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Universitatea Transilvania din Braşov
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TEZĂ DE ABILITARE

HABILITATION THESIS

Titlu: Dezvoltarea serviciilor de ingrijiri paliative in Romania pe baza modelului OMS de sanatate publica

Title: Development of Palliative care services in Romania using the WHO public health model approach

Domeniul: MEDICINĂ
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Section 1. ABSTRACT

Summary

My professional, academic and scientific activity, in the period that followed the PhD thesis until present, belongs mainly to the field of palliative care. This new emerging domain in the field of medicine, is an important one especially in our society where chronic diseases are the prevalent pathology and are linked with considerable suffering in the physical, psychosocial and spiritual domain.

As a champion of the development of palliative care in Romania I choose the public health model approach for developing palliative care in the country and in the region. As a result my clinical, educational and scientific endeavor was focused on 3 main directions: service development, education and drug availability (especially for pain medication)

In the service development area, the research focus was on evidence-based modalities for developing in the public health care system of integrated palliative care services at basic and specialized level. As oncologist I started delivering palliative care for cancer patients in the community and I researched new modalities to bring care available to cancer patients in all the locations. In my habilitation thesis I present the research done in development of a basic palliative care model for cancer patients in the community under PF05 funding where I was both researcher and project lead. The results of this research have generated policy change and incorporated in the new Health Minister order 253/2018 regulating of palliative care service development and functioning in Romania. The research done on developing basic palliative care in the cancer centers has shown several gaps and unmet needs for cancer patients. We have produced and validated through research simple instruments to be used for assessment and protocols for clinical care but the impact was lower because of the bureaucracy and routines in these institutions.

For non-cancer patients (heart failure and COPD) my research was focused on understanding the right moment for starting palliative care, eventually highlighting screening tools, the existing needs and the cost-effective way of delivering palliative care services. The results of the research show that prognostication tools are uncertain, that the start-up of the services should be linked with the needs and that the cost-effective ways of delivery of care are homebased palliative care services initiated once the organ failure is diagnosed plus nurse led monitoring or imbedded outpatient clinics

In order to ensure service continuity of service public funding is needed. I embarked on health economics research although this was out of my comfort zone. I undertook a research project on developing cost units and costing frameworks for palliative care services in inpatient units and in the community and calculated unit cost for these services. The work was used further in advocacy and led to inclusion of funding of home-based palliative care services from the national insurance health care fund.

For the drug availability domain, I did not discuss in my thesis the scientific work done previous to the PhD and published in Lancet. Here I focused instead on evaluating clinical practice in using NMDA antagonists for pain treatment and the links between pain and depression. In my research I explored the use of 2 drugs who are blocking NMDA receptors and as such theoretically extremely effective in neuropathic pain management: Methadone and Dextromethorphan. Methadone proved to be effective and safe as first line opioid, with no cardiac adverse events when applied in clinical management of pain. On the other hand, Dextromethorphan needs more studies before recommending it in use of pain management in palliative care. I also studied common pathways between pain and depression as these 2 entities are closely interlinked.

Concerning **education** my research was focused on development of core curriculum for undergraduate medical training based on the European Palliative Care Association Recommendations. I won a 3 year Erasmus plus grant – The EDUPALL project – and based on research together with partners from 8 academic centers throughout Europe we developed a core curriculum matrix that was afterwards transposed in blended education material and tested on over 1000 medical students in 4 universities in Romania and 2 in Ireland.

After her PhD thesis, I published several scientific papers, 14 of them being published in journals indexed in ISI Thomson Reuters data base. My publications have accumulated a total of 306 citations and an H index of 8 in Google Scholar database and H index of 7 in ISI database.

Since the time of the PhD thesis preparation until now, I was director of a scientific grants obtained through national or international competition, scientific coordinator of an international research grant and team member in other research projects.

My activities in the field of palliative care I brought significant scientific and academic contribution through both original works and books published as a single author, co-author and editor. The active involvement in the activity of the continuous training of doctors is noteworthy, leading numerous post - graduate continuing education medical courses.

Future research plans are centered on palliative care sedation the ethical aspects and economic consequences, and also on developing core research competences for palliative care clinicians.

Concerning teaching activities, I will continue to teach medical and nursing students and lead the palliative care master program, a program that was going last year through the accreditation process and received outstanding evaluations. In the training I will focus on blended methods, adult education techniques, multidisciplinary. I will work on collaboration with al the medical universities in the countries and in Moldova to implement the results of the EDUPALL project and the European Curriculum and with international visiting professors I will continue to organize annually palliative care masterclasses on various topics palliative care topics

Given the involvement of teaching and academic activity, some of my further actions still regard the publication of new books in the field of palliative care and proposing new courses for master and doctoral school in order to ensure better training of future health care professionals.

Rezumat

Activitatea mea profesională, academică și științifică, în perioada care a urmat tezei de doctorat până în prezent, aparține în principal domeniului îngrijirilor paliative. Acest nou domeniu emergent în domeniul medicinei este unul important în special în societatea noastră, unde bolile cronice sunt patologia predominantă și ele generează de suferință considerabilă în domeniul fizic, psihosocial și spiritual.

Ca și lider al dezvoltării îngrijirilor paliative în România, am ales abordarea modelului de sănătate publică pentru dezvoltarea îngrijirilor paliative în țară și în regiune. Drept urmare, efortul meu clinic, educațional și științific s-a concentrat pe 3 direcții principale: dezvoltarea serviciilor, educația și disponibilitatea medicamentelor (în special pentru medicamente împotriva durerii)

În zona de dezvoltare a serviciilor, cercetarea s-a concentrat pe modalități bazate pe dovezi pentru dezvoltarea în sistemul public de îngrijire a sănătății a serviciilor integrate de îngrijire paliativă la nivel de bază și specializat. În calitate de oncolog, am început să ofer îngrijiri paliative pacienților cu cancer din comunitate și am cercetat noi modalități pentru a oferi îngrijiri disponibile pacienților cu cancer in toate locațiile. În teza mea de abilitare prezint cercetările făcute în dezvoltarea unui model de îngrijire paliativă de bază pentru pacienții cu cancer din comunitate, sub finanțare PF05, unde am fost cercetător și conducător de proiect. Rezultatele acestei cercetări au generat schimbări de politici și au fost încorporate în noul ordin al ministrului sănătății 253/2018 privind reglementarea dezvoltării și funcționării serviciilor de îngrijiri paliative în România. Cercetările făcute pentru dezvoltarea îngrijirilor paliative de bază în centrele oncologice au arătat mai multe lacune și nevoi nesatisfăcute pentru pacienții cu cancer. Am realizat și validat prin cercetare instrumente simple pentru a fi utilizate pentru evaluare și protocoale pentru îngrijirea clinică, dar impactul a fost mai mic datorită birocrației și rutinelor din aceste instituții.

Pentru pacienții care nu au cancer (insuficiență cardiacă și BPOC) cercetările mele s-au concentrat pe înțelegerea momentului potrivit pentru începerea îngrijirilor paliative, evidențiind în cele din urmă instrumentele de screening, nevoile existente și modalitatea rentabilă de furnizare a serviciilor de îngrijire paliativă. Rezultatele cercetării arată că instrumentele de prognosticare

sunt incerte, că demararea serviciilor ar trebui să fie legată de nevoi și că modalitățile rentabile de furnizare a serviciilor de îngrijire sunt servicii de îngrijire paliativă la domiciliu inițiate odată ce diagnosticul de insuficiență de organ plus monitorizare condusă de asistent medical sau clinici ambulatorii încorporate în serviciile de cardiologie/pneumologie. Pentru a asigura continuitatea serviciului, este nevoie de finanțare publică. M-am angajat în cercetări în domeniul economi al sănătății, deși acest lucru nu era în zona mea de confort. Am întreprins un proiect de cercetare privind dezvoltarea unităților de cost și a matricilor de costuri pentru serviciile de îngrijire paliativă în unitățile de internare și în comunitate și am calculat costul unitar pentru aceste servicii. Lucrarea a fost folosită în continuare în advocacy și a condus la includerea finanțării serviciilor de îngrijire paliativă la domiciliu din fondul național de asigurări de sănătate.

Pentru domeniul accesului la medicamente, nu am discutat în teza mea munca științifică efectuată anterior doctoratului și publicată în Lancet. Aici m-am concentrat în schimb pe evaluarea practicii clinice în utilizarea antagoniștilor NMDA pentru tratamentul durerii și a legăturilor dintre durere și depresie. În cercetarea mea, am explorat utilizarea a două medicamente care blochează receptorii NMDA și, ca atare, sunt extrem de eficiente din punct de vedere teoretic, în gestionarea durerii neuropatice: metadonă și dextrometorfan. Metadona sa dovedit a fi eficientă și sigură ca opioid de primă linie, fără evenimente adverse cardiace atunci când a fost aplicată în gestionarea clinică a durerii. Pe de altă parte, Dextrometorfanul are nevoie de mai multe studii clinice înainte de a-l recomanda în utilizarea tratamentului durerii în îngrijirea paliativă. De asemenea, am studiat căile comune dintre durere și depresie, deoarece aceste 2 entități sunt strâns legate între ele.

În ceea ce privește educația, cercetările mele s-au concentrat pe dezvoltarea curriculumului de bază pentru pregătirea medicală de licență, pe baza recomandărilor Asociației Europene a Îngrijirilor Paliative. Am câștigat un grant Erasmus+ de 3 ani - Proiectul EDUPALL - și pe baza cercetării, împreună cu parteneri din 8 centre academice din întreaga Europă, am dezvoltat o matrice curriculară de bază care a fost apoi transpusă în material educațional mixt și testată pe peste 1000 de studenți la medicină din 4 universități în România și 2 în Irlanda.

După teza de doctorat, am publicat mai multe lucrări științifice, 14 dintre acestea fiind publicate în reviste indexate în baza de date ISI Thomson Reuters. Publicațiile mele au acumulat un total de 306 de citări și un indice H de 8 în baza de date Google Scholar și un indice H de 7 în baza de date ISI.

Dupa finalizarea tezei de doctorat și până acum, am fost directorul unor granturi științifice obținute prin concurs național sau internațional, coordonator științific al unei burse internaționale de cercetare și membru al echipei în alte proiecte de cercetare.

Activitățile mele în domeniul îngrijirilor paliative au adus o contribuție științifică și academică semnificativă in domeniu atât prin lucrări originale, cât și prin cărți publicate ca unic autor, co-autor și editor. Este de remarcat implicarea mea activă în activitatea de formare continuă a medicilor, conducând numeroase cursuri medicale de formare continuă postuniversitară.

Viitoarele planuri de cercetare se concentrează pe sedarea paliativă, aspectele etice și consecințele economice, precum și pe dezvoltarea competențelor de cercetare de bază pentru clinicienii din îngrijire paliativă.

În ceea ce privește activitățile didactice, voi continua să predau studenților medicali și asistenților medicali și să conduc programul de masterat în îngrijiri paliative, un program care a trecut in anul precedent prin procesul de acreditare și a primit evaluări remarcabile. În procesul de educație mă voi concentra pe metode mixte de predare, tehnici de educație a adulților, multidisciplinare. Voi lucra la îmbunatățirea colaborarii cu toate universitățile medicale din țăra și din Moldova pentru a implementa rezultatele proiectului EDUPALL și a Curriculumului European. Cu sprijinul profesorilor internaționali în vizită voi continua să organizez anual masterclass de îngrijire paliativă pe diverse teme.

Având în vedere implicarea in activități didactice și academice, unele dintre acțiunile mele ulterioare privesc în continuare publicarea de noi cărți în domeniul îngrijirilor paliative și propunerea de noi cursuri pentru școala de masterat și doctorat, pentru a asigura o mai bună pregătire a viitorilor profesioniști din domeniul sănătății.

