working on guidelines (national or regional level) for professionals in the field and/or working on general policies).



2. Practice: professionals in the workplace working in the area of the health topic (i.e., paediatricians, nurses, general practitioners, family doctors who actually see the child and administer tests and medication for instance).
3. Knowledge and science: experts and scientists (i.e., education and/or training of the professionals working in the field; scientists and experts active in acquiring scientific knowledge (evidence-based/practice based)).
4. End users: patient and interest groups (i.e. professionals working at a patient or parents advocacy organization or as advocate in a NGO).

Subsequently, these experts received an email with a link to an online questionnaire, made with the software program Survalyzer. Participation was on a voluntary and anonymous basis. Completion of the questionnaire took about 10 to 15 minutes per health theme. Participants received no compensation for filling out the questionnaire.

In total 55 of 130 experts (42%) who were approached to fill out the questionnaire responded. The response varied from 33% among the Italian and Polish experts and 69% among the Dutch experts. The six intermediaries, who selected the experts for their country, gave names of experts from the fields with some having skills on more than one field, as follows: 42 experts from policy, 48 experts from practice, 65 experts from knowledge and science and 29 experts from end users. Table 3 shows the fields based on their self-evaluation in the questionnaire. They could fill in only one field of expertise. The respondents identified themselves most frequently as an expert from practice. Many also responded they worked in the field of knowledge and science. Only few respondents referred to themselves having expertise from the policy or end user point of view. Table 3 summarizes further characteristics of the respondents. The respondents considered themselves most knowledgeable on immunization and asthma care (20 experts each). They considered themselves the least an expert on sexual and reproductive health. We aimed at respondents that combined expertise on different health themes, however in practice this was not often the case. The respondents were affiliated to different types of organizations, among which hospitals and research institutes/universities were most common. Moreover in some countries the respondents were difficult to categorize: in Italy some were working as family paediatrician in primary care, in The Netherlands many worked at a local public health service, and in Poland some worked in a mental health service or psychological clinic. The experts had a master's degree minimum and most had a doctorate degree.

**Table 3: Fields of expertise and characteristics of the survey participants**

	Sweden (N=6)	The Netherlands (N=9)	Poland (N=10)	Italy (N=18)	Germany (N=9)	Cyprus (N=3)
Health theme expertise						
Immunisation	2	5	3	6	2	2
Sexual reproductive health	1	2	2	4	1	1
Mental health	2	5	5	3	2	1
Asthma	1	5	2	9	2	1
Field of expertise						
Policy	-	-	-	2	-	1
Practice	2	6	6	7	5	2
Knowledge and science	4	2	3	9	4	-
End user	-	1	1	-	-	-
Type of organization						
Hospital	2	-	1	2	3	1
NGO	-	-	1	-	1	-
Research institute / university	1	2	2	6	3	-
Expertise centre	1	1	-	-	-	1
Ministry	-	-	-	1	-	-
MHS mental health service	-	-	3	-	-	-
Primary care, family paediatrician	-	-	-	4	-	-
(Local) Governmental organization	-	6	-	-	-	-
Other	2	-	2	6	2	1
Education						
Associate degree	-	-	-	3	-	-
Bachelor's degree	1	-	-	-	-	-
Master's degree	-	1	4	3	3	1
Professional degree	-	3	2	6	-	1
Doctorate degree	5	1	3	3	6	1
Other	-	-	-	3	-	-

## Survey instrument

A questionnaire was developed and piloted with a group of international scholars working in the MOCHA project. The questionnaire contained questions about guidelines and formal procedures with regard to:

1. Measles immunization and under-vaccinated children.
2. Access to contraceptive information and services for adolescents aged 10 to 18 years.
3. Assessment of mental health problems among adolescents aged 10 to 18 years.
4. Diagnosis of asthma in children aged over 6 years.

Questions were asked about:

- Whether there is a guideline or formal procedure formulated with regard to the health theme.
- Whether usage and adherence to the guideline is monitored or evaluated.
- How often primary care practitioners use the guideline or formal procedure.
- Which actions are written down in the guideline or formal procedure.

Furthermore questions were asked about the following specific actions or good practices as part of the guidelines or formal procedures:

1. Primary care practitioner-parent communication to motivate parents to have their child vaccinated.
2. Conducting a psychosocial assessment in sexually active adolescents.
3. Conducting a risk assessment for mental health problems in adolescents.
4. Performance of spirometry.

