



# Conceptual model of collaborative pharmaceutical practice in healthcare and social care for the elderly

## Konceptualni model kolaborativne farmaceutske prakse u zdravstvenoj i socijalnoj zaštiti starijih osoba

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### Abstract

**Background/Aim.** In the new millennium, the focus has been increasingly shifting to optimisation by enhancing the collaborative (common, joint) practice of healthcare professionals, for the purpose of achieving effectiveness and efficiency. Pharmacists are the last link in the healthcare services providing chain. The aim of this study was to present a critical analysis of the published models of the collaborative pharmacy practice along with development of a conceptual model of collaborative pharmacy practice in the healthcare and social care for the elderly population. **Methods.** Using two search algorithms that were created to search articles published in English, a comprehensive search of the bibliographic databases Web of Science and PubMed was undertaken (up to June 2015). Afterwards, articles were independently assessed by two authors, against predetermined inclusion and exclusion criteria. **Results.** Regulations on pharmacy collaboration are present in many developed countries. However, the implementation of the collaborative practice is still not widespread. Therefore, a conceptual model of the collaborative healthcare and social care of the elderly provides an insight into a multi-layer structure that has to be established in order to achieve a functioning system of the collaborative healthcare practice. The model concluded that aspirations towards teamwork, communication and above all – the system of regulators and payers, who acknowledge a healthcare collaboration, are crucial for establishment of a collaborative healthcare practice. **Conclusion.** This research provides a tool in the form of a guide and check-list for decision-makers and policy-makers in order to achieve the preferred effects generated from the collaborative practice by selecting the models and activities that need to be undertaken for implementation of the collaborative healthcare and social care of the elderly that is best suited for their country.

### Key words:

delivery of health care; pharmacists; interdisciplinary communication; aged.

### Apstrakt

**Uvod/Cilj.** U cilju postizanja efektivnosti i efikasnosti, u novom milenijumu se sve više govori o optimizaciji zdravstvene zaštite, kroz jačanje udružene prakse zdravstvenih profesionalaca. Farmaceuti predstavljaju poslednju kariku u lancu pružanja zdravstvene zaštite. Cilj ove studije bio je da prikaže kritičku analizu publikovanih modela kolaborativne farmaceutske prakse, kao i razvoj konceptualnog modela farmaceutske kolaborativne prakse u zdravstvenoj i socijalnoj zaštiti starije populacije. **Metode.** Koristeći dva algoritma koja su kreirana za pretragu, pretraženi su radovi (do juna 2015. godine) iz bibliografija elektronskih baza podataka Web of Science i PubMed. Nakon pretrage, radovi su nezavisno procenjeni u odnosu na predefinisane kriterijume za uključanje i isključenje, od strane dva autora. **Rezultati.** Regulativa o farmaceutskoj kolaboraciji je zastupljena u mnogim razvijenim zemljama. Međutim, implementacija kolaborativne prakse još uvek nije široko rasprostranjena. Stoga, konceptualni model kolaborativne farmaceutske prakse u zdravstvenoj i socijalnoj zaštiti starijih osoba obezbeđuje uvid u višeslojnu strukturu koja treba biti uspostavljena kako bi se osigurao funkcionalni sistem kolaborativne zdravstvene prakse. Model zaključuje da su aspiracije prema timskom radu, komunikacija i nadasve sistem regulatora i platioca koji prepoznaju zdravstvenu kolaboraciju, ključni za uspostavljanje kolaborativne zdravstvene prakse. **Zaključak.** Ovo istraživanje donosi alat u obliku vodiča i ček-liste za donosiocima odluka i regulativa, kako bi se istim omogućilo da postignu preferirane efekte prikupljenih kolaborativnih praksi, kroz označavanje modela i aktivnosti koje treba preduzeti za implementaciju one kolaborativne zdravstvene i socijalne zaštite starijih osoba koji su najprimenjiviji u njihovoj zemlji.

### Ključne reči:

zdravstvena zaštita; farmaceuti; komunikacija, interdisciplinarna; stare osobe.

## Introduction

Despite the common interest in optimising the work and minimising the potential risks to patients, general practitioners and pharmacists generally strived to work independently with a minimal inter-professional contact in the past<sup>1</sup>. Furthermore, the relationship between the general practitioners and pharmacists was often described as being historically conflicting and rivalling, with major tensions associated with the commercial aspect of the open-type pharmacies<sup>2</sup>.