Section 2. SCIENTIFIC, PROFESSIONAL AND ACADEMIC ACHIEVEMENTS

2.1 SCIENTIFIC, PROFESSIONAL AND ACADEMIC ACHIEVEMENTS IN THE FIELD OF EVIDENCE BASED PALLIATIVE CARE SERVICE DEVELOPMENT IN ROMANIA

Palliative care is a new medical discipline that needs to be integrated into the Romanian health care system. As a clinician and also as a pioneer of the palliative care movement in eastern Europe I looked for conceptual models to help me organize the activities in the field of palliative care in my country, from services to education and research. The most appealing and relevant model for me was the WHO public health model to develop palliative care[1] known also as the WHO triangle for palliative care development including policy, medication availability, education, and implementation. (see Fig. 1)

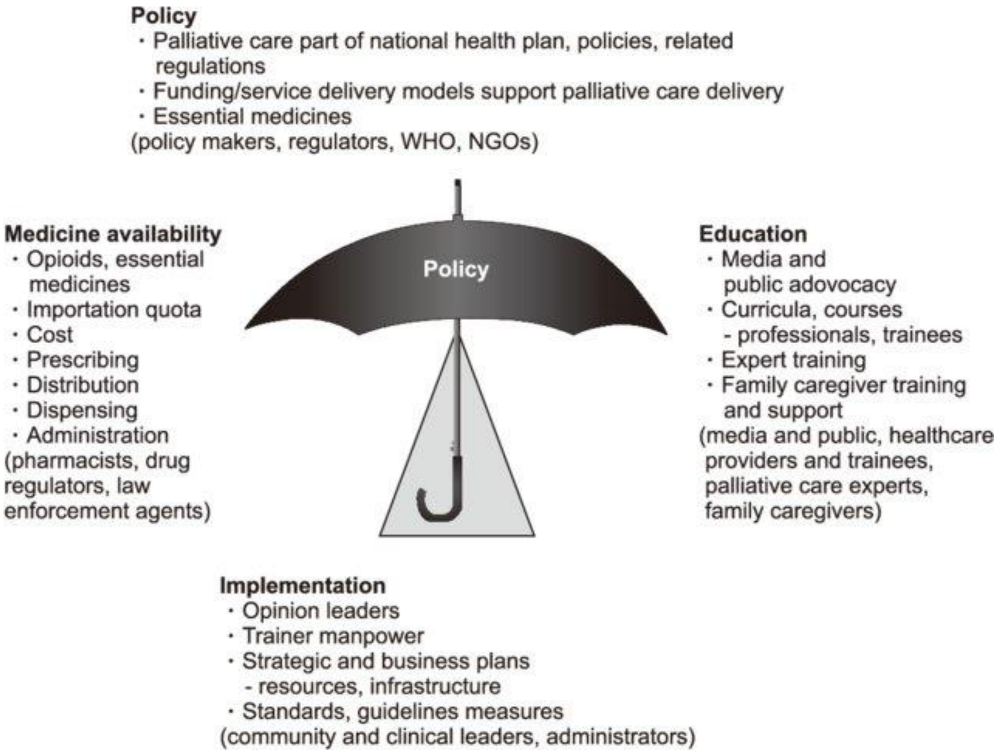


Fig. 1 Public Health Model for Palliative Care Development from Worldwide Palliative Care Alliance. Global Atlas of Palliative Care at the end-of-life Geneva: World Health Organization; 2014 Available from: http://www.who.int/nmh/Global_Atlas_of__Palliative_Care.pdf.

During my more than 25 years of work in the field of palliative care I could see the importance of this model in practice as it was impossible to offer good care without the available drugs (and this was especially true for pain management were access to opioids was legally extremely restrictive); it was impossible to sustain services without policies and regular funding and there was no chance to develop a new discipline without education and proper research. And education here needs to be understood in a very broad context starting with health care providers and ending with decision makers and the general public.

I will use this model also to present the scientific achievements in my habilitation theses. I will start with the scientific evidence in service development (base of the triangle), go through the improvement of the legal framework for the use of pain medication and scientific evidence for the use of some particular analgesics (NMDA antagonists) and finish with the scientific contribution in the field of education in palliative care.

All the organizational research that I did was as often as possible linked with advocacy for new or improved policies for palliative care in the country (from laws to ministerial orders and funding mechanisms)

2.1.1 Palliative Care in the Romanian context

The World Health Organisation (2002) states that "Palliative care is an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual"[2].

Palliative care has been introduced and developed in Romania Since the early '90s, initially by NGOs and later in the public health care system. Since 2000, new palliative care services have been developed in various settings (home-based, inpatient units, outpatient services, hospital teams). In 2010 there were 32 providers[3] (12 in the public system, 19 NGOs and 1 for-profit service). Comparing the estimated needs calculated by international recommendations[4] with the existing services, there was slightly over 5% coverage in 2010, with a services developed sporadically around the country and with more than half of the counties having not yet developed any services. The development has been inconsistent, due to limited financial and human resources available and the lack of national policies.

In 2008 a partnership was signed by the Ministry of Health, Hospice Casa Sperantei and the National Federation of Cancer Patients, with the purpose of jointly drafting a national program for palliative care. In the context of the expected new health law in Romania (currently under public debate) and the declared interest of the Ministry of Health to develop palliative care services at national level, Hospice Casa Sperantei (as pioneer of palliative care in the country) had several initiatives to sustain the national development of palliative care. In 2011, with the support of NICE experts from the UK, a national strategy for palliative care was prepared by a taskforce representing health authorities and palliative care providers. This public policy created in a bottom-up process is aiming to develop palliative care on 3 levels (summary attached).

2. ***Level 1*****:** Patient self-care and Family support - education of patient and carer for daily living activities, pain management techniques, administration of medication (within agreed guidelines), occupational therapy, support for decision making etc.

3. ***Level 2:*** Basic palliative care – provided by family doctors and community teams with basic training in the field of palliative care. This level will be addressed in the proposed project.
4. ***Level 3:*** Specialized palliative care services - Dedicated palliative care staff will provide services to patients and families as part of the interdisciplinary teams consisting of specialized nurses, kinetotherapists, social workers, doctors specialized in palliative medicine in various settings (community, inpatient, outpatient, etc) and consultancy for Level 2 providers.

The strategy was further refined during the Word Bank Project by the palliative care working group from the ministry of health and was published together with a draft implementation on the ministry of health website [5]. The implementation plan is looking at building commitment around the strategy, developing capability (education of human resources on all 3 levels of competency), capacity building (on medium term accent on basic and specialised palliative care in the community and 4 pilot districts with integrated palliative care networks), adjustment of the legal framework and creating funding mechanisms to sustain the services.

As acknowledge in the "Global atlas of palliative care at the end of life"[6], published jointly by the WHO and the Worldwide Palliative Care Alliance (WPCA) in January 2014, there is still a huge unmet need for palliative care provision worldwide. Palliative care is still underdeveloped in many East-European countries, as far as the need for services and overall coverage is concerned. For palliative care to be accessible to all in need it must be available in the community[7].

In 2012 the EAPC formed a taskforce to take this strategic work forward, recognising that public health and primary care approaches should be embraced to promote universal coverage.

A public opinion survey[8] in Romania on a national adult population revealed a huge disparity in the access to palliative care services, due to their scarcity and to the inappropriate governmental funding. The above-mentioned national survey revealed that 54.2% of the respondents would prefer care at the end of life in their own homes by the family or by a specialized palliative homecare service or by the family doctor, and only 0.2% in hospitals.

Recognized as a major problem, pain is one of the main reasons why people with incurable diseases request palliative care services followed by communication problems

In Romania the need for specialised palliative care services was covered in 2012 for around 6% of the estimated need, with 17 out of 41 counties (compared to 26 in 2010) in Romania having no services at all, and 24 counties with 1-5 services.[9]

Examples of laws that have fostered palliative care development are the followings:

Law no.46/2003 for patient's right, stating that: "The patient has the right to terminal care, to die in dignity"; Law No.95/2006 for the health reform in Romania "palliative care among the services provided in primary care and hospitals";
National strategy for the sustainable development of Romania – Horizons 2013-2020-2030, published in the Official gazette, part 1bis, No. 824bis of 8.12.2008 envisages: "Increase in coverage of basic services for the population such as emergency services,50% increase of access to health care services (long-term care) for the elderly, increase of coverage with palliative care services to 60% [by 2020]". Health Ministry order No.1778/2010 states that "Salaries of clinical staff working in difficult or dangerous environments (including palliative care) are entitled to up to 50% monthly bonus added to salary;" and is establishing what are the staffing requirements

Palliative care for doctors was recognized in 2000 as a "subspecialty" and the curriculum for organizing the specialist training was updated in 2005; for nurses the process was slower palliative care being initially included in 2007 in the nursing college curricula.

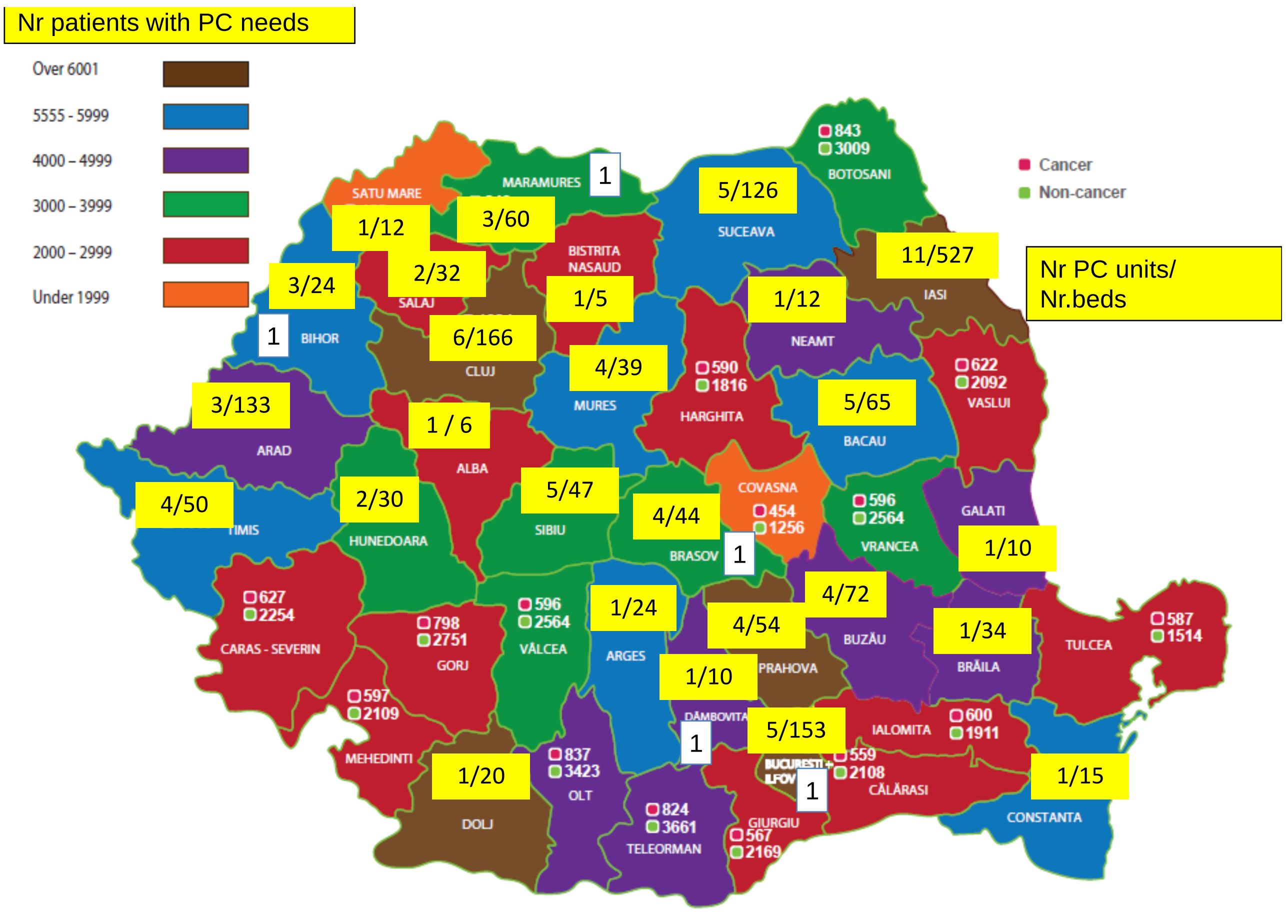
Drugs especially access strong painkillers was a huge problem in the late 1990 early 2000 and was dramatically improved with a new legislation in 2005 by Lawno.339/2005

National Standards for inpatient units and home care services having developed in a Romanian American partnership being subsequently renewed in 2009 and unofficially assumed by palliative care providers[10].

