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Prioritization of implementation barriers related to integrated care models in Central and Eastern European countries

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ABSTRACT

The importance of integrated care will increase in future health systems due to aging populations and patients with chronic multimorbidity, however, such complex healthcare interventions are often developed and implemented in higher income countries. For Central and Eastern European (CEE) countries it is important to investigate which integrated care models are transferable to their setting and facilitate the implementation of relevant models by identifying barriers to their implementation. This study investigates the relative importance of integrated care models and the most critical barriers for their implementation in CEE countries. Experts from Croatia, Hungary, Poland, Romania and Serbia were invited to complete an online survey within the SELFIE H2020 project. 81 respondents completed the survey. Although experts indicated that some integrated care models were already being implemented in CEE countries, the survey revealed a great need for further improvement in the integration of care, especially the managed care of oncology patients, coordinated palliative care of terminally ill patients, and nursing care of elderly with multimorbidity. Lack of long-term financial sustainability as well as of dedicated financing schemes were seen the most critical implementation barriers, followed by the lack of integration between health and social care providers and insufficient availability of human resources. These insights can guide future policy making on integrated care in CEE countries.

1. Introduction

The redesign of health service delivery in the form of integrated care has been receiving more attention lately [1]. However, complex healthcare interventions such as providing holistic integrated care are more often developed and implemented in higher income countries with more advanced health care systems than lower income countries. For instance, a recent study systematically explored the integrated care practices targeting patients with multi-morbidity in the EU and found that the great majority of these programmes were located in more developed countries. European countries without such initiatives were all located in the Central and Eastern European (CEE) region [2]. In countries where initiatives for the integration of care are missing, for instance due to the scarce resources available to operate the health care system, it might be useful to consider transferring integrated care programmes that have been successfully implemented in other countries, instead of conceptualizing new ones from scratch. However, payers and policymakers need to carefully and systematically evaluate the transferability of interventions, technologies and care programmes to their setting [3]. These transferability assessments should focus both on the

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transferability of the scientific evidence [4], as the evidence based evaluations of integrated care models has been considered a key success factor in changing the care practice [5] and on the transferability of solutions by identifying the critical implementation barriers.

Although former studies have identified a number of potential barriers of providing integrated care, none of them explored their relevance in the context of transferability to lower income countries where the care integration is less mature [6–8]. Furthermore, those studies that investigated this issue using case studies or a series of existing integrated care models did not include any models from the CEE region [9–11]. However, countries from the region are important to consider for a number of reasons. Most importantly, the structure and operation of health care systems in CEE countries differ substantially from Western European countries. This pertains for example to the number of available professionals with appropriate competences and skills to be included into the care programmes, the decision-makers' awareness of innovative financing techniques to fund integrated care models, the practice of monitoring the efficiency of health care utilization, or the role of informal co-payment in providing care [12–15]. Therefore, the most relevant problems of the health care systems and the priorities of health policy decision-makers need to be explored and identified in order to judge whether an elsewhere successful care program would be relevant in the context of a given CEE country.

The objective of this study was to explore the relative importance of implementing of integrated care models among CEE countries based on a list of existing integrated care programmes, and to identify and prioritize potential barriers to the implementation in these countries.

2. Methods

2.1. SELFIE project information

This study has built on the work previously conducted in the SELFIE H2020 project that performed a systematic evaluation of 17 integrated care models for people with multimorbidity selected by the consortium [16]. These models have already been implemented in the 8 European countries involved in SELFIE (Austria, Croatia, Germany, Hungary, Netherlands, Norway, Spain and United Kingdom). Furthermore, the project has identified the major elements required for the integration of care [17] and proposed a new conceptual framework with six domains for such elements (service delivery, leadership & governance, workforce, financing, technologies & medical products, information & research) [18].

2.2. Survey development

An online survey was developed in SurveyMonkey in English. The survey consisted of two major topics. The first topic focused on the relevance of potentially transferable integrated care models for CEE countries. The second part explored the perceived importance of implementation barriers to integrated care models in the CEE countries.