Some papers<sup>3-9</sup> emphasise the need for communication and collaboration among healthcare professionals, for the purpose of ensuring much needed continuity and coordination in healthcare, all towards securing the most favourable outcome for patients. Taking into account the presence of a growing ageing population on the global level as well as the increased health and social problems the elderly are facing, it is suggested that future efforts of the healthcare and social care systems should be focused on ensuring the most adequate meeting of growing demand heading their way<sup>10</sup>. There is a consensus among the authors dealing with social pharmacy of the idea that healthcare and social care systems should be approached holistically. Similarly to such a paradigm, there is indeed an increase in the importance of promotion and enhancement of the models of collaborative healthcare and social practice, with particular focus on the elderly, as a particularly vulnerable group. In this respect, in the past ten years and simultaneously with improvement of the collaborative practice, there was a number of studies published<sup>5-9</sup>, which have attempted to explain healthcare and social dimensions of the collaborative practice in an insufficiently empirical manner, according to some authors.

Alongside with increased number of publications which have their focus on the healthcare collaborative practices, there was an increased number of attempts to apply the ideas given in aforementioned publications. In Serbia, for example, some pharmaceutical services described in the Regulation of healthcare services nomenclature at primary healthcare, should be provided in collaboration with physicians<sup>11</sup>. Some of those services are: informing healthcare professionals by pharmacist about rational prescribing and use of medications and medical devices according to approved indications, current therapy guidelines, new knowledge about side effects, or market withdrawals of medications and medical devices, pharmaceutical waste collection and classification, etc. However, a payment model for appropriate reimbursement of pharmaceutical services still does not exist in Serbia.

When considering the collaboration of healthcare and social care systems intended for the elderly, it is impossible not to focus, first of all, on the inter-professional collaboration within the system and then between the two systems specified. Due to the fact that collaboration between healthcare and social care systems is covered by the literature (from the healthcare towards the social care system), in this paper, the emphasis will be placed on the healthcare practice first, to be followed by the healthcare and social care collaboration practice.

In 2003, the Ministry of Health of England initiated that issue and started devising the collaborative practice, with a vision that an open-type pharmacy should be recognised as an integral part of the National Health Service (NHS), and that pharmaceutical services should be better integrated in business operations of other providers of services belonging to the primary level of healthcare – the physicians in particular<sup>12</sup>. In 2005, that was followed by an introduction of conceptual changes for pharmacists, which were aimed at extending the role of pharmacists by ensuring their greater involvement in consultation services, which included the co-operation with physicians<sup>13</sup>. Then in 2008, the Department of Health in England stated that collaboration between pharmacists and physicians had not been developing at the expected pace and investment of additional efforts would be required in the future in order to ensure the proper course of the collaborative concept<sup>14</sup>.

The collaborative system of healthcare is focused on a team approach to providing healthcare services to individuals and their families, which would eventually result in a higher level of continuous healthcare<sup>15</sup>. Its roots and development go back to the period of World War II, when healthcare professionals cooperated with each other and joined efforts to ensure proper treatments and cure for wounded soldiers<sup>3</sup>. Nevertheless, the adoption of this approach was delayed, due to an absence of laws and regulations, resistance of healthcare providers who felt threatened as well as a lack of any sort of compensation/reimbursement to third parties in such a healthcare system.

In Denmark, decision-makers and representatives of the country's authorities have assumed a much needed political initiative to integrate all stakeholders within the system of social care and healthcare for the elderly in the last ten years. The political initiatives resulted in concrete administrative regulations. Such policy aims (emphasised by focusing the overall systemic efforts on the care for the elderly) represents the integral structure of reforms in the local community (municipalities). Described reforms included evaluation of the health and social status of elderly people in their homes, which was carried out by interdisciplinary teams, which would then initiate some improvements to the existing situation after the evaluation [Patient Centred Medical Home (PCMH) a collaborative practice model]. The efficiency of the activities specified above confirmed the necessity of a joint, collaborative action of both healthcare and social sectors, for the purpose of enhancing an adequate healthcare and social care<sup>5</sup>. As soon as the evidence started suggesting the interrelation between the absence of a continuous, coordinated and collaborated healthcare and negative outcomes, the collaborative practice among the healthcare workers of different professions has become a national target. A new, team-based approach connects healthcare professionals such as physicians, pharmacists and nurses. This approach of interdisciplinary collaborative teams provides the availability of patient information to all healthcare workers<sup>16</sup>. That way, they become aware of the overall expectations of patients in terms of the most positive outcome as well as of the expect-

tations of other healthcare employees, to provide, altogether, the full healthcare services and monitor them within the system.