The experts were asked:

- In how many children the good practices are carried out by primary care practitioners.
- To what extent the primary care practitioners implement the actions of the guideline in the intended way.
- Whether primary care practitioners are trained to perform the good practice.

Based on the Measurement Instrument for Determinants of Innovations (MIDI) (Fleuren et al., 2014), the questionnaire further addressed promoting and hindering factors of implementation of the four good practices selected. The various constructs of the MIDI framework assessed in the questionnaire, the questionnaire items, and the range of answering categories are described in Table 4 below. Moreover, demographic variables were asked for, as well as in what type of organization the expert is employed, what his/her main current position was, what the expert's highest level of education was, and what his/her main field of expertise was.

**Table 4: Various constructs of the MIDI framework assessed in the questionnaire, questionnaire items**

Category	Constructs	Questionnaire item strongly disagree (1) to strongly agree (5)
Characteristics of the good practice	• <i>Procedural clarity</i>	The guideline or formal procedure in my country clearly describes the subsequent actions to be taken by primary care practitioners for [good practice]
	• <i>Correctness</i>	The inclusion of [good practice] in the guideline or formal procedure in my country for [health theme] is based on factual correct knowledge
	• <i>Complexity</i>	The [good practice] for [health theme] is too complex to perform by [primary care doctors or practice nurses] in my country
	• <i>Compatibility</i>	The [good practice] for [health theme] fits well within the routine practice of primary care practitioners in my country
Characteristic of the primary care practitioner	• <i>Outcome expectations</i>	Primary care practitioners in my country think it is important to use [good practice] for [health theme] Primary care practitioners in my country expect that [good practice] will lead to identification of [health theme]
	• <i>Professional obligation</i>	Primary care practitioners in my country feel it as their responsibility to [good practice]
	• <i>Knowledge</i>	[Primary care doctors or practice nurses] in my country have the knowledge to [good practice]
	• <i>Descriptive norm</i>	The [good practice] for [health theme] is generally accepted by primary care practitioners in my country
	• <i>Self-efficacy</i>	[Primary care doctors or practice nurses] in my country have the skills to [good practice]
Characteristics of organizational level	• <i>Financial resources</i>	There are enough financial resources available in my country for primary care practitioners to [good practice]
	• <i>Time available</i>	[Primary care doctors or practice nurses] in my country have sufficient time to [good practice] as intended in their routine practice
	• <i>Material resources and facilities</i>	Primary care practitioners have access to materials and other resources or facilities necessary to [good practice] as intended
Characteristics of the socio political level	• <i>Legislation and regulations</i>	The [good practice] fits in well within the legislation and regulations in my country

- *Policy support* Health care policy makers in my country support [good practice]

- 
- *Financial costs* The financial costs for conducting [good practice] for [health theme] by primary care are payed by the insurance refund system in my country
-

## 2.5. Analysis

The data was analysed with SPSS, using frequency tables and crosstabs. Three independent researchers studied the outcomes to familiarise themselves thoroughly with the data. Subsequently, the results were scored as positive, negative or not positive or negative. The interpretation was double-checked to ensure objectivity of the results and there was discussion between the researchers about doubtful cases until consensus was reached. The questionnaire, and the MIDI, served as a framework for data analysis. For each health theme, data was analysed based on key concepts of the questionnaire.

## 3. RESULTS

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### 3.1. Availability of guidelines or formal procedures per health theme

According to the experts, guidelines or formal procedures were available in all countries with regard to one or more of the four studied aspects of primary child health care. In all countries guidelines or formal procedures existed for asthma (see Figure 1). Guidelines or formal procedures on immunisation, sexual reproductive health and mental health existed in a minority of countries.