Details on the potentially transferable models were extracted from the thick descriptions that were published on the website of the SELFIE project (https://www.selfie2020.eu/publications). Thick descriptions aim to investigate patterns of cultural and social relationships while taking into account different stakeholders' opinions and the specific context of the studied case [19–20]. The thick description method consisted of document analysis and semi-structured interviews with a wide range of stakeholders, such as program managers, program initiators, representatives of payer organizations, physicians, non-physician medical staff, informal caregivers and patients or their representatives [21–22]. Based on the systematic analysis of thick description documents, the 17 models were described in short terms focusing on 3 domains: 1) Summary of the main services delivered and the integrated care approach; 2) Target group of the model; 3) Main objective of the model. Similar models were aggregated, resulting 13 general descriptions of the integrated care models. Although here we refer to these descriptions as models, in most cases they focus on the key elements of care integration and obviously do not describe all components of the models in detail. Descriptions are included in Table 1, while their linkage to the SELFIE models is illustrated in Appendix I.

For each described model, survey participants were asked to indicate whether the listed integrated care model existed in their country and whether the implementation of the listed model would be relevant to improve population health & well-being, patient experience, and/or reduce cost of health and social care for multi-morbid patients. Accordingly, the participants had to complete two statements for each model with multiple response options. The first statement indicated whether "*An integrated care model with this objective in my country has…*" a) not been implemented; b) been implemented as a pilot initiative; c) been implemented in a regional setting; d) been implemented in a national setting. The second statement indicated whether "*Better integration of care with this objective in my country has…*" a) High relevance; b) Moderate relevance; c) Minor relevance; d) No relevance.

To define the most critical barriers of implementing integrated care models, the thick descriptions for the 17 models were systematically reviewed. The descriptions of barriers were extracted and short forms were created to reduce the text and to focus on the essentials of the barriers. Similar short forms were collapsed or merged and code families and networks were established to best reflect the main barriers. Eventually, 37 unique barriers were identified and structured according to the 6 domains of the SELFIE Framework (service delivery, leadership & governance, workforce, financing, technologies & medical products, information & research) [18].

The perceived importance of the 37 identified barriers in CEE countries was explored by asking the participants to evaluate the list of potential barriers. For each potential barrier, survey participants were asked to indicate the difficulty to overcome the barrier of integrated care models in their country. Accordingly, the participants had to select a statement for each barrier with multiple options. The statement indicated whether "*In my local environment in the next 5 years this…*" a) is not a problem (solution already exists); b) problem can be solved with minor effort; c) problem can be solved with moderate effort; d) problem can be solved with huge effort; e) problem cannot be solved. The full list of potential barriers is given in the supplementary material (Appendix III).

To facilitate the common knowledge of the participants, the definition of key terms and expressions were given in the survey (see Box 1). Furthermore, to ensure clarity and well-understanding of the survey, test runs were completed to fine-tune the survey with SELFIE researchers and other researchers not involved in the project. The full English survey was also translated to local languages of the included countries by a local native speaker with expert knowledge on integrated care and an electronic version was shared with survey participants.

2.3. Survey participants

The online survey was administered in 5 CEE countries: Croatia, Hungary, Poland, Romania and Serbia. In each country, 15–20 participants were planned to complete the survey. Data collection period started on the 25th of March 2019 and ended on the 16th of May 2019. To identify relevant experts, primary contacts who were known to have broad prior experience in the field of integrated care were identified in each country. They were responsible for identifying, contacting and ensuring correspondence with the potential survey participants from their countries. Potential survey participants were identified by the primary contacts based on perceived knowledge and experience in health policy with special focus on integrated care. They were recruited among the five groups of stakeholders that participated in the SELFIE project, i.e., professionals, payers, policymakers, informal caregivers and representatives of patient organizations [23]. In the survey, participants were asked to indicate their primary stakeholder group affiliation accordingly. However, it was also possible to provide additional

Table 1
Descriptions of the included integrated care models.