The previous examples and theoretical considerations of issues of collaborative pharmacy practice in a modern society are very challenging to researchers, requiring a critical approach in the analysis of the published models of collaborative pharmacy practice. The purpose of this paper is to give a critical analysis of the proposed models of collaborative practice in the healthcare of the elderly population. Additionally, the paper contains a proposed conceptual model of the collaborative pharmacy practice in healthcare and social care of elderly population.

## Methods

A comprehensive search of the bibliographic databases Web of Science and PubMed was undertaken (up to June 2015). Two search algorithms have been created by using combination of Medical Subject Headings (MeSH) and free-text with following Boolean operators: i) [collaborative \*near/5 model\* AND healthcare (MeSH)] OR [physician (MeSH) AND pharmacist (MeSH)] AND [social care AND healthcare (MeSH)] AND [elderly (MeSH) OR older people] OR [collaboration and \*geriatrics\* (MeSH)]; ii) [collaboration AND pharmacist (MeSH)] AND [physician (MeSH) OR general practitioner] AND (model OR relationship).

The desk analysis was used to search for all English language articles using the aforementioned databases. In order to select all potentially eligible publications, two reviewers (VOI, VM), assessed independently their title, abstracts and full text against following predetermined inclusion and exclusion criteria (Table 1).

After independent reading of two authors, records that did not fit inclusion and exclusion criteria were discarded. Any disagreement between reviewers was resolved by discussion and consensus.

The literature search (Figure 1) initially yielded 676 articles (Web of Science, n = 201; PubMed, n = 475). After removing 108 identified duplicates, 568 potentially relevant studies were remained for further screening. After screening, 535 publications were excluded based on their title and abstract. There were 7 publications that had unobtainable full copies. After 26 full copies assessed for eligibility and 7 publications additionally added through manual search of refer-

ence list, 23 publications were excluded after full copy screening. Once being assessed against inclusion and exclusion criteria, 10 articles remained.

Exploration and consideration was done in accordance to its contribution to development of the collaborative healthcare models: Disease Management (DM), Medication Therapy Management (MTM), PCMH and Accountable Care Organisations (ACO). A dynamic conceptual model of collaborative health care and collaborative pharmacy practice in healthcare and social care of the elderly was generated for better understanding of positive and negative effects on collaborative healthcare models, and for creating a guidebook for implementation of collaborative models into a healthcare system.

## Results and discussion

### *Development of a conceptual model of collaborative healthcare and collaborative pharmacy practice in healthcare and social care for the elderly*

The term of collaborative pharmacy practice is defined in different ways. As pharmacists are focused mainly on administering medications prescribed by the physicians, it can be said that the collaborative practice between pharmacists and physicians (and vice versa) is only sporadic, until the point when the patient's security and positive outcomes became a dominant focus of the entire healthcare system. Being focused on medications is in the nature of the pharmacy profession, and that very focus has led to defining and creating examples of the collaborative pharmacy practice oriented towards the collaborative practice between physicians and pharmacists.

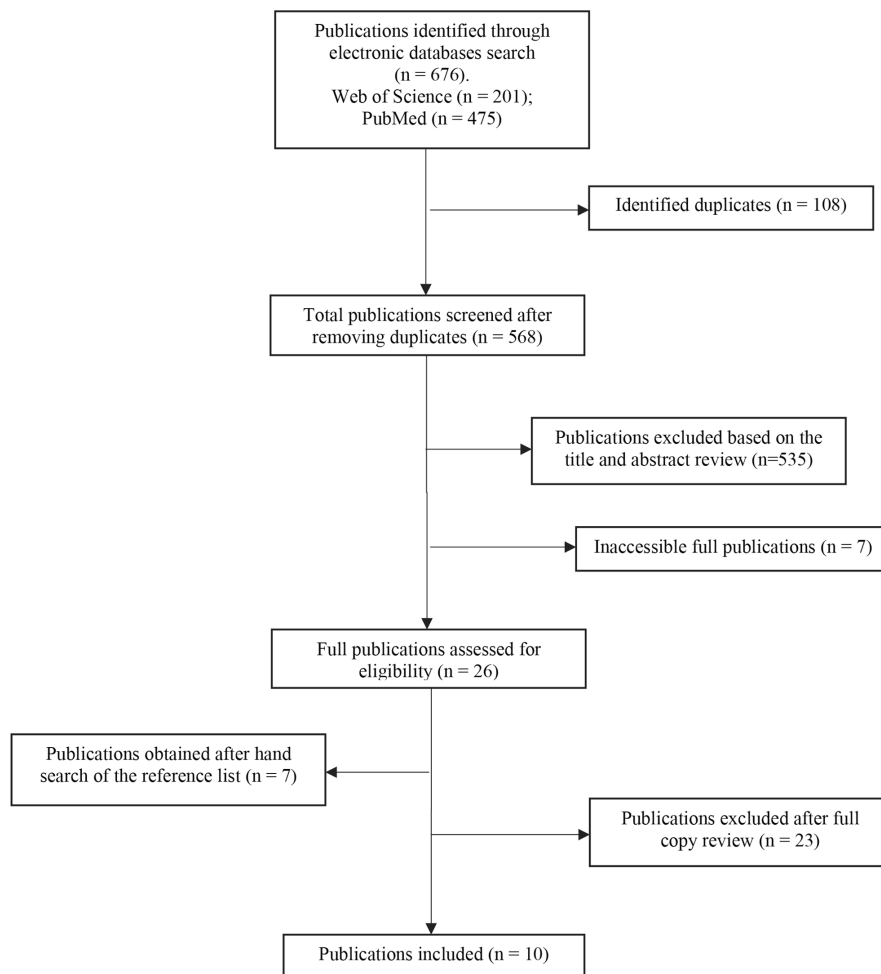
The collaborative practice that also involves pharmacists gradually gained impetus with support of regulatory bodies and positive evidence. The Collaborative Practice Act (CPA), extending to 46 USA states, allows pharmacists to start a voluntary collaboration with physicians and other healthcare service providers, in order to be able to provide a full set of healthcare services to patient<sup>17</sup>. In most US states, there are no special or additional requirements for joining that sort of agreements, besides owning a licence. Still, in several states of the USA, the American Society of Health-System Pharmacists (ASHP) requires a certain number of years (years of service) spent working at a clinic or a similar health facility upon finalising the licencing procedure.