I published in 2018 an updated situation of palliative care in Romania in the article "Palliative care in Romania D Mosoiu, N Mitrea, M Dumitrescu Journal of pain and symptom management 55 (2), S67-S76"[11].

An estimation of patients with palliative care needs was done based on mortality data. Counties were classified in counties with high need with over 5000 patients a year (brown and blue on the map), moderate need (violet green and red on the map) and low need under 2000 patients a year (orange) The distribution of palliative care services in the country is still scarce as seen in figure below with more than a quarter of the Romanian counties having no palliative care services at all.

Fig. 2 Distribution of palliative care services in Romanian counties in 2018

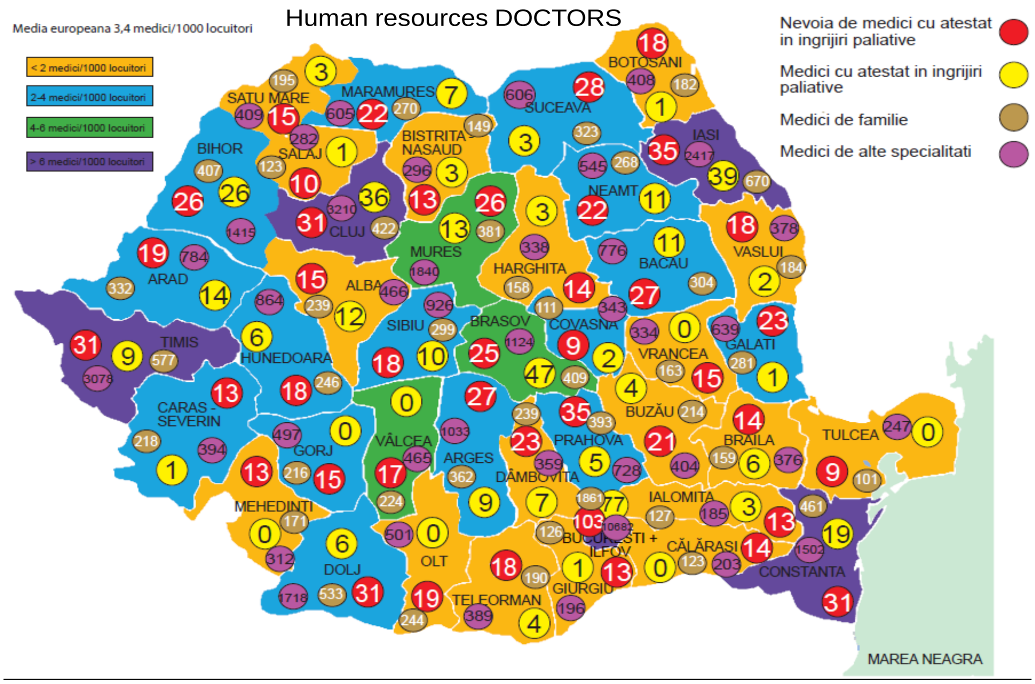


From **Palliative care in Romania D Mosoiu, N Mitrea, M Dumitrescu JPSM 2018**

Human resources needed for palliative care services were also mapped at national level and a special interest was offered to physicians as their 18 months specialized training in palliative care is on one hand a measure to ensure good quality of care but on the other hand a potential barrier for quick development of such services.

The following map presents the potential physicians existing in different districts. The background colour is looking at nr of GPs per 1000 inhabitants – orange being the counties that have less than 2 GPs/1000 inhabitants, blue those with 2-4 GPs/1000 inhabitants, green those with 4- 6 inhabitants /1000 inhabitants and purple those with over 8 GPs/1000 inhabitants. We did these assessments to understand the potential of developing basic palliative care through GPs. The dots represent number of palliative care trained physicians needed (in red) or already trained (in yellow). Brasov and Iasi are the only counties were there are enough trained palliative care doctors.

Fig. 3 National cover with GPs and trained palliative care doctors



From: **Palliative care in Romania <u>D Mosoiu</u>, N Mitrea, M Dumitrescu JPSM 2018**

2.1.2. Basic palliative care delivery model for cancer patients in the community the Romanian- Swiss research project PF05 *„Overcoming disparities in access to quality basic palliative care in the community"*

Palliative care services can be beneficial for a large category of patients with life ending or life limiting conditions and can be delivered in a variety of settings. For our project as patients we have chosen those with cancer who need care in the community.

Why cancer patients? The burden of cancer continues to increase at global level[12]. Cancer is the second leading cause of death in Romania. "Over 70% of the new cancer cases are diagnosed in late stages (III and IV) of the disease, thus representing advanced and terminal patients. As result, Romanian health care system is witnessing an increasing number of cancer patients in need of palliative care (i.e. multidisciplinary, specialized care involving physical aspects such as pain and symptom control, as well as psycho-emotional, social and spiritual support)." [13]

The above quoted public opinion survey commissioned by Hospice Casa Sperantei in order to evaluate the perception and experience of the population about the care of patients at the end of life revealed a striking figure: 20.7% of respondents (about 4,5 million people) have been in the situation of providing care of a dying relative. Furthermore, in 76.5% of cases the family was the main caregiver (in 18.4% family had no medical support at all in providing the care) and 11.8% cases the family physician was involved.

The biomedical model of care in Romania focused on curing the diseases is leaving little space in the health care system for advanced and terminal patients who often are not even having access to pain management. This is clearly reflected in the national allocation of resources. The national cancer program in Romania at the moment of the project initiation[14] was far from being comprehensive funding being allocated for just 2 activities: active cancer treatments (170 mil euro) and investigation through PET CT (2,2 mil euro). Romania is among the countries with the lowest consumption of morphine/capita in Europe; this indicator is used by international agencies to reflect how well pain is treated in a country. Pain is after fatigue the most frequent symptom experienced by advanced cancer patients[15].

Why focus on care in the community? - It is well known that a large majority of patients prefer to receive end-of-life care and die in their own home; Hospice Casa Sperantei survey[7] revealed 83% of respondents who would prefer care at home at their end of life.

According to the World Bank surveys, Romania is one of the countries with the highest percentage of hospital beds/population among European countries. The regulations of the Ministry of Health over the past two years resulted in a gradual reduction of the number of acute hospital beds in order to reach the average European level. This trend was not accompanied by a complementary development of community care. The project is an opportunity to develop palliative care at community level. In Romania there is an obvious disparity in the allocation of health insurance funds, with only 0.18% allocation for home care in 2011 and 6.70% for GPs, compared to 42.85% for hospitals. The above-mentioned national survey revealed that 54.2% of the respondents would prefer care at the end of life in their own homes, and only 0.2% in hospitals. However, there has been a general trend of setting up specialized inpatient palliative care units and low priority to care in the community. The project brings **a 4-dimensional approach to improve access to care at community level**, by evaluating needs of patients and GPs, as well as legal and funding aspects and further proposing appropriate interventions.

Why disparities? The deep and persistent global economic crisis has strong impact upon societies in general, and particular fields, as well. The proposed project, with its research component and deriving models of intervention, will focus on disparities worsened by the global crisis within the health system in general and the specific palliative care field. The need of the proposed project will be briefly highlighted across two main components as follows:

(1) **Health disparities**[16] in Romania revealed by scientific quantitative researches (public opinion polls) in the health field as a whole and in the palliative care field.

(2) **Health economics**[17] approach as generator of potential solutions to address.

A national representative survey[18] (commissioned by the project partner MRC and conducted by CURS – Center for Urban and Regional Sociology on a national adult population representative sample of 1,492 respondents, error +/-2.5%) reveals strong disparities in the health field, as well as responsibilities associated with them. Thus, 99.6% of the respondents consider that the government should be responsible to provide health care for the sick. 37% from the respondents also consider that, through its policies, it is also the government which played the biggest role in increasing inequalities. The total lack of the respondents' financial resources is identified by 35.9% of them as THE obstacle in access to appropriate medication.

In the particular field of palliative care, it is estimated an increase of the need, in the context of aging societies, limited health budgets and global economic crisis. As the existent services cannot reach all the potential beneficiaries, top international experts[19] in palliative care recommend the use of health economics tools in order to optimize services, maintain quality, and provide evidence-based evaluation of costs/benefits of alternative interventions/models of care to decision makers. This challenging approach (to be applied in the proposed project), being a complex one, at the intersection of fields and expertise, can be successful through sustained dialog, exchange of know-how and action of experts, economists, researches, beneficiaries of services.

With this project we aim to contribute to the implementation plan of the national strategy by approaching **4 key dimensions** of palliative care delivery in the community at primary level:
(a) clinical/direct care of patients,
(b) training and education of general practitioners,
(c) legal aspects and palliative care policies and
(d) financial/funding aspects.

Palliative care services can be beneficial for a large category of patients with life ending or life limiting conditions and can be delivered in a variety of settings. For our project as patients group we have chosen those with cancer who need care in the community.

This research project was one of the most successful projects run under this PF05 framework. It is results translated into major policy changes for the palliative care field proving that it is possible to enact policy changes if solid scientific evidence is presented to health authorities. Several publications were issues from a book chapter in an international monography to conference presentations and journal articles. My role in the project was as researcher and project lead. **Mosoiu**

D, Stanciulescu L, Strasser F. – Cap 3 Basic palliative care model for cancer patient in the community: From research to a national policy in New Developments in Medical Research Palliative Care The role and Importance of Research in Promoting Palliative care Practices r Vol 3 ed. Michael Silbermann, Nova Medicine Health Newyork 2019 ISBN: 978-1-53616-212-7[20].

RESEARCH METHODOLOGY

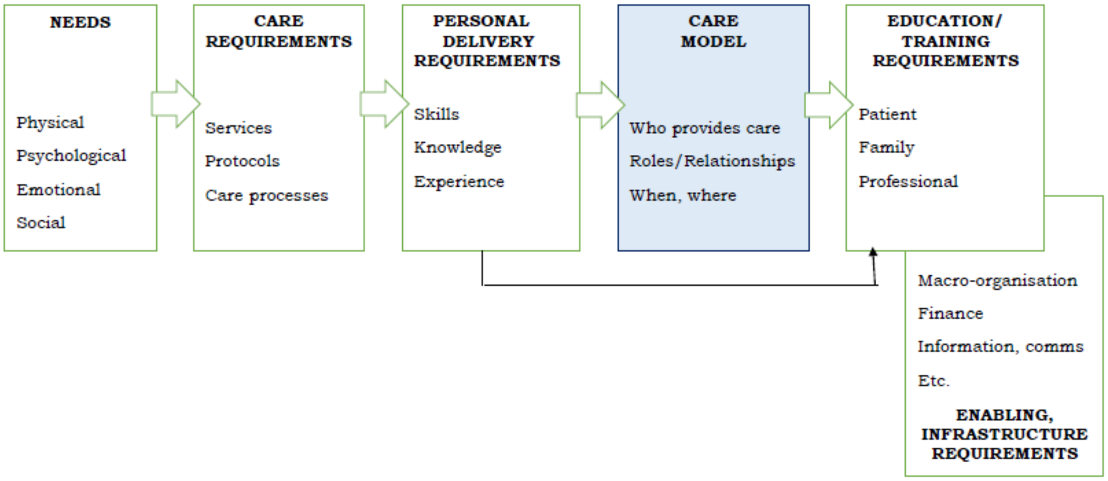
The research aimed to respond to our first objective in the project: "To design a disparity and needs reality frame in providing care for patients diagnosed with cancer in 4 pilot counties (Brasov, Bucharest, Cluj and Iasi)" as a base for a future model of care for palliative care approach in the community.

A model of care in simple terms has to answer to the following questions: what care, delivered by whom, in what network, where, when, with what cost and what outcome. It has to respond to some identified needs, to be based on some existing skills, expertise, and knowledge, and to be supported by an enabling infrastructure. (see fig. 4 below)

Following the projects objective our main research question was:

1. What barriers/disparities concerning the four dimensions (clinical, education, legal, organizational) are hindering the access to palliative care for cancer patients in the community?
2. What are the needs (physical, emotional, social, service requirements, medication) of cancer patients in the community?
3. What is a feasible basic palliative care model for cancer patients in the community?