Models	Description	Target group	Main objective
#1	The model includes developing individual treatment plans based on a comprehensive assessment of the individual and providing services with the integration of health and social care professionals at regional level	Individuals of the general population with complex needs	To improve the health of the population, improve the individuals experience of care and reduce per capita costs of care
#2	The model provides support for substituting complex care from hospital to community-based services conducted with support of specialized professionals	Individuals of the general population with high risk for hospitalization	To improve care coordination and substitute hospital admissions with community based services
#3	The model establishes care teams from primary, secondary and social providers to coordinate patient care	Individuals of the general population with multi-morbidity	To improve care coordination and patient empowerment to take responsibility for their health and well-being
#4	The model establishes care teams from primary, secondary and social providers to coordinate patient care	Individuals aged 65+ with long-term conditions	To improve the health of the population and improve the individuals experience of care
#5	The model implements digital health tools, which provide platform to exchange health information across health care providers	Individuals of the general population with complex needs	To facilitate structured and flexible digital communication among all actors of the care process, professionals and patients, and to foster collaborative work centered around patients
#6	The model establishes a comprehensive information system of electronic health records for health and social care services	Every insured patients aged 65+	To improve patient care by monitoring and evaluating health and social care needs and functional abilities
#7	The model identifies individuals with high risk of hospital admission based on an initial assessment and then categorizes them into risk classes and subsequent case management tailored to the individual person	Patients aged 55+ with multi-morbidity and being at high risk for hospital admissions	To reducing avoidable hospital admissions through preventive case management and improved self-management skills
#8	The model identifies individuals with need of elderly care and then provides nurse-led, tailored and multi-disciplinary home care	Elderly patients with multi-morbidity living at home	To provide proactive elderly care including preserve daily functioning, improve quality of care and reduce costs
#9	The model coordinates nursing care at home or at nursing homes after hospital-discharge	Elderly patients with multi-morbidity	To improve home and nursing care and coordinate patient pathway after hospital discharge
#10	The model coordinates the palliative care across inpatient care, home care and social care	Terminally ill patients (e.g. late stage cancer) with palliative care needs and their families	To improve the effectiveness and quality of palliative care and to achieve better quality of life for seriously ill patients
#11	The model establishes case management to manage patient pathways in secondary care	Oncology patients	To improve the timeliness and quality assurance of oncology care and to ensure efficient and patient centered health care delivery
#12	The model identifies individuals with complex health and social problems and provides case management based on individual care plan	Persons with multiple complex needs in the health and/or social domain	To improve the quality of the provided care and services, to improve health outcomes and to reduce care costs
#13	The model provides interdisciplinary specialized treatment for opioid addiction	Individuals with opioid addiction	To improve the care of this hard to reach population and improve their quality of life

stakeholder perspectives.

All participants were informed about the study and agreed to participate. More specifically they 1) agreed on taking part in the survey; 2) were informed and understood that their participation was voluntary and that they could withdraw from the survey at any time; 3) confirmed that they had read and understood the information sheet provided for the survey; 4) understood and agreed that the data were used in an anonymized format and names would not be used in any reports or publications resulting from the survey.

2.4. Data analysis

The question whether the models were implemented in participating countries was answered by calculating the proportion of survey respondents who indicated that the models were already implemented. In the analysis we did not differentiate their answer according to whether the model was implemented as pilot, as regional program or as national program. The question on the relevance of the integrated care models was answered by calculating a score of the relevance by multiplying the high relevance answer with 3, the moderate relevance with 2, the minor relevance with 1 and the no relevance with 0. The mean scores and the variance for the total sample and for the investigated countries were calculated. The models were also ranked based on this score.