**Table 1**

### Inclusion and exclusion criteria

Inclusion criteria:		
i.	Language:	English.
ii.	Type of study:	Qualitative and quantitative study.
iii.	Processes analysed:	Inter-professional work, collaboration, attitudes towards team work, collaborative models, payment models and systems, system and legislative barriers, healthcare and social care services for the elderly.
iv.	Team structure:	At least one pharmacist involved in a multidisciplinary team or collaborative process.

Exclusion criteria: Studies focused solely on the quantification of the inappropriate prescribing of drugs and incidence of dispensing errors.



**Fig. 1 – Literature search pathway.**

The collaborative practice of pharmacists and physicians is focused on a medication therapy management, therapy adjustment, patient consultation, and eventually, identification, elimination and prevention of any interactions between medications or a drug-food interaction. Most forms/types of the collaborative practice involve pharmacists cooperating with one or several physicians, in the clinic/dispensary or hospital practice, i.e., some form of clinical healthcare or similar activity. Pharmacists in other countries have arrangements (agreements or contracts) with physicians similar to the CPA; in Quebec, Canada, for example, pharmacists are allowed to initiate and change the therapy prescribed by a physician as well as to demand laboratory analyses, if considered necessary<sup>6</sup>. Hence, the collaborative pharmacy practice may be understood as a physicians and pharmacists team gathering primarily (whether collocated or not) around the same goal, i.e., the best possible outcome for the patient. Before establishing any collaborative practice, healthcare professionals certainly need to show their willingness to overcome the traditional communication and inter-professional barriers (by changing their attitude about the exclusive professional work independence). It is also necessary to have a legislative, political and economic

will to support such inter-professional association (by developing a legislative and economic infrastructure through implementation of regulations and payment modalities).

Due to the fact that the literature<sup>7-8</sup> present the four most represented models of healthcare and social collaborative practice, it is relevant to start analysing them in order to see the advantages and limitations of the described models. The static nature of these models is evident from the very beginning. Although Bradley et al.<sup>7</sup> explained in detail all the phases and activities that precede collaboration, very little attention was paid to the dynamics of collaborative relations through particular collaborative models that were already operational in the collaborative practice of several developed countries. In addition, visibility of individuals (patient and healthcare professional's point of view) in collaborative models is quite infrequent, despite a growing number of authors who have recently described four most represented models of the collaborative healthcare practice (the MTM, primarily). In this regard, our team of authors agrees that it is necessary to conduct a further analysis of the four most operative models of healthcare and social practice from the perspective of the service provider, as well as the perspective of patients/elderly people and the system/payers.