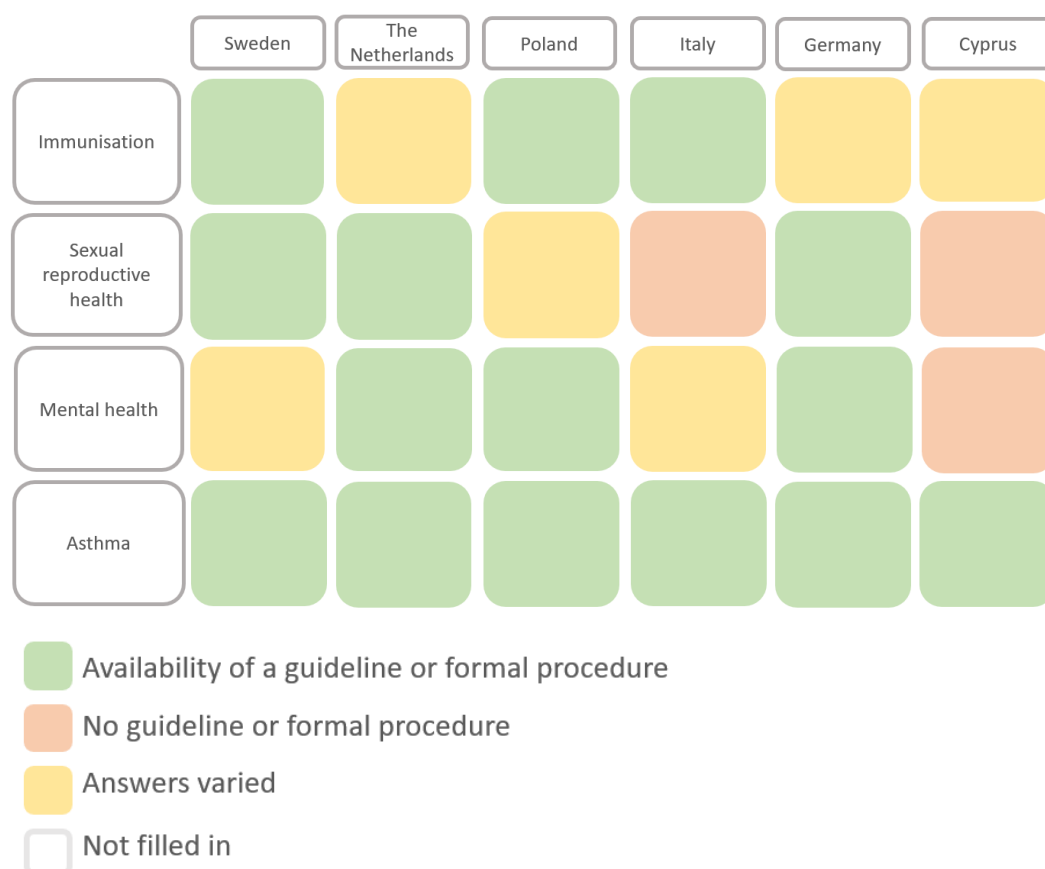
To determine whether variation in terms of lead practitioner and autonomy of the provision of health services had an influence on the availability of guidelines or formal procedures per health theme, we compared:

1. countries with a hierarchical professional model with countries with a non-hierarchical professional model, and
2. countries with a GP-led provision of primary care, with a mixed GP/Paediatrician-led provision of primary care, and with a Paediatrician-led provision of primary care.

In Cyprus, a country with a non-hierarchical professional model and where paediatricians deliver primary care for children, guidelines were the least available. Experts from Italy, which has a similar model and mixed GP/Paediatrician-led provision of care, also reported lesser guideline availability. Germany, which has a non-hierarchical professional model and paediatrician-led provision of care, differed from Cyprus and Italy as guidelines were available for three health themes. Sweden, Netherlands and Poland, all countries with a hierarchical professional model and a GP or mixed GP/Paediatrician-led provision of care, experts seemed to be positive about the availability of guidelines.

In summary countries with paediatrician or mixed-led, non-hierarchical professional systems were at a more disadvantaged position. However, Germany was divergent in this respect