To identify the key barriers of integrated care, each domain of the SELFIE Framework was analysed separately. In the analysis the responses indicating that a barrier is ‘impossible to solve’ or it ‘requires huge efforts to solve’ were pooled. The proportion of respondents that either said it was impossible to solve or required huge efforts to solve was calculated. All barriers that were found impossible to solve or required huge efforts to solve by more than 50% of the respondents were identified and listed. For each barrier, a chi-square test was conducted on the pooled responses from all countries to test the null hypothesis that the provided responses were generated at random by the participants. We expected a random pattern of 40% of the responses indicating that the barrier was critical, i.e. two of the 5 possible response options (impossible to solve or requires huge efforts to solve).

2.5. Debriefing

After the survey data was processed and the findings were established, the primary contacts from each country who approached the survey participants also received the country-specific survey results and provided information to the interpretation of the findings. Specific

questions were proposed to them regarding the implementation of certain integrated care models and particular barriers of the implantation via e-mails. Debriefing information was used for the discussion of this paper.

Box 1: Key definitions provided to survey participants

SELFIE: SELFIE is an international health policy research project commissioned by the European Union under the Horizon 2020 framework program (www.selfie2020.eu). The SELFIE project aims to improve the efficiency and patient-centeredness of health and social care for multi-morbid patients by proposing evidence-based, economically sustainable integrated care models that stimulate cooperation across different sectors of health and social care.

Integrated care: Structured efforts to provide coordinated, proactive, person-centered, multidisciplinary care by two or more well-communicating and collaborating care providers either within or across sectors.

Multi-morbidity: Multiple (i.e., at least two) chronic conditions, physical or mental, occurring in one person at the same time, where one is not a known complication of the other.

3. Results

3.1. Survey population

There were 118 experts who started the survey. The completion rate was 68.6% and the median time spent was 25 min. Consequently, there were 81 fully completed surveys with the following country distribution: Croatia: $n = 16$; Hungary: $n = 17$; Poland: $n = 16$; Romania: $n = 17$; Serbia: $n = 15$. Regarding the participants' primary stakeholder group affiliations, healthcare providers and policy makers represented more than half of the participants (payers: $n = 10$; policymakers: $n = 20$; patients: $n = 8$; partners: $n = 5$; providers: $n = 38$). However, many participants indicated to have secondary stakeholder perspectives as well: payers $n = 25$; policymakers $n = 30$; patients $n = 29$; partners $n = 18$; providers $n = 14$.

3.2. Relevance of integrated care models

Table 2 presents the results of the implementation of integrated care models in the participating countries. Results indicated that in the investigated countries there are a number of initiatives focusing on integrated care provided in different forms and focusing on different patient groups. In all countries there were large variabilities in the percentages. All countries had at least one model for which the majority of participants (more than 2/3) indicated that the model was implemented. In contrast, in all countries except Croatia there was at least one model for which the majority indicated that no corresponding model was implemented in their country.

In the total sample the percentages for the models focusing on the coordination of palliative care and on the case management of oncology patients were the highest because their descriptions were based on models that were known to be actually implemented in some CEE countries (i.e. they were selected for evaluation in the SELFIE project for Croatia and Hungary). Romania was the only country where these two models were not among those with the highest percentages; instead two models focusing on nursing care of elderly patients had the highest percentages of being implemented. In Serbia the palliative care model, and in Poland the oncology care model was most frequently reported as being implemented.

Table 3 shows the relevance of improving the integration of care in terms of the described models. The responses show that in general there is a high need for improving the integration of care in CEE countries. The calculated scores on the relevance ranged in the total sample from 2.62 (the model focusing on the managed care of oncology patients) to 1.91 (the model focusing on the interdisciplinary specialized treatment of patients with opioid addiction). In the total sample all but one model

Table 2
Proportion of respondents who reported that the listed integrated care models were at least partially implemented.