Fig. 4 Elements of a care model

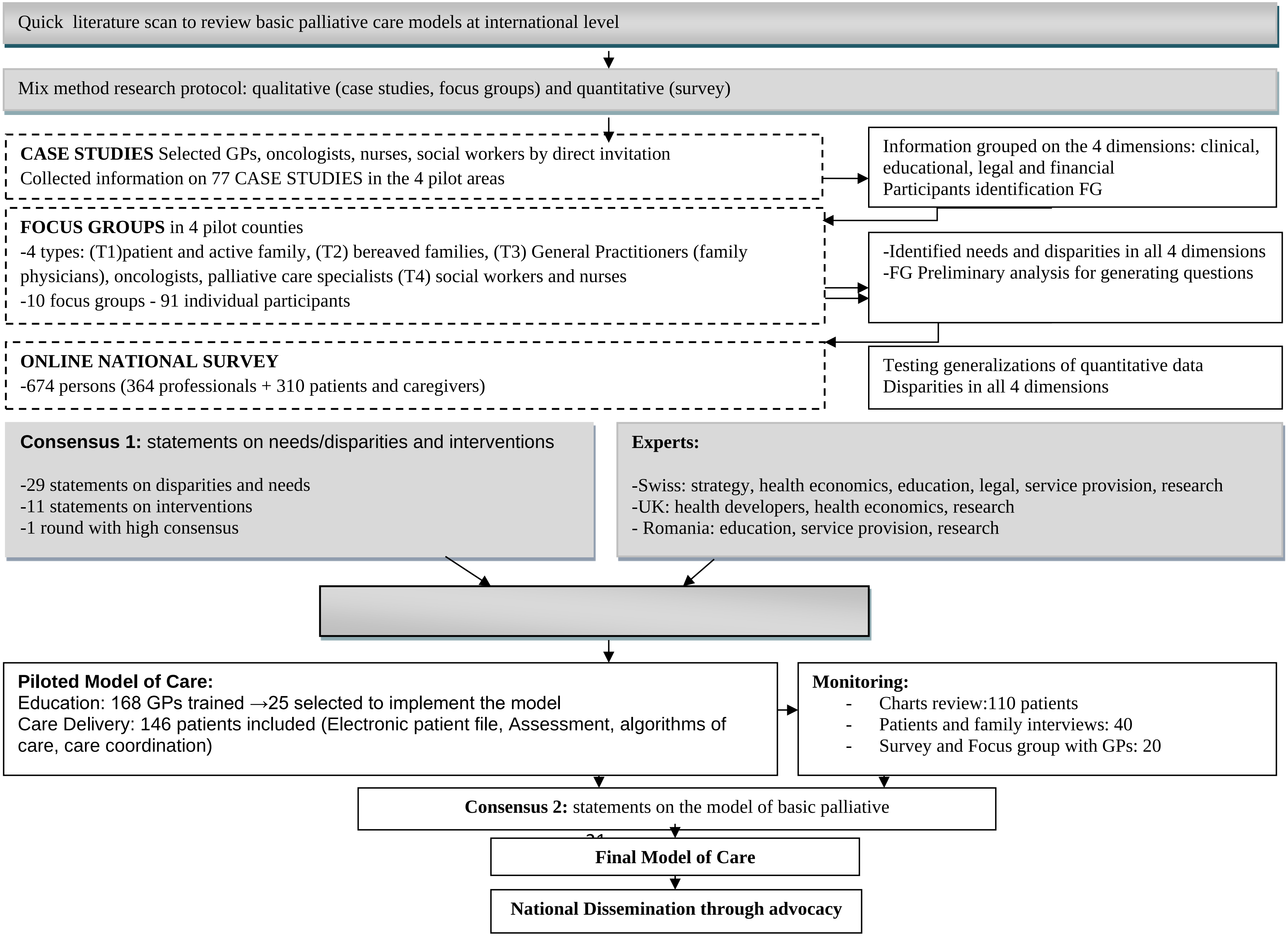


Due to the complexity of our research problem in order to understand it better a mixed methods research design was employed with both qualitative (case studies, focus groups) and quantitative (questionnaire) data collection methods. We decided for such a methodology not just from practical point of view as it offers several prospective on research issue but also because the combination of quantitative and qualitative data provide a better understanding of the studied phenomena and also allows generalization of the research findings.

Our research population had to be extended beyond patients and families to heath care providers and regulators to have a clearer picture on the existing barriers and disparities.

For details on methods used in developing the model (See fig. 5).

Fig. 5 – Process of developing the model of care for palliative care in the community (flow diagram of methods)



Quick literature scan to review basic palliative care models at international level

Mix method research protocol: qualitative (case studies, focus groups) and quantitative (survey)

CASE STUDIES Selected GPs, oncologists, nurses, social workers by direct invitation
Collected information on 77 CASE STUDIES in the 4 pilot areas

Information grouped on the 4 dimensions: clinical, educational, legal and financial
Participants identification FG

FOCUS GROUPS in 4 pilot counties
-4 types: (T1)patient and active family, (T2) bereaved families, (T3) General Practitioners (family physicians), oncologists, palliative care specialists (T4) social workers and nurses
-10 focus groups - 91 individual participants

-Identified needs and disparities in all 4 dimensions
-FG Preliminary analysis for generating questions

ONLINE NATIONAL SURVEY
-674 persons (364 professionals + 310 patients and caregivers)

Testing generalizations of quantitative data
Disparities in all 4 dimensions

Consensus 1: statements on needs/disparities and interventions

-29 statements on disparities and needs
-11 statements on interventions
-1 round with high consensus

Experts:

-Swiss: strategy, health economics, education, legal, service provision, research
-UK: health developers, health economics, research
- Romania: education, service provision, research

Piloted Model of Care:
Education: 168 GPs trained →25 selected to implement the model
Care Delivery: 146 patients included (Electronic patient file, Assessment, algorithms of care, care coordination)

Monitoring:
- Charts review:110 patients
- Patients and family interviews: 40
- Survey and Focus group with GPs: 20

Consensus 2: statements on the model of basic palliative

Final Model of Care

National Dissemination through advocacy

- A complex methodological design employing both quantitative and qualitative data collection was used. In order to highlight the needs and barriers/disparities/gaps in delivering palliative care to cancer patients in Romania, four pilot regions who concentrate more than half of the services in Romania were selected from all 3 historical provinces with the assumption that all other regions will have at least the same level of needs and disparities or even bigger (See fig. 3). As these pilot regions were further used to implement the basic palliative care model it ed palliative care as this was a prerequisite in international models for the functioning of the basic palliative care model[25].

Fig. 6 - The four Romanian pilot counties

Finally, in order to check the reliability of the findings a Delphi consensus agreement with 37 experts was run. In accordance with the Delphi methodology, the experts were asked to rate de disparities and needs identified and the proposed interventions developed jointly in 2 days meeting of a national task force group.

The draft basic palliative care model developed on the identified needs with expert support was piloted in 4 Romanian counties (see fig. 6.) on 146 patients. The process was monitored by file review with analysis of intervention, phone interviews with patients and families, survey and focus groups with GPs in the project. A second consensus was run to refine and agree the final basic palliative care model for cancer patients in the community Romania.

There were two phases in analysing the data generated by the qualitative studies (case studies and focus groups). In the first phase, a quick analysis was performed to identify themes and generate questions for the next step of the research. A second in-depth analysis was performed using open coding in order to identify the disparities and needs as presented by participants.

The case studies were collected during the regional meetings organized in Brasov, Bucharest, Cluj and Iasi, using the same template. In the regional meetings the participants were mainly health care providers (clinicians and authorities) and very few service users (patients, family members).

There were 4 types of groups in order to catch the perspective both of the users (patients, families, bereaved families) and of the providers (doctors, nurses, social workers).

Table 1. Types of groups

FG type/region	**A-Brasov**	**B-Bucharest**	**C- CLuj**	**D-Iasi**
1.Patients & family	x	x	x	X
2.GPs, oncologist, PC specialist	x	x	x	X
3.Nurse & soc. work	X			
4.Bereaved families		x		

The survey questions were designed based on the themes generated by the preliminary analysis in the focus group. It was a purposely developed data collection instrument starting with a common list of disparities as identified in the qualitative research. The participants were afterwards directed to one of the subsamples of the survey

- for providers (health care professionals)
- for beneficiaries (patients, family members)
- for authorities

A slightly different wording was used for patients and family members and bereaved family members.

As it was a new developed instrument, we used alpha Cronbach to measure the internal consistency and reliability of the questionnaire global score 0,44 and on 0,9 on domains.

The survey was put online using a monkey survey tool and was distributed nationally through our Hospice alert (over 6000 addresses) and through the network of our regional coordinators and it was also available on the web site. To ensure the statistical power of our study we needed 300 responses from patients and family members and 300 responses from professionals and in order to achieve this we extended the deadline for collecting data through the survey till end of august.

RESEARCH RESULTS

Qualitative research

We collected 77 case studies from our 66 participants in the regional meetings. We had 91 participants in all the 10 focus groups that were held in the four Romanian regions. We run 4 types of focus groups:

T1. Patient and active family members in the process of care
T2. Bereaved families
T3. General practitioners (family physicians), oncologists, palliative care specialists
T4. Social workers and nurses (Brasov)

Table 2. Tipuri de Focus grupuri

Bucharest	Brasov	Cluj-Napoca	Iasi
T 1	**T 1**	**T 1**	**T 1**
T 3	**T 3**	**T 3**	**T 3**
T 2	**T 4**		

Participants' selection matrix, according to the focus group type:

Including criteria: cancer diagnosis, ECOG score, time from diagnosis, registered to a family physician; if **they had in the last year at least 1 visit to the family physician**.

Table 3. Focus group T1 _ patients

Residence	**Treatment difference**	**Case complexity**	**Patient / Family**
urban 50% 7-8 invited persons	with chemo 50% 7-8 invited persons	complex cases 50% 7-8 invited persons	patients without family 25% 3 invited persons

rural 50% 6-7 invited persons	without chemo 50% 6-7 invited persons	non-complex 50% 6-7 invited persons	patients with family 75% 12 invited persons

Table 4. Focus Group T2 – bereaved family members

Residence	**Bereavement**
urban 50% 7-8 invited persons	with bereavement 100% 14-15 invited persons
rural 50% 6-7 invited persons	

Table 5. Focus Group T3- Physicians

Doctors
GPs 40% 5-6 invited persons
Oncologists 40% 5-6 invited persons
PC specialists 20% 2-3

Table 6. Focus Group T4 – Nurses and social workers

Social Workers & Nurses
Social Workers 33.3% 4-5 invited persons
Nurses 66.6% 9-10 invited persons (community nurses, GP nurses, oncology nurses, palliative care nurses, home care nurses)

I. MAIN DISPARITIES highlighted by the study are

1. **Access to medical care for in rural area versus access to care in urban aria** It concerns infrastructure, family education and capacity to offer/ compensate the lack of medical care, medical and nursing staff available, and access to medication.
2. **Homecare provision versus hospital care provision** Providing care in the community is not a priority for decision makers. Even for those working in the community it is obvious and a limiting factor the low number of available services. The existing services are unable to work at their maximum capacity due to legal and financial limitation. *GP Iasi; "legal limitations on the financing of palliative homecare – limited number of days supported by the National House of Healthcare Insurance".*
3. **GP's role versus Doctors with other specialties role GPs** are perceived as being on the lowest scale in the hierarchy of the medical disciplines, with limited autonomy in the medical decision-making process, handling papers, having to cope with many new regulations and failing sometimes to know them, with a busy caseload failing to secure the trust of patients and family members. *Independence in medical decision: "GPs cannot change or adapt the medication decided by the specialist" case study "GPs cannot initiate free of charge treatment with strong opioids for cancer patients in the community" Oncologist Iasi "Palliative care ... can send medical letters to GPs, which will prescribe the treatment indicated in the letter."*
4. **GPs office time versus GPs time spend in the community Due** to time and legal restrictions GPs tend not to do home visits. **"***GP Iasi: GPs are overloaded and have limited time to dedicate to patients that cannot visit the GP's office, case studies: lack or low number of home visits done by GPs"*
5. **Technical aspects of care versus Holistic aspects of care.** Doctors are perceived as doing interventions and prescriptions missing out the psycho-emotional, social aspects of care. *F4 patient Brasov: doctors are not in contact with the patients. They are not available for explaining diagnoses, treatments, interventions nor to the patient, or to the family*
6. **Promoting Individual work versus teamwork** There is no culture and incentive for team work in Romania in the medical field. *F1: lack of legal and financial incentives for*

Oncologists, GPs and Palliative care specialists to form teams of experts in dealing with patients.