**Figure 2: Availability of guidelines per health theme in the participating countries**



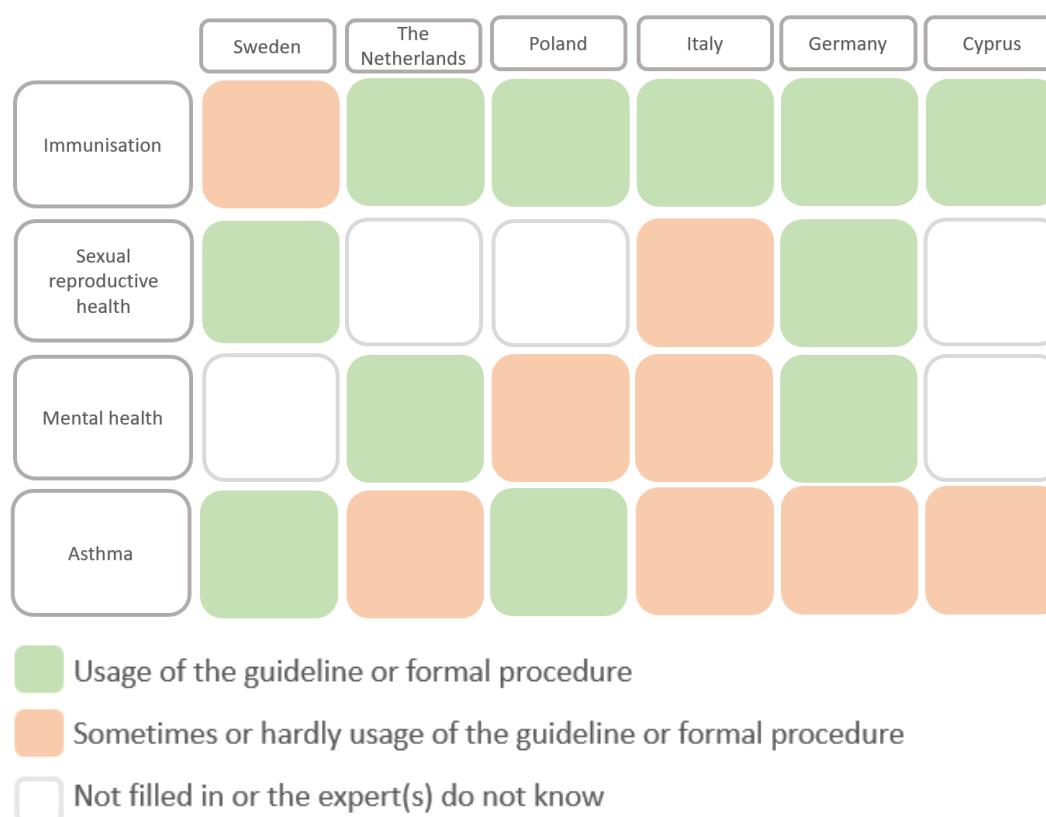
### 3.2. Use of guidelines or formal procedures per health theme

Experts who answered that guidelines were available for certain health themes, were also asked about the extent to which the guidelines were used. In general, guidelines or formal procedures for immunisation seemed used for nearly all children (see figure 2). Contrary to their availability, guidelines or formal procedures for asthma seem to be used less often; either only for a number of children at risk or for hardly any children. In particular, the experts from Germany were most positive about use of the guidelines or formal procedures, which is in line with guideline availability. The experts from Italy were less positive about the use of guidelines or formal procedures. They reported that guidelines or formal procedures were only used with regard to immunisation and not with regard to the other health themes. The experts of the other responding countries (Cyprus, Sweden, Poland and the Netherlands) reported that guidelines or formal procedures were used for only one or two health themes or that they did not know whether guidelines were used.

A clear pattern between the types of countries in terms of lead practitioner and professional autonomy could not be seen. In general, regardless of the studied elements of primary child health

care models, experts reported use of immunisation guidelines or procedures and limited use of asthma protocols.

**Figure 3: Use of guidelines per health theme in the participating countries**



### 3.3. Implementation of the guidelines as intended

The experts rated the extent to which the primary care practitioners implemented the actions of the guideline or procedure in the intended way. The implementation of immunisation guidelines was assessed as intended to a great or certain extent, except by the experts from Cyprus and Sweden. All experts were critical with regard to the fidelity of the implementation of the actions of one or two guidelines or formal procedures. They were most critical about the implementation of the asthma guideline. This picture seems to be consistent for all countries; there was no difference or rather low intention of guideline implementation between the countries classified in terms of lead practitioner and professional autonomy.



**Figure 4: Implementation of the guidelines as intended**



### 3.4. Monitoring or evaluation of the guidelines or formal procedures per health theme

Most of the experts answered that the guidelines or formal procedures in their country are not monitored or evaluated. Some experts reported that the guidelines or formal procedures are monitored or evaluated, but not strictly. For the health theme of asthma, however, experts in Italy and Poland unanimously answered that the guideline is strictly monitored or evaluated. No clear differences between countries in terms of elements of primary child health care models were found.

### 3.5. Training of primary care practitioners in the participating countries

The experts were subsequently asked about certain actions that are included in guidelines or formal procedures - hereafter called good practices. Specifically, these good practices were:

- communication with parents who are not inclined to have their child vaccinated (immunisation);
- conduct of a psychosocial assessment in sexually active adolescents (sexual reproductive health);
- conduct of a risk assessment for mental health problems in adolescents (mental health); and
- performance of spirometry (asthma).