Model descriptions	Target population	Proportion of responses indicating that the models were implemented as pilot, regional or national program					
		Total sample	Country specific results				
			CRO	HUN	POL	ROM	SRB
The model establishes case management to manage patient pathways in secondary care	Oncology patients	72%	69%	82%	94%	47%	67%
The model coordinates the palliative care across inpatient care, home care and social care	Terminally ill patients with palliative care needs and their families	72%	100%	65%	56%	59%	80%
The model identifies individuals with need of elderly care and then provides nurse-led, tailored and multi-disciplinary home care	Elderly patients with multi-morbidity living at home	58%	88%	53%	25%	77%	47%
The model coordinates nursing care at home or at nursing homes after hospital-discharge	Elderly patients with multi-morbidity	57%	81%	41%	31%	77%	53%
The model implements digital health tools, which provide platform to exchange health information across health care providers	Individuals of the general population with complex needs	57%	88%	59%	44%	47%	47%
The model provides support for substituting complex care from hospital to community-based services conducted with support of specialized professionals	Individuals of the general population with high risk for hospitalization	52%	69%	53%	56%	53%	27%
The model includes developing individual treatment plans based on a comprehensive assessment of the individual and providing services with the integration of health and social care professionals at regional level	Individuals of the general population with complex needs	51%	75%	41%	56%	53%	27%
The model establishes care teams from primary, secondary and social providers to coordinate patient care	Individuals of the general population with multi-morbidity	47%	69%	53%	38%	35%	40%
The model provides interdisciplinary specialized treatment for opioid addiction	Individuals with opioid addiction	47%	69%	29%	50%	35%	53%
The model establishes care teams from primary, secondary and social providers to coordinate patient care	Individuals aged 65+ with long-term conditions	38%	56%	41%	25%	41%	27%
The model identifies individuals with complex health and social problems and provides case management based on individual care plan	Persons with multiple complex needs in the health and/or social domain	37%	44%	24%	38%	47%	33%
The model establishes a comprehensive information system of electronic health records for health and social care services	Every insured patients aged 65+	36%	63%	47%	19%	24%	27%
The model identifies individuals with high risk of hospital admission based on an initial assessment and then categorizes them into risk classes and subsequent case management tailored to the individual person	Patients aged 55+ with multi-morbidity and being at high risk for hospital admissions	22%	44%	24%	6%	12%	27%

Table 3
The calculated mean scores of the integrated care models regarding their relevance.

Model descriptions	Target population	Calculated mean (SD) score on relevance(high = 3, moderate = 2, low = 1, not relevant = 0)					
		Total sample	Country specific results				
			CRO	HUN	POL	ROM	SRB
The model establishes case management to manage patient pathways in secondary care	Oncology patients	2.62 (0.70)	2.14 (0.98)	2.71 (0.59)	2.69 (0.48)	3.00 (0.00)	2.47 (0.83)
The model coordinates the palliative care across inpatient care, home care and social care	Terminally ill patients with palliative care needs and their families	2.54 (0.73)	2.50 (0.73)	2.47 (0.80)	2.44 (0.89)	2.88 (0.33)	2.40 (0.74)
The model coordinates nursing care at home or at nursing homes after hospital-discharge	Elderly patients with multi-morbidity	2.51 (0.74)	2.38 (0.72)	2.47 (0.80)	2.56 (0.89)	2.82 (0.39)	2.27 (0.80)
The model includes developing individual treatment plans based on a comprehensive assessment of the individual and providing services with the integration of health and social care professionals at regional level	Individuals of the general population with complex needs	2.46 (0.74)	2.31 (0.79)	2.47 (0.80)	2.50 (0.52)	2.71 (0.59)	2.27 (0.96)
The model identifies individuals with need of elderly care and then provides nurse-led, tailored and multi-disciplinary home care	Elderly patients with multi-morbidity living at home	2.44 (0.82)	2.38 (0.81)	2.41 (0.87)	2.50 (0.89)	2.76 (0.56)	2.13 (0.92)
The model establishes care teams from primary, secondary and social providers to coordinate patient care	Individuals of the general population with multi-morbidity	2.40 (0.80)	2.31 (0.87)	2.41 (0.87)	2.50 (0.52)	2.41 (0.94)	2.33 (0.82)
The model establishes care teams from primary, secondary and social providers to coordinate patient care	Individuals aged 65+ with long-term conditions	2.40 (0.90)	2.13 (1.02)	2.41 (0.87)	2.56 (0.81)	2.65 (0.79)	2.20 (1.01)
The model provides support for substituting complex care from hospital to community-based services conducted with support of specialized professionals	Individuals of the general population with high risk for hospitalization	2.38 (0.83)	2.25 (0.86)	2.35 (0.86)	2.50 (0.52)	2.65 (0.79)	2.13 (1.06)
The model identifies individuals with high risk of hospital admission based on an initial assessment and then categorizes them into risk classes and subsequent case management tailored to the individual person	Patients aged 55+ with multi-morbidity and being at high risk for hospital admissions	2.37 (0.97)	1.81 (1.22)	2.47 (0.94)	2.63 (0.81)	2.82 (0.39)	2.07 (1.03)
The model establishes a comprehensive information system of electronic health records for health and social care services	Every insured patients aged 65+	2.32 (0.89)	2.25 (1.00)	2.12 (1.05)	2.50 (0.82)	2.59 (0.51)	2.13 (0.99)
The model implements digital health tools, which provide platform to exchange health information across health care providers	Individuals of the general population with complex needs	2.31 (0.88)	2.19 (0.75)	2.24 (0.97)	2.25 (1.06)	2.53 (0.87)	2.33 (0.72)
The model identifies individuals with complex health and social problems and provides case management based on individual care plan	Persons with multiple complex needs in the health and/or social domain	2.25 (0.96)	2.00 (1.10)	2.18 (0.95)	2.25 (0.93)	2.53 (0.87)	2.27 (0.96)
The model provides interdisciplinary specialized treatment for opioid addiction	Individuals with opioid addiction	1.91 (0.90)	1.81 (0.75)	1.76 (0.90)	2.00 (1.03)	1.94 (0.90)	2.07 (0.96)