It may be noted in Tables 2a and 2b that there are positive and negative aspects in each model of the collaborative practice as well as different aspirations of the involved participants towards team pooling. Harmonisation of diversity of aspirations among different participants in a collaborative practice as well as development of solutions based on compromise are the greatest challenges in organising the collaborative models in the practice of one country. Accordingly, the significance of understanding of each model by different providers of health and social care services is equally invaluable as by patients/elderly people and system/payers. In addition, the aforementioned models of collaborative practice in the healthcare and social care of elderly people are organised at different locations. Therefore, it would

be beneficial to designate the places, where particular models of collaborative practice are organised, or locations and health facilities a patient needs to visit in order to receive the healthcare (or healthcare and social care services) within a collaborative practice model. Thus, new questions have emerged as well as the willingness to figure out the adequate responses after conducting a detailed analysis of the existing models. This ambition resulted in creating an idea and a need for conceptualising a new model, which would enable providing clear guidelines for the planned, gradual introduction of collaborative models into a practice of any country, by ensuring a profession-based connection of collaborative models and creating a dynamic model.

Table 2a

**Analysis of the most represented healthcare and social collaborative practice models – perspective of service providers**

Collaborative practice models	Scope of the model	Physician	Pharmacist	Social worker
ACO (organisations of healthcare providers)	+	Organisations of healthcare providers that agree on the payment based on the performance of services provided. Such organisations focus on the most positive outcomes for their patients and function within the Medicare programme. Most optimal outcomes for the patient. Shared responsibility.	Acknowledgment of all additional services provided to the patient.	Involvement of a third party for payment. Private funds.
	-	More time consuming. If the level of performance is not met, payment is disputed.	Due to shared responsibility, the setting is team-oriented, but more effort invested in own services. Team autonomy in part.	Model not available to all patients. Lesser involvement of social workers.
PCMH (healthcare services provided at patient's home)		Focused on a team, collocated therapy for chronic diseases. Developed as a result of a lack of physicians. Includes teams composed of physicians, pharmacists, social workers, nurses, carers, nutritionists, etc. Provides outpatient services mainly.		
	+	Increased trust in colleagues owing to the team spirit. More optimal outcomes.	Increased quality of the provided service through a holistic approach to the patient's condition.	High and direct engagement of social workers. Assessment of the social status.
MTM	-	Necessity of having a clear plan for service provision (according to items on the list).	Visiting patients on site. Loss of time. Necessity for recognising the model by the state programme.	Higher patient selectivity compared to the social status.
	+	Delegating responsibility and trust to the pharmacist.	Therapy management for several chronic diseases. Person in charge of therapy prescription. Respect and trust.	Higher savings for the social care system.
DM	-	Taking away a part of autonomy. Frequent collocation.	Payment models and economic acknowledgement of additional services.	Non-inclusion of social workers.
	+	Education of patients about medications, continuous monitoring (by the physician and pharmacist) of patients with highly prevalent chronic conditions; in case of several treatment modalities; a possibility of self-care; carrying a significant economic burden. Multiway communication.	Transfer of patients' education to pharmacists.	One chronic disease. Patient education. Enhancement of the outcome.
	-	Complexified communication.	No possibility to request further analyses and prescriptions.	Non-inclusion of social workers.

ACO – Accountable Care Organisations; PCMH – Patient Centred Medical Home; MTM – Medication Therapy Management; DM – Disease Management.

Table 2b

**Analysis of the most represented healthcare and social collaborative practice models  
– elderly and system perspective**

Collaborative practice model – elderly	Scope of the model	Patient/elderly people	System/payers of services
ACO (organisations of healthcare providers)	+	Organisations of healthcare providers, who agreed on the payment based on the performance of services provided. Such organisations focus on the most positive outcomes for their patients and function within the Medicare programme. Full healthcare service in one place. Plenty of time is dedicated to patients.	Directing the costs of system to a third party.
	-	A small number of patients are able to afford this type of healthcare.	It is necessary to include the third party as the payer, i.e., private funds.
PCMH (healthcare services provided at patient's home)	+	Focused on a team, collocated therapy for chronic diseases. Developed as a result of a lack of physicians. Includes teams composed of physicians, pharmacists, social workers, nurses, carers, nutritionists, etc. Provides outpatient services mainly. Patients is able to receive the full healthcare and social service at their home.	A holistic approach to the condition of the patient reduces the costs by decreasing the likelihood of administering the wrong therapy.
	-	May disturb the peace and privacy of other tenants.	Increased costs for the system. Work of the organisation gets complicated and travel costs are higher.
MTM	+	Medication Therapy Management including greater involvement of pharmacists in patient's therapy, both in pharmacies and on site. It includes: analysis of medication therapy, pharmacotherapeutic consultation, anticoagulation therapy management, immunisation, health and wellness programmes. A patient does not have to visit a physician to get the prescription for a chronic disease therapy.	Reducing the workload of physicians who are often unavailable. Reducing the time and procedure for receiving the appropriate therapy.
	-	Possible non-determination of the designated pharmacist who would monitor the patient's condition for a longer period of time.	More complicated payment and valorisation of the additional work.
DM	+	Education of patients about medications, continuous monitoring (by the physician and pharmacist) of patients with highly prevalent chronic conditions; in case of several treatment modalities; a possibility of self-care; carrying a significant economic burden. Multiway communication. Patients are provided with the necessary education on diseases at the pharmacy.	Reducing costs for an organisation and making appointments. Increase in potential loss of earnings for employees due to long waiting periods at the physician's.
	-	Traditionally, patients have more confidence in physicians. Ensuring one's privacy.	The system is generally not familiar with provision of these additional services by pharmacists.