The experts were asked whether primary care practitioners were trained in performing the good practice (Figure 4). Experts in most countries reported that primary care practitioners were not specifically trained in any of the good practices, or they were not unanimous whether primary care practitioners were trained. In Sweden, The Netherlands and Poland, countries with a hierarchical professional primary care model and a GP or mixed GP/paediatrician provision of care, training was in general available for one or more of the good practices. Countries with a non-hierarchical professional system and a Paediatrician or mixed GP/paediatrician provision of care seemed to lack training on the good practices, or the experts differed in their opinion on the subject.

**Figure 5: Training of primary care practitioners in the participating countries**



### 3.6. Implementation of good practices

The experts were asked to indicate the extent to which the four good practices had been implemented in their country. For each good practice, the experts were asked to what extent it was used for children who have a significant likelihood of need for the action, such as spirometry or risk assessment. We also checked whether the identified good practice was formalised and written down. According to the experts, the good practice of motivating parents to have their child vaccinated using face to face communication was the best implemented. Performing spirometry on children who have a significant likelihood of asthma was rated by the experts as the least often implemented. Figure 5 shows that the experts from the countries with a mixed primary care system led by GPs or Paediatricians (Poland and Italy) felt that one or two of the good practices, psychosocial assessment in sexually active adolescents and risk assessment for mental health problems, were not fully implemented.

**Figure 6: Implementation of the good practices in the participating countries**



### 3.7. Implementation conditions

Experts were asked to score the conditions promoting or impeding the implementation of any of the good practices, at the level of the good practice itself, the primary care professional, the organisation, and in terms of the socio-political context. Table 5 presents a summary of responses to these questions.

#### *Communicating with parents who are not inclined to vaccinate their child*

In relation to the implementation of the good practice to communicate in a certain way with parents who do not wish to vaccinate their child, experts from all countries except Poland mentioned mainly facilitating factors. The most important facilitators were

1. at the level of the good practice itself, such as the good practice is not too difficult to perform, it fits well within the routine practice,
2. at the level of the primary care practitioner, such as it is important to use the good practice, it is generally accepted by primary care practitioners, and
3. at the level of the socio-political context, such as the good practice is supported by health care policy makers.

Variation in expert evaluation scores was seen at the organizational level. The experts from Sweden, Italy, and The Netherlands identified financial obstacles and limited time available as important organizational level obstacles, whereas material resources and facilities were seen as a facilitators. Limited time was mentioned by many experts in response to the open questions (see Appendix 2). Finally, experts from Poland identified mainly barriers for communicating with parents who are not inclined to have their child vaccinated at the level of the primary care practitioner, the organization and the socio-political context.

#### *Conducting a psychosocial assessment in order to provide contraceptive information and services for sexually active adolescents under 19 years of age*

Experts in most countries except the Netherlands, identified barriers at all levels to conduct a psychosocial assessment for contraceptive information and services. At the level of the primary care practitioner, barriers were seen in a lack of knowledge and self-efficacy, or that this good practice does not form part of the professional obligation (Italy, Cyprus). Experts from Poland were most negative about the implementation conditions of conducting a psychosocial assessment, other than that primary care practitioners feel it is their responsibility to implement the good practice.

Experts from the Netherlands were most positive about the implementation conditions of conducting a psychosocial assessment in sexually active adolescents. Promoting factors were identified at all levels, except at the level of the organization. The main barrier at the organisational level was limited time available to implement the good practice as intended in the routine practice. Additional barriers mentioned by the experts in response to the open questions, were among others lack of anonymity, lack of time and cultural and educational barriers.

#### *Conducting a risk assessment for mental health problems in adolescents aged 10-18 years*

In relation to the implementation of the good practice of conducting a risk assessment for mental health problems in adolescents, experts from the Netherlands were the most positive. They identified, in response to the open questions, the following facilitators: legislation, financial resources and referral to a practice nurse. Whereas experts from Sweden and Cyprus identified mainly barriers, such as lack of knowledge or skills to implement the good practice. A factor that was identified by Swedish experts as main facilitator at the level of the socio-political context was compliance with legislation and regulations. Experts from Germany identified mainly facilitators on the level of the good practice and primary care practitioner, whereas the barriers were identified on the organizational and the socio-political level. Experts from Italy and Poland identified barriers and facilitators on all levels. In response to the open questions, the experts from Poland mentioned the following barriers: lack of staff capacity, time and skills, working hours and the financial system. The experts from Italy identified costs of training, lack of funds and dedicated policies as important barriers. Training was considered as a facilitator.