7. **Reimbursed cost of care versus Real cost of care** Although in theory care is free of charge in Romania patients and their families have to pay for treatment in private clinics, informal payments in the public system, laboratory tests, investigations, medical materials. **"***F5 patient Brasov .... refusals from the Brasov country hospital for receiving radiotherapy on the reason that she is a retired person. ..informal payments to the medical personnel for receiving proper healthcare attention and services". GP rural BV "There is a too high waiting time for patients while the medical investigations are prohibitively expensive".*
8. **Actual legislation versus applied legislation** Laws and regulations are not properly applied due to bureaucracy, cumbersome procedures, insufficient information, fears, added restrictions to limit costs *SW Brasov: Wheel chairs were received from the county house of healthcare insurance after 10 months from the initial request. The administrative and bureaucratic approval system is too rigid and complex. Male Oncologist Brasov Opioid prescribing This problem is up to the way the doctors interpret the law and assume responsibility. GP rural: The National House of Healthcare Insurance limits the monthly upper limit of reimbursed homecare visits performed by GP to a maximum of 20 visits.*
9. **Family responsibility/burden of care for advanced cancer patients versus health care responsibility.** Family member have the role to navigate the patients through the system, manage symptoms, find information, struggle alone, offer emotional support *SW Brasov the patient and his/her family do not have enough time for getting other important information, being too much involved in pain management.*
10. **Family information versus patient information Due** to central role of the family in coordinating the care, emotional burden, financial incentives doctors tend to offer the family priority in receiving the information and leave informed consent at the level of a formality. *F7 hospice nurse Brasov Together with the families of the patients, doctors tend to form a silence conspiracy to misinform the patients.*

II. GAPS and BARRIERS to proper care of cancer patients in the community

At macro level the **underfinanced health care system** is almost unanimously quoted both by health care professionals and service users and is a platform on which all the other barriers build up.

Table 7. Mean scores of barriers

Disparity	**Lack money**	**Lack subventions**	**Demotivating salary**	**Communication**	**Lack training**	**Family support**	**Lack homecare**
MEAN SCORES	**1.72**	**1.56**	**1.22**	**1.50**	**1.28**	**1.22**	**1.56**
one sample t.test	**15.8*****	**9.3*****	**7.0*****	**9.0*****	**6.0*****	**6.4*****	**8.4*****

Disparity	**Medical treatment**	**Doctors incoordination**	**Symptom control**	**Lack spiritual assistance**	**Medical protocol**	**Lack drugs**	**Lack empathy**
MEAN SCORES	**1.06**	**1.22**	**1.17**	**0.78**	**1.06**	**1.22**	**0.72**
one sample t.test	**5.5*****	**7.0*****	**8.0*****	**4.0*****	**6.1*****	**6.4*****	**5.3*****

*Significance flag: *** p<0.001*

The variation of scores of disparities was between 0 (zero – meaning lack of importance) and 2 (two – most importance). Thus, we have calculated the means for each of the disparity based on the 21 themes we extracted from the focus groups. Based on significance t-tests (see Table 7) we can conclude that all the scores are statistically different from zero, not because of chance. The computed means varied between a maximum of 1.72 and a minimum of 0.72. In conclusion, the most important disparity identified by almost all the participants in the focus groups were: the lack of money (personal financial resources of patients), the lack of state subventions (poor redistribution of public funds to healthcare services), the lack of homecare services, and issues in communication between doctors and patients. Of average importance were disparities like: the lack of training of medical personnel, demotivating salaries of healthcare personnel, the lack of family support for patients, the incoordination between doctors of various medical specialties, the lack of drugs (either generic or latest generation drugs), inadequate symptom control from the medical staff, inadequate medical treatment of patients, and the lack of medical protocols in the public healthcare sector in Romania. Of least importance, two disparities proved to be statistically significant: the lack of spiritual assistance, and the lack of empathy showed by medical personnel towards the patients and their families. This last conclusion contradicts our initial hypothesis that the stakeholders in the Romanian healthcare sector acknowledge the lack of the spiritual assistance and its complementarity with the medical assistance. However, the data supported our initial hypotheses, derived from previous research of Hospice Casa Sperantei, that the most important disparities in Romania, concerning the healthcare services, are the lack of personal and governmental financial resources devoted to health issues. One of the most important findings is the high importance of two issues: lack of very specific services for palliative care, like homecare services provided either by public or by private stakeholders; and the lack of training of medical staff in communication. Participants at the focus groups argued that besides the medical training, the healthcare personnel should receive support in developing proper skills in communicating medical issues to patients and their families.

III Needs identified for fostering proper care for cancer patients in the community

1. Clinical and education domain

- Lack of clinical protocols in current practice
- Insufficient screening and management of symptoms pain being the main problem
- Futile treatments at end of life
- Lack of knowledge how to handle patients and their families in last days of life
- Pain management: assessment, analgesic ladder, opioid prescribing, fears concerning morphine use, legal requirements
- Invasive procedures done in patients' home
- Breaking bad news, counselling, negotiating goals of care
- Facing dying patients

Quantitative research

We received 674 completed questionnaires 364 from healthcare specialists and from 310 patients, patient carers or bereaved family members. In the professional group the largest proportion was represented by GPs, 63 %, followed by nurses, 18,5%, palliative care doctors 10,5%, oncologist 10%, Social workers 2%. The large majority of respondents (over 74 %) had an experience of over 9 years in the healthcare system and 53.81% had previous palliative care training

The survey results confirm the data from the qualitative research - bureaucracy (78.49%), followed by the lack of finances in the health care system (77.96%) and low awareness of palliative care in the population scoring the highest among respondents.

Table 8. Survey Results

	Strogly agree	**Somewhat agree**
Lack of finances in the health care system	**77.96%**	**20.07%**
Lack of state subventions for palliative care services	**71.38%**	**26.32%**
Low awareness of palliative care concept in the general population	**76.51%**	**22.06%**
Lack of personnel	**71.22%**	**23.74%**
Too much bureaucracy	**78.49%**	**16.49%**

Concerning perceived access of patients to palliative care health care professionals consider that a low percent 18,75 % of cancer patients have always access to palliative care services with over 60 % never or rarely having the opportunity to receive palliative care According to their experience, 60.83% of the respondents believe that the pain of patients with life-threatening/limiting disease is controlled to a low degree, and only 1.84% believe that the pain is totally or not at all controlled.

The respondents believe that the palliative care should be provided by the Public Health care system (91.36%) and most of the respondents think that the last hours/days of life should be provided at home (73%).

The ranking of changes to be made in order to improve the quality of life of cancer patients in the community is presented on the table below:

Table 9. Ranking of barriers hindering palliative care development in Romania

Lack of finances in the health care system	60,24%
Lack of state subventions for palliative care services	53.96%
Lack of homecare services	47.24%
Demotivating salaries for health care professionals	46.06%
Deficit in training/education in palliative care of health care professionals	45.28%

DEVELOPING THE RESEARCH BASED BASIC PALLIATIVE CARE MODEL FOR CANCER PATINTS IN THE COMMUNITY

The basic palliative care model was developed based on the needs identified through the research both at patients/family level and also at provider's level. In order to build the model we used a conceptual framework designed around needs, care and facilitating infrastructure. The questions to be answered by the model of care are in Fig. 7

Fig. 7: Conceptual Framework

Questions to be answered by a MODEL OF CARE

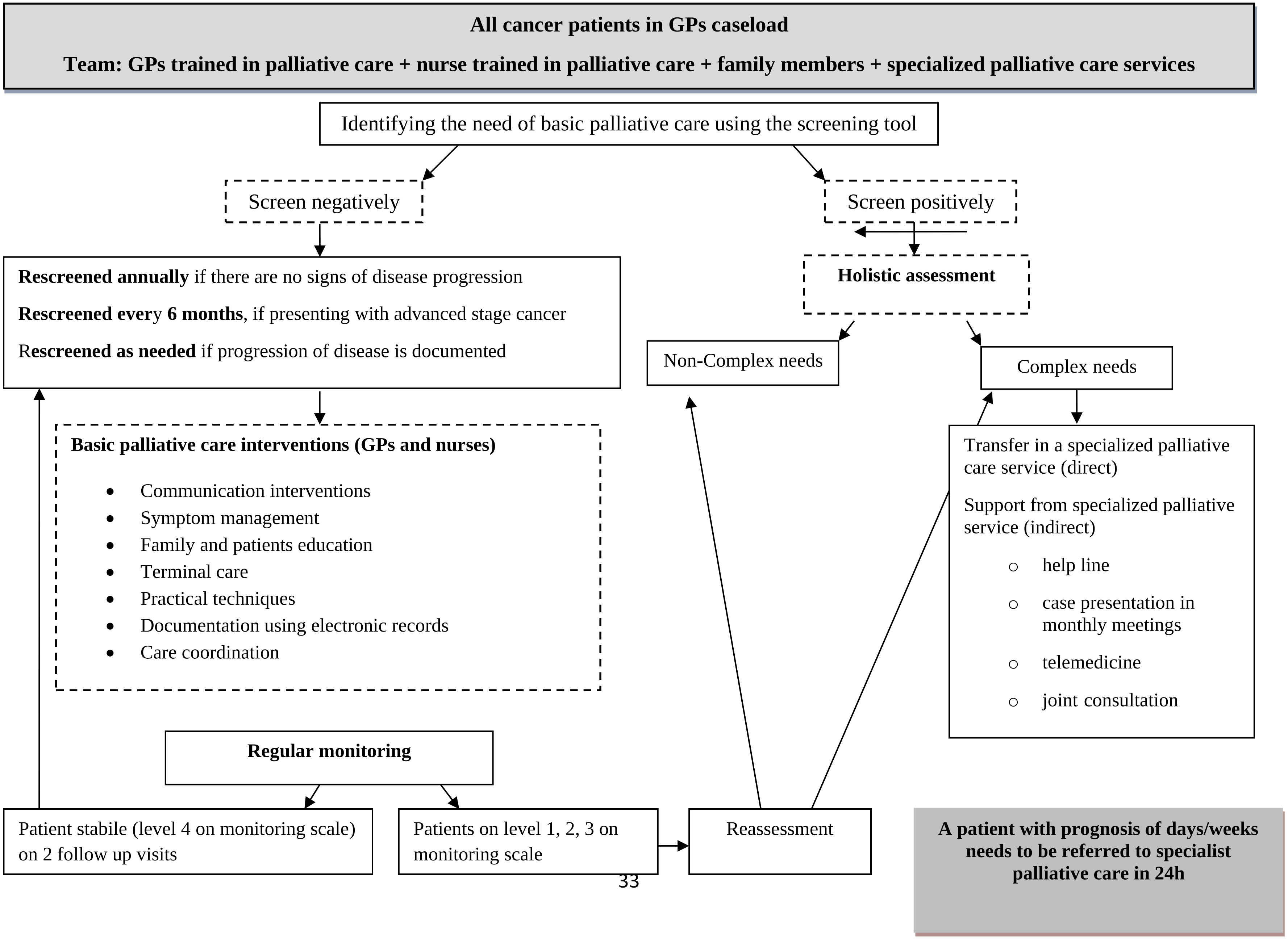
BENEFICIARIES	PROVIDERS	FACILITATING INFRASTRUCTURE
Who are the beneficiaries	Who will provide the care?	What documentation and communication tools?
What needs do they have that must be addressed?	What competences and expertise is needed; what training must be provided?	What communication strategy and dissemination?
When will they receive care?	What care is needed – which are the interventions to be applied?	What other services are necessary?
Where will they receive care?	What Roles/Relationships between different providers?	How to empower stakeholders to enact policy changes?
How to monitor the results and evaluate the impact?		How will funding be ensured?