**ACO – Accountable Care Organisations; PCMH – Patient-Centred Medical Home; MTM – Medication Therapy Management; DM – Disease Management.**

*Consideration of the proposed conceptual model of collaborative healthcare and pharmacy practice in elderly healthcare and social care*

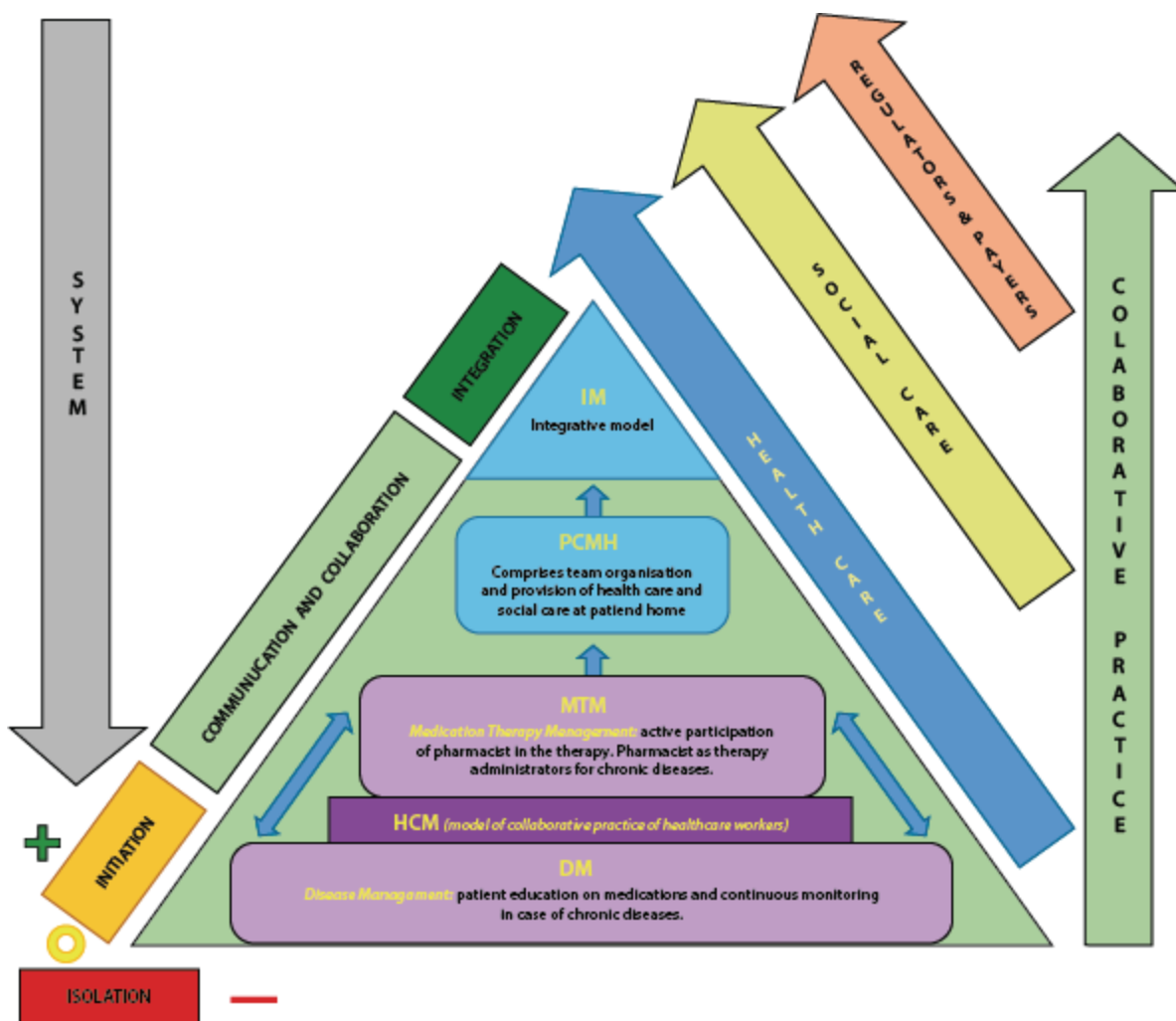
The conceptual model presented in Figure 2 suggests a holistic approach to the implementation of collaborative models that must be considered in a multi-way manner where each phase represents the activity already completed in previous phases. Therefore, the very analysis of the pro-