#### *Spirometry*

In relation to the implementation conditions of the good practice of performing spirometry, experts from Sweden and Poland were most positive, although at the organizational level, experts from Sweden thought time available for a nurse a facilitator and lack of time for a doctor a barrier. Experts from almost all countries identified barriers on organizational level such as limited financial resources and time available for a doctor and a nurse, and lack of knowledge and self-efficacy of doctors and sometimes nurses. However, also facilitators were mentioned with regard to performing spirometry. For instance, experts from the Netherlands and Italy identified the foundation of the good practice on correct knowledge on the level of the good practice and fit with legislation and regulations on the level of the socio-political context as facilitators, but they were negative about primary care professionals feeling it their responsibility to perform spirometry. Experts from Poland and Cyprus mentioned

barriers on the level of the socio-political context, namely lack of fit with legislation and regulations and lack of policy support. The expert from Sweden mentioned in majority facilitators.

**Table 5: Implementation conditions of the good practices in the participating countries**

	Sweden		The Netherlands		Poland		Italy		Germany		Cyprus	
	Barrier	Facilitator	Barrier	Facilitator	Barrier	Facilitator	Barrier	Facilitator	Barrier	Facilitator	Barrier	Facilitator
Motivate parents / guardians using face-to-face communication												
Good practice		✓		✓	✓	✓	✓	✓		✓		✓
Primary care practitioner		✓		✓	✓			✓		✓		✓
Organizational	✓		✓		✓		✓	✓		✓		✓
Socio political		✓		✓	✓			✓		✓	✓	✓
Psychosocial assessment (SRH)												
Good practice				✓	✓		✓	✓	✓	✓	✓	✓
Primary care practitioner				✓	✓		✓		✓		✓	
Organizational			✓		✓		✓		✓	✓	✓	
Socio political				✓	✓		✓	✓	✓		✓	
Risk assessment (mental health)												
Good practice	✓			✓	✓	✓	✓	✓		✓	✓	
Primary care practitioner	✓			✓	✓	✓	✓	✓		✓	✓	✓
Organizational	✓		✓	✓	✓		✓	✓	✓		✓	
Socio political	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Spirometry												
Good practice		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Primary care practitioner		✓	✓			✓	✓		✓	✓	✓	✓
Organizational	✓	✓	✓		✓		✓		✓	✓		✓
Socio political		✓		✓	✓	✓		✓	✓	✓	✓	✓

In summary the experts from most countries identified mostly facilitators with regard to communicating with parents who are not inclined to vaccinate their child. Barriers were notably found with regard to the conduct of spirometry in diagnosing asthma. Poland, Italy, Germany and Cyprus, all countries with a paediatrician- or mixed paediatrician/GP-led child primary care experienced facilitators and barriers in the implementation of the good practices. The experts from the Netherlands and Sweden, all countries with hierarchical professional GP-led systems, experienced facilitators to a greater extent, in Sweden particularly in terms of motivating parents to vaccinate their child and spirometry.

## 4. DISCUSSION

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Several conclusions can be drawn from the research.

### *Availability and use of guidelines and formal procedures and training of primary care professionals*

The experts reported on the availability of guidelines or formal procedures with regard to immunisation, sexual reproductive health, mental health and asthma. None of the countries had guidelines available for every health theme. The number of the health themes for which guidelines were available in the individual countries fluctuated between one and three. All countries appeared to have guidelines or formal procedures available for asthma.

The experts gave their opinion on the use of the guidelines or formal procedures in their country; and also on the implementation of the good practices included in the guidelines and procedures. In general, guidelines or formal procedures for immunisation were used for nearly all children. In spite of their availability, guidelines or formal procedures for asthma were used less often; only for a number of children at risk or for hardly any children. With regard to sexual and reproductive health, and mental health, variations between countries exist. For immunisation, implementation of the actions of the guideline or procedure as intended was positively assessed by the majority of countries. Although all experts were critical with regard to the fidelity of the implementation in terms of sexual reproductive health and mental health, they were most critical about the implementation of the asthma guideline. The guidelines or formal procedures for asthma in the participating countries were generally not monitored or evaluated. An exception, however, appeared to be the guidelines or formal procedures for asthma in Italy and Poland. The experts of the majority of countries reported that training of primary care practitioners in the good practices studied is not common.

In terms of the implementation of the guidelines, the experts indicated that the action of motivating vaccine hesitant parents using face to face communication was the best implemented. Performing



spirometry in children who have a significant likelihood of asthma was, according to the experts, the least implemented. The extent to which the actions regarding sexual reproductive health and mental health were implemented varied per country.