Beneficiaries

Care provided to patients who screen positively for palliative care needs was differentiated after the initial holistic assessment performed by the GP when patient were classified as patients with simple PC needs or complex cases. Holistic assessment included patient and family disease understanding, symptom burden, performance status, co-morbidities, communication and decision-making preference, family support and care network, worries concerning end of life, educational needs.

If the patient was classified as patient with complex needs, the GP did initiate care and basic palliative care interventions but also requested support from specialized palliative care services or transferred temporarily the patient into specialized palliative care (see fig 8). The Complex Case was defined as patient with severe suffering in one or more of the domains: physical, social, spiritual or psycho-emotional domain; or who has no family or difficult, conflictual family; or who has multiple co-morbidities; or refractory symptoms, complex /veiled existential distress, or who exceeds the capacity of care provided at the GP level. For patients with short survival and complex needs an urgent referral to palliative care was performed.

Fig. 8: Care algorithms for cancer patients with noncomplex and complex palliative care needs



Cancer patients with non-complex needs received basic palliative care provided by GPs trained in basic palliative care and by nurses trained in basic palliative care that work alongside to GPs.

GPs Interventions included communication interventions- empathic communication, communication of diagnosis and prognosis, breaking collusion; Symptom management (especially pain, dyspnea, anorexia cachexia, depression, anxiety, nausea, delirium); Family and patient education concerning social rights, , skin care, mouth care, medication administration, non-pharmacological management of symptoms; Terminal care; Practical techniques putting in a Urinary catheter, SC catheter, paracentesis; Care coordination.

Nursing interventions were: assessment of nursing needs; empathic communication, nursing care; non pharmacological management for symptoms and medication administration; Family and patient education concerning social rights, moving and handling, skin care, mouth care, medication administration, non-pharmacological management of symptoms; terminal care; patients monitoring.

Monitoring levels depended on the severity of suffering see table 10 and can be performed by telephone or by face to face visits.

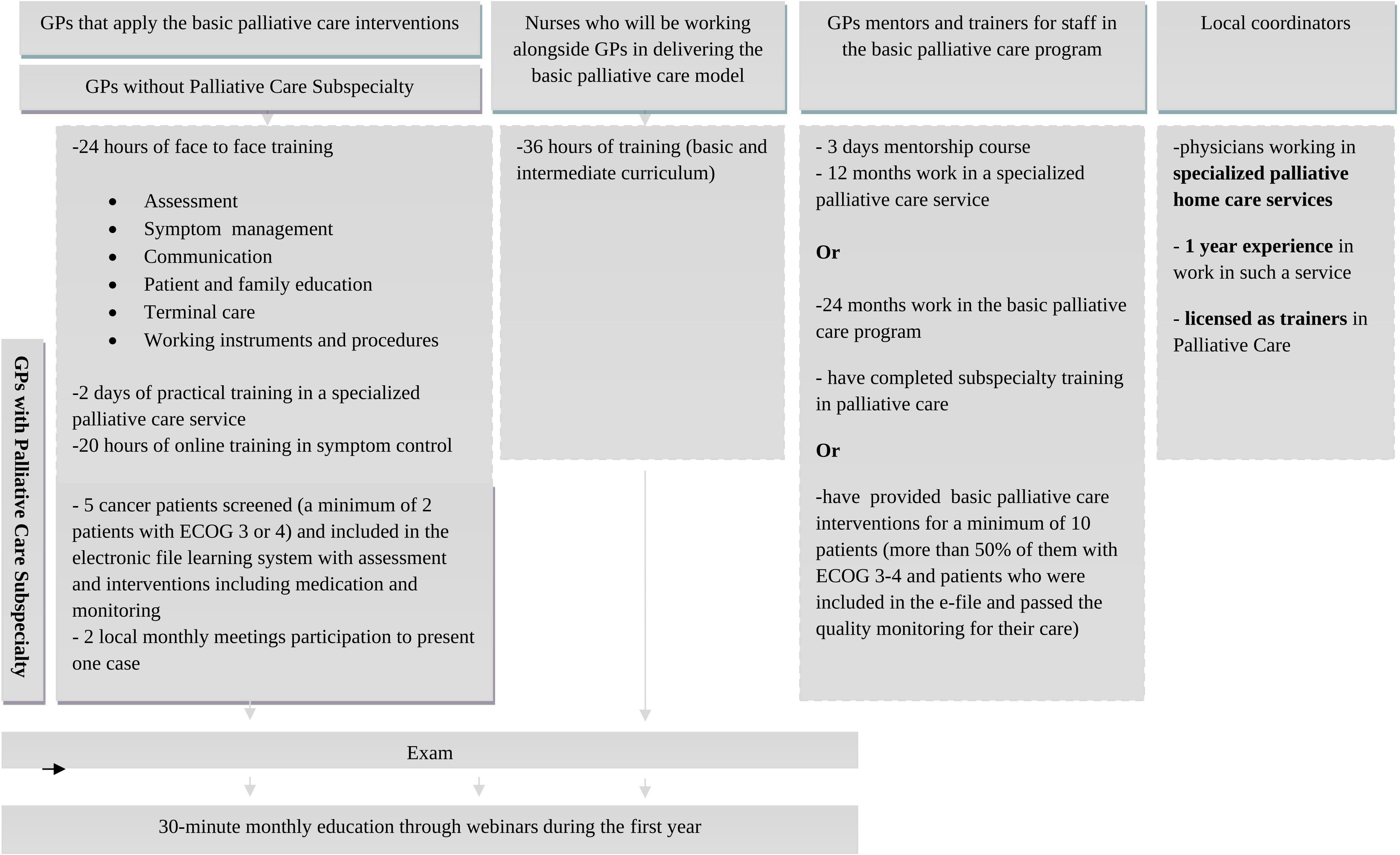
Table 10. Monitoring levels

Monitoring level	Degree of suffering (physical, social, spiritual or psycho-emotional)	Monitoring frequency
1	Severe suffering	Daily
2	Moderate suffering	Twice a week
3	Mild suffering	Weekly or at two weeks
4	Patient stable	Monthly

Providers: Who? What competence?

The basic palliative care model in the community is cantered on the family doctors and their nurse who have undergone a palliative care training course and who receive support from specialized palliative care teams. The education program we tested as an intervention in the pilot phase was designed to cover the gaps in the knowledge and abilities of the GPs that the research has identified (see fig. 9).

Fig. 9: Training and expertise requirements for staff involved in delivering basic palliative care model



GPs that apply the basic palliative care interventions

GPs without Palliative Care Subspecialty

-24 hours of face to face training

- Assessment
- Symptom management
- Communication
- Patient and family education
- Terminal care
- Working instruments and procedures

-2 days of practical training in a specialized palliative care service
-20 hours of online training in symptom control

GPs with Palliative Care Subspecialty

- 5 cancer patients screened (a minimum of 2 patients with ECOG 3 or 4) and included in the electronic file learning system with assessment and interventions including medication and monitoring
- 2 local monthly meetings participation to present one case

Nurses who will be working alongside GPs in delivering the basic palliative care model

-36 hours of training (basic and intermediate curriculum)

GPs mentors and trainers for staff in the basic palliative care program

- 3 days mentorship course
- 12 months work in a specialized palliative care service

Or

-24 months work in the basic palliative care program

- have completed subspecialty training in palliative care

Or

-have provided basic palliative care interventions for a minimum of 10 patients (more than 50% of them with ECOG 3-4 and patients who were included in the e-file and passed the quality monitoring for their care)

Local coordinators

-physicians working in **specialized palliative home care services**

- **1 year experience** in work in such a service

- **licensed as trainers** in Palliative Care

Exam

30-minute monthly education through webinars during the first year

The training included an online module focused on delivering knowledge for management of symptoms followed by a face-to-face training do deepen the knowledge gained by working on case studies, exercises. A practical placement in specialized palliative care services and by having the local coordinators available to visit patients together with the GPs allowed transfer of learning into doctors everyday practice. The participants had also an organizational training on using the electronic documentation. GPs with palliative care subspecialty did not need to go through the above-mentioned education program. In order to provide the basic palliative care interventions, they but must screen and include in the electronic file learning system with assessment, interventions including medication and monitoring five patients and participate in at least 2 local monthly meetings in order to present one case.

Facilitating conditions: Other support services? Documentation? Funding?

For this basic palliative care model to be functional there is a need to have a specialized palliative home care service available to cover the areas where the GPs are working, providing also support home consultations to complex patients. A local coordinator from the specialized palliative care service was providing leadership for each regional group. For admission of patients in need a specialized palliative care in-patient unit must be available in the area at a distance of maximum 50 km from patients' location. As the present funding scheme is not allowing free of charge initiation of opioids by GPs, a local oncologist was included in the support network for medication prescribing- first opioid prescription and advise on the active cancer treatment. A telephone support line Health Care Professionals staffed with specialized palliative care physicians is needed, from 7am to 9pm, 7 days/week, to provide urgent patient-centred advice and to undertake coordination including oncologist's advice.

Two-hour local monthly meeting with case discussions were organized face-to-face at district base for education, care improvement and coordination. Participants in the meeting were GPs, oncologist, palliative care staff, mentors, local coordinators. For quality control and development of the model of basic palliative care, the monthly meetings were documented, based on a simple template and were analyzed centrally by the consortium coordinators. The template included date of meeting, duration of meeting, participants, patients screened, patients included in care, main needs and interventions performed, content of education session performed, lessons learned for region, problems in applying the model and request for adaption of model.

Documentation of care was done using a specially produced patient electronic record. This was an excellent tool for monitoring but it generated frustration among the clinicians applying the model as it had to go to several testing version to become a simplified, user friendly and comprehensive version.

Conclusions:

Delivery of basic palliative care through primary care is feasible. The Romanian basic palliative care model for cancer patients in the community was developed based on a thorough process of adapting international frameworks to national condition: needs, disparities were highlighted through complex mix method research. The model has interventions both in the clinical field (screening for complexity of needs, assessment, monitoring, symptom management, communication, decision making, education, nursing care, terminal care) and in the educational area (start-up clinical and organizational training, supervision and continuous training during the project) and has involved the development of facilitating condition for implementation of the model (electronic patient file, telephone help line, local coordinators and mentors from specialized palliative care services, monthly meetings). The existence of a specialized home care services and access to specialized palliative care beds are essential in the big picture of delivering these services. The pilot model was adjusted during the implementation process based on patients' files analysis and feedback given by beneficiaries (patients and families –phone interviews) and providers (surveys and focus groups). There was a cost calculated per consultation and episode of care but further studies are needed to improve fair reimbursement for heterogeneous GP services.

Through an intense advocacy training the basic palliative care model was included in a new policy concerning palliative care Ministerial order 253/2018 that regulate the functioning of palliative care services in Romania. The challenge is now to implement the new policy at national level.

2.1.3. Steps to integrate basic palliative care in medical oncology in cancer centres

I took part as a researcher in a Romanian Swiss research project intituled “Integration of medical oncology and palliative care procedures in various institutional and economical settings” coordinated by Prof. Florian Strasser Saint Gallen Hospital Switzerland and in Romania by Conf. Dr. Patriciu Achimas Cluj Medical University http://www.iocn.ro/en/Research/The-projects-web-pages/IZERZO.html.

The project was directed to asses needs of cancer patients during their illness trajectory in different centres (oncological institutes- with Saint Gallen, Cluj, Bucuresti and Iasi as representatives, oncological departments in county hospitals with Alba centre as representative and hospice with Brasov as representative) and to develop key palliative care interventions that could be applied even in oncological clinics were the time available for each consultation is limited. These key palliative care interventions were focused on 5 arias: communication, symptom management, decision making, care coordination and end of life care.

The project acknowledged that there were previous more administrative initiatives like the ESMO cancer palliative care integrated centres for those cancer departments that complied with a list of 13 administrative criteria’s but also recognized that even with the above-named label those centres, due to lack of institutional commitments, might not fulfil the palliative care needs of their patients.