posed conceptual model should be approached from all directions and in a multi-way manner, representing the natural dynamics of the system. Certainly, it should be emphasised at the very beginning of the analysis that the system of healthcare and social care could still function traditionally independently. In such case, any form of collaboration, in terms of its continuity and planned organisation, is actually made impossible. However, it might still be possible for a physician to call a pharmacist by the phone for an eventual

consultation regarding a particular medication, respecting his/her expertise in pharmacology. Nevertheless, that case does not constitute a form of collaborative practice, but actually a traditional isolated form of the healthcare practice. This case is presented in the bottom left corner of the pyramid in Figure 2. It represents a negative value (absence of a collaborative practice), if the pyramid is considered a coordinate system. Anything occurring prior to the origin is a number of preliminary activities that need to be undertaken, with a clear intention of having a collaborative association for enabling a collaborative practice to begin with. More details on the preliminary activities of collaboration were discussed by Bradley et al.<sup>7</sup>, so the proposed conceptual model shown in Figure 2 does not describe them. Traditional isolation at the ground zero is followed by an initiation phase (provided there is a team cooperation aspiration). The initiation phase continues further and coincides with the phase of communication and collaboration. The highest level com-

prises the phase of integration of all providers of the healthcare and social care services and the system/payers.

Disease Management (DM) provides education to patients regarding medications and continuous monitoring of chronic diseases. It may be organised within a pharmacy, and represent a healthcare collaboration only. Although regular activities of pharmacists include consultation services about medications, DM comprises certain monitoring activities and supervision of chronic conditions of a particular patient. Educational seminars could also be organised in a planned manner, for a particular type of chronic disease on pharmacy premises, in a form of informative and confidential workshop. The same form of organisation may be used within a health centre, i.e., at the primary level of healthcare. Collaboration in disease management often includes delegating traditional activities of physicians to pharmacists (monitoring of chronic diseases), or, on the other hand, a joint association for organised consultations.



**Fig. 2 – Conceptual model of collaborative healthcare and pharmacy practice in healthcare and social care for the elderly.**

**IM – Intergrative model; PEMH – Patient-Centred Medical Home; MTM – Medication Therapy Management; DM – Disease Management; HCM – Hospital Case Management.**

Medication Therapy Management (MTM) is certainly the most thoroughly described model of the collaborative healthcare practice in relevant literature. MTM ensures an active participation of pharmacists in a therapy. Implementation of this model includes establishment of a very high level of inter-professional communication. It often happens that a pharmacist becomes an administrator of medications for a chronic disease (when the complete therapy management may be performed by a pharmacist, and following the diagnosis established by a physician) after taking an additional year of education at a faculty of medicine. In this model of the collaborative healthcare practice, a significant responsibility is given to the system/payers, which is/are required to establish a functional payment system for additional services provided by the pharmacists. If the very MTM is considered, patients could encounter this model at the pharmacy. In this phase of explanation of the collaborative model, it should be noted that MTM may be an integral part of Patient Centred Medical Home (PCMH) and a part of an Integrated Model, while the MTM would always include DM as well. Due to such a connection between a disease management and medication therapy models, these two constitute the hospital Case Management (HCM) model of collaborative practice of healthcare workers, because they are allowed to organise themselves independently from the social workers.

PCMH is a model of team organisation and provision of healthcare and social care services at patient's homes. This form of practice is mainly focused on the elderly, those with difficulty walking and/or persons whose homes are located far away from the healthcare facilities (primary or secondary level). Patients/elderly people may use this model in their own homes, when a collaborative team visits them upon confirming the visit. It is obvious at this level that this model includes social care for the elderly in addition to the healthcare (as shown in a pyramid in Figure 2). Besides the healthcare workers (e.g.: physicians, pharmacists, nurses, therapists, etc.), the PCMH model teams also involve the social workers, who visit the homes of elderly persons and provide them with a range of necessary healthcare and social services as well. This model includes both MTM and DM.