With regard to the availability of guidelines or standard procedures, information is available from the surveys among MOCHA's country agents of all EU countries. Similar results as presented in this e-book were found. Guidelines on asthma management were most present in the EU countries, i.e. in 91% of the countries according to the responding country agents. Guidelines for primary care practitioners about screening young people for mental health issues were available in 71% of the countries. Specific guidance or standards for primary care professionals about adolescent pregnancy were only in 29% of the countries available. With regard to immunization guidelines, specifically a question was asked on the existence of a formal procedure for immunization against measles for hard-to-reach groups of children and marginalized population groups (e.g. asylum seekers, children in care, children in poverty etcetera). Such a procedure was available in half of the countries (53%). This concerned for example a system of repeated calls or measures directed to specific groups, such as Roma or refugees.

#### *Barriers and facilitators of implementation*

In general, the results of this study showed that the implementation of the good practices studied is influenced by a range of facilitating or hindering factors that fall under four broad categories, which are described by a framework representing the implementation process and related categories of determinants (good practice, primary care practitioner, organization, and socio political level factors). Mainly facilitating factors were identified by experts in all countries for the good practice of face to face communication with parents who initially do not wish their child to be vaccinated. Important facilitators at the level of the good practice were that the good practice is not too difficult to perform and fits well within routine practice. Other facilitators included, such as the perceptions of the primary care professional that it is important to use the good practice, and that the good practice is supported by health care policy makers. Barriers were identified at an organization level, however, namely financial obstacles and limited time available.

With regard to the implementation of the good practice of conducting a psychosocial assessment in order to provide contraceptive information and services for sexually active adolescents under 19 years of age, the experts identified mainly barriers. With regard to the implementation of the good practice of conducting a risk assessment of the mental health problems in young people aged 10-18 years, the majority of countries show a mixed picture and identified both facilitators and barriers at different levels.

With regard to the implementation of the good practice of performing spirometry in children who have significant likelihood of having asthma, both barriers and facilitators were identified by experts in most countries. They reported that spirometry was not implemented at all or only to a reasonable extent. Important barriers that were mentioned by experts from almost all countries were financial resources and time available, knowledge and self-efficacy for doctors and sometimes nurses to perform spirometry. Sometimes barriers were seen on the socio-political level with regard to policy support and legislation and regulation.

Barriers and facilitators may be understood from the Cynefin model on complexity (IBM) (Snowden & Boone, 2007). For example vaccination is a more or less simple practice that can be changed with relatively simple efforts. Use of the spirometer in asthma care may be more complicated and dependent on variables which can be managed reasonably well in care, such as resources and professional consensus on the acceptance of the good practice. Risk assessment for mental health and sexual and reproductive health may be a more complex good practice, due to the influence of societal, genetic and care determinants. The assessment of the health problems is therefore difficult and can be managed to a lesser extent.

#### *Similarities and differences between good practices and models of child primary care*

The relationship between models of primary child health care and use of guidelines and formal procedures and implementation conditions of the related good practices warrants further investigation. Although, in general, limited differences were found between countries who varied in terms of lead practitioner and professional autonomy, with regard to some results a possible influence was found.

In terms of the availability of guidelines: countries with a GP or mixed-led, hierarchical professional systems seemed to have guidelines available with regard to more health themes than countries who have paediatrician or mixed-led, non-hierarchical professional systems. The same result was found for training of primary care professionals. A possible explanation is the difference between hierarchical models in which the health system is organized around primary care and regulated by the state and the non-hierarchical model in which the organization of primary care is left to the initiative of healthcare professionals.

The implementation of good practices in Germany, being a paediatrician-led, non-hierarchical professional system, differed from Italy and Cyprus with similar characteristics. It can be hypothesized

that the varying countries' budgets and hence the expenditures of the Gross Domestic Product (GDP) on health care, will affect the means for quality assurance in health care. Possibly the advantaged position of Germany as a country with a higher GDP per capita in comparison to Italy and Cyprus, may have added to its favourable results with regard to the availability and use of guidelines. The influence of financial factors on the situation of child primary care will be further investigated in MOCHA ([WP 6: Economic and Skill Set Evaluation and analysis of models](#)).