Objectives:

1. To design and validate instruments able to measure cancer patients palliative care needs and monitor quality of care
2. To prospectively measure, advanced cancer patients perceived need for the key palliative care interventions, the gaps in implementation of interventions to address these needs in routine care, and to major quality Indicators concerning combined palliative and cancer treatment for the study patients and their family members.
3. To develop tailored interventions for addressing key palliative care needs to be applied in busy oncology practices

Methods:

A mixt method study was performed with a

a. qualitative research component used to define the instruments used further in collecting needs-based data – focus groups to develop perceived key indicators for palliative care (KI-PCC) and Quality of Death and Dying (QoDD) research tool
b. quantitative research component in the form of a prospective, longitudinal, multicentre data collection in 5 institutions in Romania and 1 institution in Switzerland for 6 months or until death (depending what comes first) with validated tools for Palliative Care needs
c. consensus conference with research group and international experts who work in combined clinical oncology and combined palliative care to define tailored palliative care intervention for oncology practice. Care pathways were agreed and further tested in pilot studies in all centres on 20 cancer patients
d. education – with test of knowledge acquisition at the end of the training

Other instruments use in research were concerning measurement of symptom intensity (IPOS-short validation was performed) and health related quality of life (EQ5D)

Results

Phase 1 – focus groups and validation of research tools – KI-PCC and OoDD

The tools were initially developed in English and translated in Romanian and German with special attention given to cultural adaptation – for example in Romania the questions were formulated to not force patients to discuss about their cancer diagnosis if they were unwilling. Afterwards the focus groups were used for cognitive debriefing with patients and staff and family members

Tab. 11 Demographic data for staff participants in Focus group Brasov

Nr.	Age	Gender (F/M)	Profession	Years of professional experience	Palliative Care training type	Involved in the Reality Map data collection	Involved in the care of patients that were/are in the Reality Map data collection y/n
1	58	M	GP	32	subspecialty	no	no
2	39	F	nurse	9	no	no	no
3	42	F	nurse	16	courses	no	no
4	46	F	oncologist	19	subspecialty	yes	yes
5	39	F	nurse	17	courses	yes	yes
6	44	F	nurse	26	courses	no	yes
7	50	F	GP	19	subspecialty	no	yes

We presented the results in the EAPC research congress in Lleida in 2014 in 2 papers [21], [22]

The short version final version of the Quality of Death and Dying questionnaire has 17 items and is available in Romanian and German

Each item includes a filter question that reports exactly what happened in the last period of the deceased's life, followed by a score.

The first 10 questions want to evaluate the frequency and use the following answer options:

0 (never) 1 (rarely) 2 (sometimes) 3 (often) 4 (most of the time) and 5 (all the time)

1. How often did you think Mr. / Mrs. ________________ had the pain under control?
2. How often did you find that Mr. / Mrs. _____________ managed to control what was happening around him?
3. How often could Mr. / Mrs. _______________ retain his urine / stool?
4. How often could Mr./Ms. .... breathe comfortably?
5. How often did you find that Mr. ________________ is reconciled with the fact that he will die?
6. How often have you felt that Mr. ________________ is not afraid of death?
7. How often did Mr. / Mrs. laugh or smile ....?
8. How often do you think Mr. ______________ was concerned about the suffering of loved ones?
9. How often do you think Mr. ______________ was able to maintain his own dignity and self-esteem?
10. How often could Mr./Ms. .... to spend time with your family and friends?

The last 7 questions assess whether a certain aspect existed and the answer options are YES or NO.

11. Was Mr. / Mrs. .... touched or hugged by loved ones?
12. All care costs of Mr / Ms .... were covered by health insurance?
13. Did he say goodbye Mr. / Mrs. .... from his loved ones?
14. Received Mr. / Mrs. .... the visit of a spiritual counselor or a clergyman (priest, pastor, clergyman)?
15. Dialysis or a mechanical ventilation device was used to prolong the life of Mr. / Mrs. ....?

16. Did Mr. / Mrs. .... try to hasten his death by refusing food or a certain treatment?

17. Did Mr. / Mrs. .... make the funeral preparations before death?

The validate KI-PCC tool has been adjusted and a special item on spirituality was added and 3 subscales were formulated to accommodate to the way of administration of the tool (to be directly used by the staff, version for patient's self-assessment, version for hetero-evaluation by a family member)

The KI_PCC health care professional version is presented below

The following questions are asked of all patients regardless of their disease stage for the purpose of this study.

1. Understanding the disease

a) Do you have all the information you need to understand your illness?

☐ yes ☐ no

b) Describe in your own words what you understand about your illness and its stage (ask these questions regardless of whether the patient answered the previous questions!):

....

Do not ask the patient the following question, but make a conclusion based on what you think he understood about the disease:

☐ Total understanding ☐ Partial understanding ☐ No understanding

c) In the last six months, have at least one of your nurses or other specialists asked you about your illness and taken the time to explain what it entails?

yes ☐ no ☐ I don't know / remember FRC medical-patient interaction referral visit

Patient number:

d) If so, which specialist (do you know) and how often? Profession (eg doctor, nurse, other specialists) How many times has he / she explained / asked you?

☐ once ☐ several times ☐ of ...... times ☐ I don't know / I don't remember

2. Symptoms

a) Have you experienced one or more of the following annoying symptoms in the last six months such as: pain, fatigue, nausea, loss of appetite, shortness of breath, depression, anxiety, others?

☐ yes ☐ no ☐ I don't know / I don't remember

If so, what were / were the main symptoms?

Symptom 1: ....

Symptom 2: ....

Symptom 3: ....

Symptom 4: ....

b) In the last six months, have at least one of the doctors, nurses, or other specialists been actively involved in trying to improve your condition (for each of the symptoms)?

3. Decision making

a) Have there been any changes in your treatment or new decisions about it in the last six months?

☐ yes ☐ no ☐ I don't know / I don't remember

b) In the last six months have you had any side effects such as fatigue, weakness, nausea, stomatitis, diarrhea, neuropathy, dermatological problems, infections (febrile neuropenia) that would have required a reconsideration of treatment?

☐ yes ☐ no ☐ I don't know / I don't remember

If yes, indicate: ....

c) If the answer is yes to 3a) or 3b): did you have the chance to get involved in the decision regarding your treatment as you would have liked?

☐ yes ☐ no ☐ I don't know / I don't remember

4. Spirituality

a) In the last six months, would you feel the need to satisfy your religious / spiritual needs (values and meaning of life, inner peace, peace with those around you / God)?

☐ yes ☐ no ☐ I don't know / I don't remember

b) If so, was this need sufficiently / satisfactorily addressed by one of the doctors, nurses, hospital priest or other specialists?

☐ yes ☐ no ☐ I don't know / I don't remember

If so, by whom (doctor, nurse or other specialists)?

....

5. The end of life

Introduce these questions to the patient as follows:

As mentioned in the introduction, we ask these questions regardless of the current situation of your disease. Patients with serious illnesses usually have problems with certain aspects, such as the progression of the disease and the end of life. We will first ask you if you have had such concerns, then we want to know if you want to talk about them with a specialist.

a) In the last six months you have also worried about ...

- the fact that the disease is progressing?

☐ yes ☐ no ☐ I don't know / I don't remember

- that you could have sufferings that cannot be alleviated even by medical specialists?

☐ yes ☐ no ☐ I don't know / I don't remember

- that your remaining time is limited?

☐ yes ☐ no ☐ I don't know / I don't remember

- that the family is not prepared to deal with the situation?

☐ yes ☐ no ☐ I don't know / I don't remember

- that you will not be taken care of at the place where you would like (eg, at home)?

☐ yes ☐ no ☐ I don't know / I don't remember

- that there are unclear things related to material aspects, inheritances?

☐ yes ☐ no ☐ I don't know / I don't remember

- others, please mention:

....

b) If the answer is yes to one of the above questions, do you want to talk about one of these concerns?

☐ yes ☐ no ☐ I don't know / I don't remember

c) If you answered yes to point b), was this need met by your doctor, nurse or other specialist?

☐ yes ☐ no ☐ I don't know / I don't remember

If so, by whom (doctor, nurse or other specialists)?

....

Specialized and family support

a) Has home care been a burden in the last six months and did you feel the need or benefit from the help of a doctor / nurse?

☐ yes ☐ no ☐ I don't know

b) In the last six months, did you need to be taken to the Emergency room ?

☐ yes ☐ no ☐ I don't know

c) If the answer is yes to 6a) or b), in the last six months did one of the doctors, nurses or another specialist offer you a care plan in cooperation with other medical service providers or specialists?

☐ yes ☐ no ☐ I don't know

If so, by whom (doctor, nurse or other specialists)?

....

d) Does the family play an important role in your care?

☐ yes ☐ no ☐ not applicable

e) if the answer to d) is positive has at least one of your doctors or nurses, or has another specialist provided family support from the time of diagnosis?

☐ yes ☐ no ☐ I don't know

If so, by whom (doctor, nurse or other specialists)?

Phase 2 – quantitative research -longitudinal study

During the 6 months of the longitudinal study 268 patients have been enrolled in all 5 centers in Romania. The demographic characteristics of the patients are in the table below

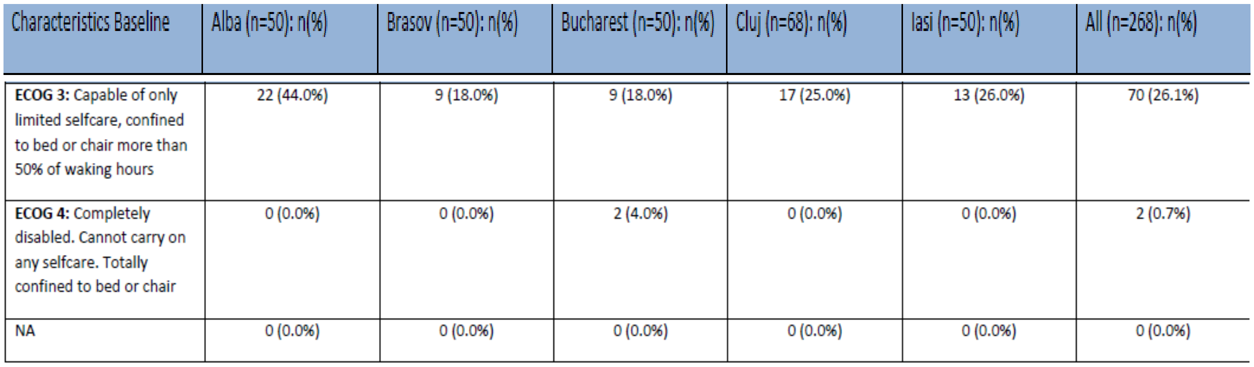
Tab. 12 Patients demographics

Characteristics Baseline	Alba (n=50): n(%)	Brasov (n=50): n(%)	Bucharest (n=50): n(%)	Cluj (n=68): n(%)	Iasi (n=50): n(%)	All (n=268): n(%)
female sex	20 (40.0%)	29 (58.0%)	23 (46.0%)	38 (55.9%)	19 (38.0%)	129 (48.1%)
tumour type						
Lung cancer	15 (30%)	9 (18%)	21 (42%)	11 (16.2%)	11 (22%)	67 (25%)
GI	18 (36%)	16 (32%)	14(28%)	11(16.2%)	16(32%)	75 (28%)
Genitourinary	2 (4.0%)	2 (12.0%)	4 (8.0%)	7 (10.3%)	6 (12.0%)	21 (7.8%)
Breast	4 (8.0%)	8 (16.0%)	4 (8.0%)	5 (7.4%)	5 (10.0%)	26 (9.7%)
Gynecological	2 (4.0%)	6 (12.0%)	4 (8.0%)	21 (30.9%)	4 (8.0%)	37 (13.8%)
other (Sarkoma, head-neck)	9 (18.0%)	9 (18.0%)	3 (6.0%)	13 (19.1%)	8 (16.0%)	42 (15.7%)
Marital status						
single	3 (6.0%)	4 (8.0%)	3 (6.0%)	5 (7.4%)	2 (4.0%)	17 (6.3%)
Married/ cohabitating	40 (80.0%)	29 (58.0%)	37 (74.0%)	52 (76.5%)	40 (80.0%)	198 (73.9%)
Divorced/ separated	2 (4.0%)	6 (12.0%)	5 (10.0%)	3 (4.4%)	2 (4.0%)	18 (6.7%)
Widowed	5 (10.0%)	11 (22.0%)	4 (8.0%)	7 (10.3%)	6 (12.0%)	33 (12.3%)
Missing	0 (0.0%)	0 (0.0%)	1 (2.0%)	1 (1.5%)	0 (0.0%)	2 (0.7%)

Concerning needs the majority of patients were having a ECOG 2 performance status that indicates that they were still ambulatory but unable to do activities even household ones.