The Integrative Model (IM) is a model with the highest level of collaboration. Actually, the IM is generally used as the Accountable Organisations (ACO) model, functioning within the Medicare. In addition to the health and social care, this level of collaborative practice includes a payer, i.e., the third party (mainly private funds) and naming it an integrative model was quite logical. The patient goes to an organisation – a health facility where he/she is provided with a full collaborative service. The model relies on a high level of communication, often supported by information systems, which connects all members of the team, who keep a joint record on the patient/beneficiary.

The conceptual model comprises both: pull and push strategies, or learning about the system needs for collaborative models and their support as well as a promotion of collaborative models and establishing positive regulatory provisions, etc. In this respect, it is obvious that the system func-

tions in a multi-way manner, but primarily from the top of the pyramid (regulations and regulators) towards the bottom of the pyramid as shown in Figure 2.

#### *Stimulations and obstacles to collaborative practice in geriatric care*

Individual ageing is a natural and inevitable process that we all face constantly. Population ageing, unlike the previous one, is a unique phenomenon in a demographic history of mankind caused primarily by industrial, sexual revolution and absorption of women into the labour markets. Its ultimate outcomes, increased early childhood survival combined with the extended longevity in most nations jointly contribute to the growing share of elderly citizens in most contemporary societies<sup>18</sup>. Those demographic trends of further population ageing are present in European countries, and represent one of the greatest challenges encountered in the healthcare, social and economic systems of those countries. According to the Eurostat<sup>19</sup> information from 2014, the population above the age of 65 would increase approximately 50%, from 18.2% at the time (data from 2013) to 28.1% by 2050. In this respect, the share of the working-age population would also change, and thus, according to the current trends, by 2050, the ratio between the working-age population and population above the age of 65 would decrease from the current rate of 4 : 1 to 2 : 1<sup>19</sup>. Therefore, in addition to a higher life-expectancy for the population<sup>20</sup>, the age limit for working-age population would also change, and so the healthcare system for the elderly would have to operate at a higher system performance level<sup>21</sup>. This situation puts a positive pressure on the healthcare and social care systems regarding developing new and innovative models to be able to adequately respond to growing demands set before the healthcare and social care systems for the elderly. Taking into account that visibility of older people in rural area is even lower than the visibility of older people in urban areas, which is correlated with higher depression of older people in rural than in urban areas<sup>22</sup>, it is highly important to achieve functional MTM collaborative practice, especially in rural areas. Due to that, a holistic approach to perceiving the problems shared by the aforementioned systems produced several collaborative and inter-professional models of pharmacy practice within the healthcare and social care for the elderly.

Collaborative practice in the field of geriatric care takes place in most cases only upon establishing some of the healthcare collaborative practice models as described above. Therefore, it should not come as a surprise that only few papers discuss this topic, although the importance of collaboration in geriatric care is unquestionable. The paper by Young et al.<sup>23</sup> is listed in the literature as a reference paper for establishing the foundations and guidelines for a further research into the problem of collaboration in the field of geriatric care. Young et al.<sup>23</sup> provided their contribution to the given sensitive issue by summing up all the stimulating and restricting factors encountered by the collaborative practice in the field of geriatric care.



## Conclusion

The proposed collaborative practice model integrates dynamically the most represented models of the collaborative practice in the healthcare and social care for the elderly, providing a new insight into the described models from the perspective of service providers, patients/elderly people and systems/payers. Additionally, it is necessary to ensure understanding of multi-way relations within collaborative practice models (with healthcare and social care systems both of the payer and the regulator, as active participants in the background). Thus, a conceptual model should be considered prior to the actual implementation of the model of the collaborative practice in the healthcare and social care for the elderly, within the system of a country, in order to be more certain about selecting the models and activities that need to be undertaken in order to achieve the preferred effects generated from the collaborative practice.

If one considers the implementation of a collaborative model of the healthcare and social care practice by focusing on the elderly, the course of action should be based on an efficient overcoming of challenges as well as the establishment of a primary model of Medication Therapy Management in

phases. Subsequently, the collaborative practice should be extended to include the implementation of the PCMH model which is the most significant model for the elderly population. Certainly, the basis for each model of collaborative practice focusing on the elderly is the pharmacy collaborative practice. That is why the pharmacy collaborative practice is the unavoidable, initial and conditional (*conditio sine qua non*) basis for the collaborative practice model focusing on the elderly.

Finally, it may be useful to conclude once again, that by inclusion of a positive regulatory pressure, together with an efficient implementation of the payment model for the collaborative pharmacy practice, all other obstacles on the path of implementing a collaborative pharmacy model should be overcome, taking into account the positive attitude towards the collaborative practice shared by a society, healthcare and social care professionals.

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