The experts from countries with GP-led systems seemed to report to a great extent facilitating factors. For instance experts from the Netherlands were positive about the implementation of the good practice with regard to psychosocial assessment in sexually active adolescents and from Sweden with regard to spirometry. The GP-led systems of Sweden and The Netherlands have similar specific characteristics namely a specialised preventive service for children. In such an organization of child primary care, conditions may be encouraging for the implementation of good practices. Possibly in GP-led systems the professionals find themselves supported to carry out the good practices. This will be further investigated in terms of outcomes by the MOCHA project ([WP 4: Identification and Application of Innovative Measures of Quality and Outcome of Models](#)).

### *Strengths and limitations*

This study reported in this e-book has various strengths and limitations. Strengths include the case study approach with its focus on implementation conditions of four divergent good practices, within the context of six EU countries and the attention to elements of primary child health care models. A limitation is that the number of experts was limited and had mainly skills from practice and knowledge and science. Another limitation is the partial response on several items in the questionnaire. Data were missing because experts did not have the information on specific aspects of implementation of the good practices. Nevertheless, we were able to identify important barriers and facilitators of implementation of the good practices within different models of primary child health care. As such, the present e-book contributes to a preliminary understanding of the implementation conditions of good practices and the role of primary child health care models.

The explanation for the finding in this e-book that mainly barriers were reported with regard to spirometry in diagnosing asthma, may be the availability of guidelines or formal procedures for asthma in all countries. We expect that a relatively large amount of experience has been gained in practice, which may have led to insights into barriers of implementation.

## Conclusion

The MOCHA project aims to perform a systematic, scientific evaluation of the types of different models of primary child health care in EU countries. This report shows that models of primary care to a certain extent are relevant for the implementation of good practices. Further research of the MOCHA-project should provide an improved understanding of the way models of child primary care influence implementation conditions of good practices and the transferability of these models in the EU context.

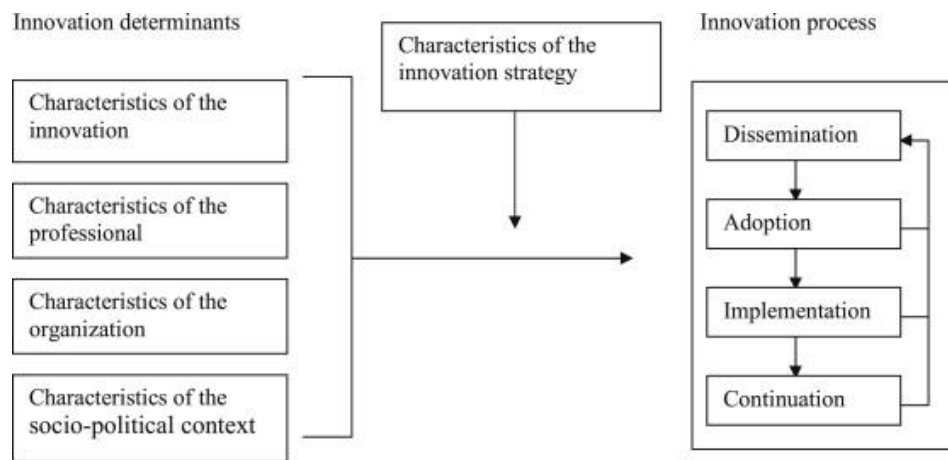
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**Appendix 1: Framework representing the innovation process and related categories of determinants**



Source: Fleuren et al. (2014)

## Appendix 2. Experts' opinions on the open questions of the MIDI barriers and facilitators of good practices in child primary care

Sweden		The Netherlands		Poland		Italy		Germany		Cyprus	
Facilitator	Barrier	Facilitator	Barrier	Facilitator	Barrier	Facilitator	Barrier	Facilitator	Barrier	Facilitator	Barrier
Motivate parents / guardians using face-to-face communication											
Information material > video	Own mindset	E-learning	Lack of time	Information support	Lack of time	Vaccination strategy	- Media - Paternalistic approach		Lack of time		Lack of communication skills
Psychosocial assessment (SRH)											
		Reliable information	- Financial - Lack of anonymity		Lack of time		- Cultural and educational barriers - Lack of time - unknownphenome non		Lack of time		
Risk assessment (mental health)											
		- Legislation - Finance - Referral practice nurse	- Lack of time - Lack of rooms		- Lack of staff capacity - Lack of time - Lack of skills - Working hours	Training	- Costs of training - Lack of funds - Dedicated policies				

			- Financial system						
Spirometry									
Courses	Inter-pretation spirometry	Courses and e-learning	- Perform spirometry when it is an indicator - Financial system	Lack of time	- Courses - Contract public health	- Lack of funds - Lack of time - Lack of staff capacity - Very few courses	Disease management	Lack of time	