had a mean calculated score over 2 (the score, which indicated moderate relevance of the need for further improving the integration of care).

In general, the country-specific mean scores showed similar patterns as for the total sample. The highest mean score was achieved by the model focusing on the managed care of oncology patients in Romania (all participants indicated high relevance), while the lowest mean score was observed for the model focusing on the interdisciplinary specialized treatment of patients with opioid addiction in Hungary. In Poland and in Serbia, all models had moderate to high relevance. In Romania and Hungary only one model had lower than moderate relevance (the model focusing on opioid addiction), while for Croatia this was the case for two models (the model focusing on opioid addiction and the model which ensures individual case management for patients aged over 55 with high risk for hospital admissions).

Table 4
Prioritizing barriers based on "impossible to solve" or "requires huge efforts to solve" responses.

Framework domain	Key barriers	Total sample	Country specific results				
			CRO	HUN	POL	ROM	SRB
Health and social care financing	Long-term financial sustainability of integrated care programmes	64%**	50%	71%	56%	65%	80%
Health and social care financing	National/regional funding system for integrated care models	60%**	56%	71%	44%	65%	67%
Service delivery	Integration between health and social care organizations and providers	58%**	63%	65%	56%	71%	33%
Workforce	Ensuring additional human resources: non-physicians	51%*	50%	71%	50%	35%	47%
Health and social care financing	Financial incentives to health and social care professionals for their additional roles	51%*	56%	59%	44%	29%	67%
Leadership and governance	Macro-level political support	49%	63%	47%	31%	59%	47%
Leadership and governance	Cooperation and communication across different health and social care service providers and institutes	49%	50%	71%	31%	47%	47%
Workforce	Ensuring additional human resources: physicians	48%	50%	76%	50%	24%	40%
Technologies and medical products	Integration of E-health tools used by patients into care process	47%	31%	71%	31%	65%	33%
Workforce	Acceptance of new professional roles and responsibilities by all health care professionals	47%	50%	71%	31%	29%	53%
Service delivery	Evaluation of providers' contribution to the overall care process	42%	44%	71%	31%	35%	27%
Health and social care financing	Patient co-payment to the integrated care services	42%	56%	41%	63%	6%	47%
Leadership and governance	Cooperation and communication across medical disciplines and sectors	41%	31%	53%	38%	47%	33%
Health and social care financing	Financial incentives for care providers to collaborate	40%	44%	35%	44%	18%	60%
Workforce	Formation of new professional roles for non-physicians	35%	31%	53%	25%	18%	47%
Service delivery	Physical proximity of care providers to each other, easily accessible by patients	31%	25%	41%	19%	53%	13%

**significant result with the chi-square goodness of fit test at $p < 0.001$ cut-off level ($n = 81$).
*significant result with the chi-square goodness of fit test at $p \leq 0.05$ cut-off level ($n = 81$).

Data in the Appendix II shows the ranking of the local relevance of integrated care models.

3.3. Critical barriers to the implementation of integrated care models

The prioritization of all potential implementation barriers is presented in Table 4 which includes all those barriers that were perceived as "impossible to solve" or "requires huge efforts to solve" by more than 50% of the respondents in any of the investigated country. Importantly while all five health and social care financing barriers were listed in the table, none of the information and research barriers were included. Furthermore, four workforce barriers were prioritized related to ensuring human resources (both physicians and non-physician) and related to new professional roles. Three service delivery and three leadership and governance barriers were also prioritized along with one barrier related to technologies and medical products (see Table 4).

Of the barriers listed in Table 4 the chi-square goodness of fit test reached statistical significance in five barriers, indicating strong opinion of the participants that these are critical implementation barriers. Three barriers were related to the health and social financing domain: long-term financial sustainability of integrated care programmes; national/regional funding system for integrated care models; and financial incentives to health and social care professionals for their additional roles. One barrier was related to service delivery: integration between health and social care organizations and providers; and one barrier was related to the workforce: ensuring additional human resources: non-physicians.

The Appendix III table shows all barriers according to the SELFIE Framework elements and includes the proportion of "impossible to solve" or "requires huge efforts to solve" answers from the survey.

4. Discussion

The interest of implementing integrated care programmes has been growing over the recent years as these could provide reasonable solutions to tackle health challenges such as the increased prevalence of chronic diseases and multi-morbidity [5]. However, it has been recognized that successful implementation is a highly complex and dynamic issue and the specific context is very important [7]. The corresponding literature on the factors that may result in barriers or facilitators of implementing integrated care captures this high complexity and provides the groundwork for our study as well [18]. Our study however, contributes to the current literature from two perspectives. First, it particularly examines CEE countries, which have been largely overlooked in the former studies. Second, we directly asked the opinion of local experts from this field representing five important stakeholder groups (payers, policy makers, professionals, informal caregivers and patients).

Although former studies suggest the lack of such initiatives in CEE countries [1], an unexpectedly high proportion of survey respondents reported that integrated care models, which were presented briefly in the survey, were already locally implemented in their countries. This finding might reflect that respondents interpreted an initial, low level of care integration as a positive case and as a key achievement towards integrated care in their country. This explanation is also highlighted by the apparent contrast between the high proportion of answers on having the integrated care models implemented and the reported great need for further integration of care. Most of the included models that were presented had high mean scores by the respondents regarding the need for improving the integration of care. This was observed not only for the total sample but for the individual countries as well. This finding indicates that although there are initiatives to improve the integration of care in the investigated countries, these are either in an initial stage or require further improvement.

Ranking the relevance of integrated care models (Appendix III) revealed some interesting cases for specific countries, most strikingly in case of the two highest ranked models, which could be explained by having a closer look at the specific country context. Examples of these cases can be best illustrated in Croatia and Poland. In case of the model which introduces managed care of oncology patients, results from Croatia were different from the other countries as the model was only ranked 8th while it was ranked first in all other countries. This can be explained by the fact that in Croatia oncology patients already have a well-coordinated fast access to the health care services due to program so-called "e-Ordering - Priority ordering of patients". This program was implemented at the national level in December 2017. As part of the program, the majority of the diagnostic examinations should be completed within a period of 7 days after request. Further treatments are designed and managed according the patients' needs [24]. In case of the model which facilitates the integrated care of patients with palliative needs, results from Poland were different compared to the other countries as it was only ranked 10th while it was ranked first or second in the other countries. This reflects the fact that palliative care in Poland has reached a more advanced stage compared to other CEE countries. According to the data presented in the Atlas of the European Association for Palliative Care, availability in Poland is the best in this part of Europe. Comparing Poland with Western European countries, the total number of units providing assistance in the field of palliative care is similar [25].

The other key result of our study is that from several previously identified barriers of implementing integrated care models, the respondents identified those ones which were perceived to be the most difficult or even impossible to solve in the CEE region or in specific CEE countries. This process was recommended to be a key initial step of during the transferability assessment of integrated care models [26]. When these are identified, tailored solutions can be explored via stakeholder consultations to overcome the most important barriers. These steps of the feasibility assessment on integrated care were conducted for instance in Hungary in the field of rare diseases [27].

It is important to note that whilst the majority of key barriers also exist outside of CEE, our objective was to explore the relative importance of these barriers in the CEE settings, a lower income region within the European Union. Results indicate that there are important barriers in all domains of the SELFIE framework. Most barriers in the financing domain were graded relatively high, while most barriers in the information and research domain were graded relatively low, i.e. easier to be solved. Therefore, prioritization across the domains shows that in CEE countries the financing of integrated care models seems to be the most critical issue with multiple corresponding barriers. This is clearly not only a CEE phenomenon as funding was also a widely acknowledge barrier in the literature as well [6,8,9,11]. Furthermore, some particular barriers of the workforce and service delivery were also found critical in the investigated CEE countries (i.e. lack of integration between health and social care providers and insufficient availability of human resources). Even if there are similarities of the reported barriers between EU-15 and CEE countries, EU-15 countries have broader experiences in overcoming these barriers as demonstrated by the high number of ongoing integrated care programs [1], while the implementation of integrated care initiatives are still in an early phase in CEE.

Our study has several important limitations to consider, which could influence the generalisability of the findings. First, during the design of the survey we had to include only short descriptions of the integrated care models in order to keep the survey in a manageable scope. This may have resulted in oversimplification of the presented models that eventually might have contributed to the high proportion of survey respondents reporting that corresponding integrated care models were already implemented in their countries. The answers were possibly related to similar initiatives and not to identical integrated models. Second, as mentioned earlier, the understanding of integrated care might be different for different stakeholders. To enhance the common understanding, standardized definitions were included in the survey and local primary contacts translated the survey to local language and shared the translation with the contacted experts when necessary. Third,

the sample size of the survey was moderate and not based on prior statistical power estimates. The invited experts were not randomly selected, but a convenience sample of local stakeholders with a particular interest in integrated care was enrolled. Hence, the representativeness of the survey findings (especially the country-specific subgroup analyses) is indefinite.

5. Policy recommendation

The importance of integrated care will increase in future health systems due to aging populations and increasing numbers of patients with chronic multimorbidity. Our study has implications for CEE policymakers and other stakeholders aiming to improve the healthcare system by facilitating the integration of care in their countries. In countries with limited resources, adapting and transferring an existing integrated care model with proven benefits in a foreign country makes more sense than conceptualizing a new domestic model from scratch. The first step for CEE countries is to identify potentially transferable integrated care models from Western European countries in their own priority areas. Our study provided a short list of models that were considered highly relevant for the investigated countries by a wide range of relevant stakeholders and experts. The second step is to identify and prioritize critical barriers and potential facilitators that enable project teams to develop an implementation strategy for adapting successful integrated care models from other countries. Our findings suggest that the lack of dedicated financing schemes to ensure long-term sustainability the insufficient availability of human resources and the lack of integration between health and social care organizations and providers were most critical issues to be solved for CEE countries.

Declaration of Competing Interest

The authors have no competing interests to declare.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.healthpol.2022.08.012.

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