Tab 13 ECOG performance status of enrolled patients

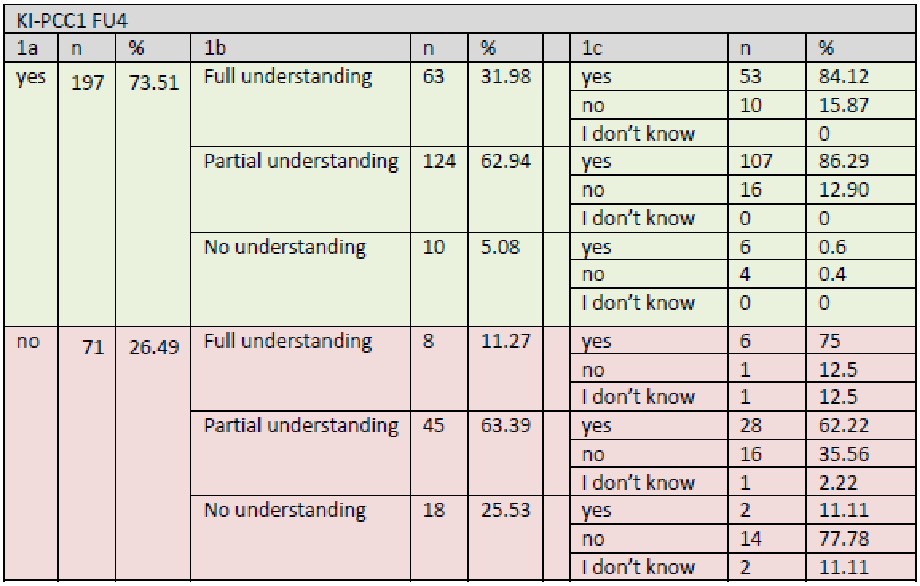
ECOG grade						
ECOG 0: Fully active, able to carry on all pre-disease performance without restriction	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.5%)	0 (0.0%)	1 (0.4%)
ECOG 1: Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work	20 (40.0%)	12 (24.0%)	14 (28.0%)	12 (17.6%)	21 (42.0%)	79 (29.5%)
ECOG 2: Ambulatory and capable of all selfcare but unable to carry out any work activities. Up and about more than 50% of waking hours	8 (16.0%)	29 (58.0%)	25 (50.0%)	38 (55.9%)	16 (32.0%)	116 (43.3%)



Characteristics Baseline	Alba (n=50): n(%)	Brasov (n=50): n(%)	Bucharest (n=50): n(%)	Cluj (n=68): n(%)	Iasi (n=50): n(%)	All (n=268): n(%)
ECOG 3: Capable of only limited selfcare, confined to bed or chair more than 50% of waking hours	22 (44.0%)	9 (18.0%)	9 (18.0%)	17 (25.0%)	13 (26.0%)	70 (26.1%)
ECOG 4: Completely disabled. Cannot carry on any selfcare. Totally confined to bed or chair	0 (0.0%)	0 (0.0%)	2 (4.0%)	0 (0.0%)	0 (0.0%)	2 (0.7%)
NA	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

Concerning the main domains in the KI-PCC the results showed that 2/3 of patients enrolled had a partial understanding of their illness regardless of their need for further information or not ; and a larger percentage of those who had no understanding of the disease showed no willingness to find out more about their illness

Tab. 14 Need for information and Illness understanding

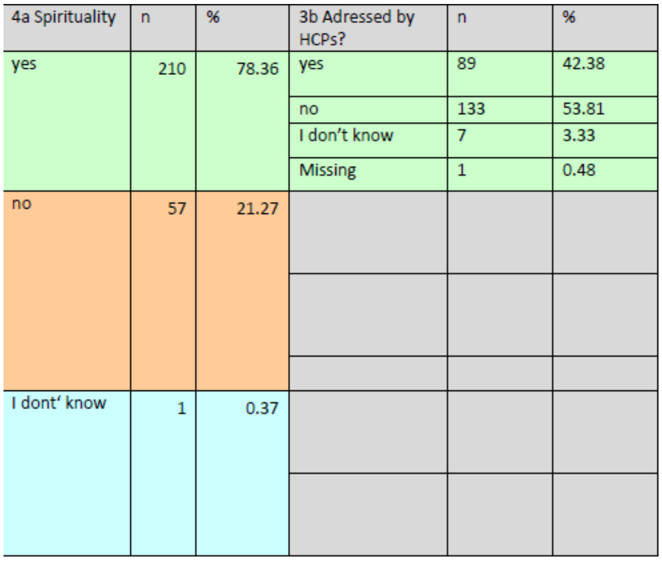


KI-PCC1 FU4									
1a	n	%	1b	n	%		1c	n	%
yes	197	73.51	Full understanding	63	31.98		yes	53	84.12
							no	10	15.87
							I don't know		0
			Partial understanding	124	62.94		yes	107	86.29
							no	16	12.90
							I don't know	0	0
			No understanding	10	5.08		yes	6	0.6
							no	4	0.4
							I don't know	0	0
no	71	26.49	Full understanding	8	11.27		yes	6	75
							no	1	12.5
							I don't know	1	12.5
			Partial understanding	45	63.39		yes	28	62.22
							no	16	35.56
							I don't know	1	2.22
			No understanding	18	25.53		yes	2	11.11
							no	14	77.78
							I don't know	2	11.11

Concerning symptoms 95,84 % of enrolled patients had uncontrolled symptoms, over 60 % of them having 3 or 4 uncontrolled symptoms simultaneously

Concerning spiritual and religious needs over three quarters of the patients had such needs and they were address in less than 50% of cases

Tab 15. Spiritual needs



4a Spirituality	n	%	3b Adressed by HCPs?	n	%
yes	210	78.36	yes	89	42.38
			no	133	53.81
			I don't know	7	3.33
			Missing	1	0.48
no	57	21.27			
I dont' know	1	0.37			

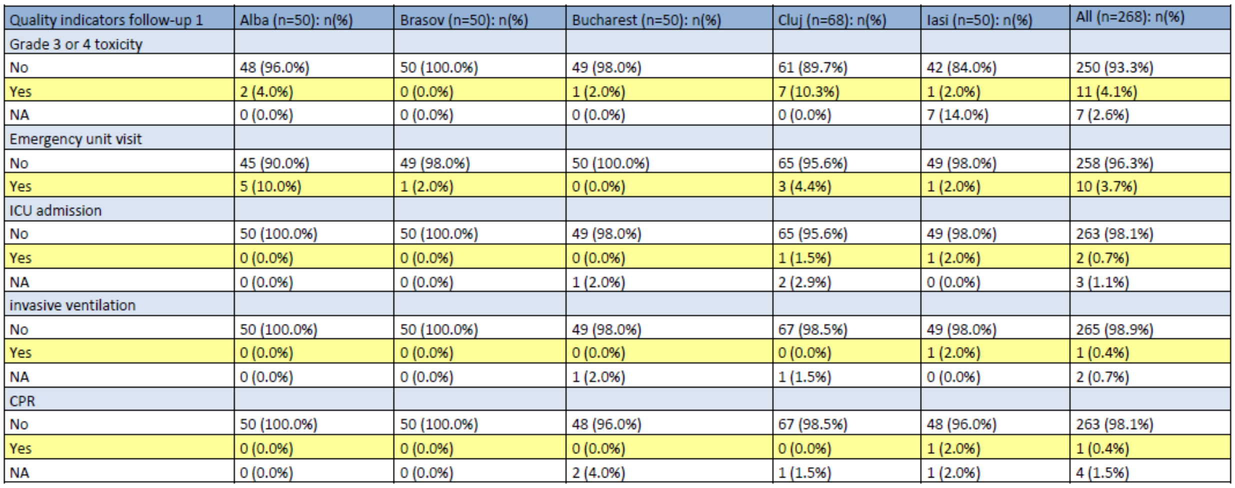
The major worries that patients acknowledged were concerning the spread of the illness and the fact that their suffering might be not relieved, followed in lower percentages by worries for their families (36.94), respect for their wishes related to the place of care(16,09) and unfinished financial businesses

Tab 16. Patients worries

5a- specific worries	n	%	5b) Want to talk about?	n	%	5c Need adresses	n	%
Illness spreading **yes**	166	61.94	yes	52	31.33	yes	34	65.38
						no	14	26.92
						don't know	4	7.69
						Missing	0	0
			no	94	56.63			
			Don't know	19	11.45			
			Missing	1	0.60			
Suffering that cannot relieved **yes**	127	47.57	yes	40	31.50	yes	22	55.00
						No	14	35.00
						don't know	4	10.00
						Missing	0	0
			no	69	54.33			
			Don't know	17	13.39			
			Missing	1	0.79			

In terms of quality indicators for the integrated oncology -palliative care interventions we chose to analyse toxicity of chemotherapy, visits to emergency unit, intensive care admissions, invasive ventilation and resuscitation. The results were surprisingy positive with very low scores for all these indicators see tab 14

Tab. 17 Quality indicators for palliative care



Quality indicators follow-up 1	Alba (n=50): n(%)	Brasov (n=50): n(%)	Bucharest (n=50): n(%)	Cluj (n=68): n(%)	Iasi (n=50): n(%)	All (n=268): n(%)
Grade 3 or 4 toxicity						
No	48 (96.0%)	50 (100.0%)	49 (98.0%)	61 (89.7%)	42 (84.0%)	250 (93.3%)
Yes	2 (4.0%)	0 (0.0%)	1 (2.0%)	7 (10.3%)	1 (2.0%)	11 (4.1%)
NA	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (14.0%)	7 (2.6%)
Emergency unit visit						
No	45 (90.0%)	49 (98.0%)	50 (100.0%)	65 (95.6%)	49 (98.0%)	258 (96.3%)
Yes	5 (10.0%)	1 (2.0%)	0 (0.0%)	3 (4.4%)	1 (2.0%)	10 (3.7%)
ICU admission						
No	50 (100.0%)	50 (100.0%)	49 (98.0%)	65 (95.6%)	49 (98.0%)	263 (98.1%)
Yes	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.5%)	1 (2.0%)	2 (0.7%)
NA	0 (0.0%)	0 (0.0%)	1 (2.0%)	2 (2.9%)	0 (0.0%)	3 (1.1%)
invasive ventilation						
No	50 (100.0%)	50 (100.0%)	49 (98.0%)	67 (98.5%)	49 (98.0%)	265 (98.9%)
Yes	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (2.0%)	1 (0.4%)
NA	0 (0.0%)	0 (0.0%)	1 (2.0%)	1 (1.5%)	0 (0.0%)	2 (0.7%)
CPR						
No	50 (100.0%)	50 (100.0%)	48 (96.0%)	67 (98.5%)	48 (96.0%)	263 (98.1%)
Yes	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (2.0%)	1 (0.4%)
NA	0 (0.0%)	0 (0.0%)	2 (4.0%)	1 (1.5%)	1 (2.0%)	4 (1.5%)

The results were presented at the EAPC research congress in 2016 in two papers [23],[24]

Conclusion: The study has produced reliable tools for use in cancer centers with the purpose to evaluate patient's needs (KI-PCC) and to assess the family perspective on the quality of care around death (QoDD). In the longitudinal study an alarm signal was raised about unmet needs in all 7 domains and the care pathways that we tested to address the needs were effective if applied by cancer doctors. An incentive in the form of extra funding for services is needed if these interventions are to be applied at a national scale.

2.1.4 Palliative care in organ failures

Although palliative care has been developed initially to address the needs of patients with advanced cancer it has become quickly apparent that other groups of diseases can also benefit from its principles and science. Even more, other categories like patients with cardiovascular diseases represent a larger group (38.5%) than those with cancer (34%) followed by a lower percent of patients with chronic respiratory diseases (10.3%)[25].

At European level less than 10 % of those who die with heart failure receive palliative care[26] regardless of the fact that the disease is a serios life limiting one with a median survival after the first HF-related hospitalization of only 2.4 years[27]. In Romanian there is no official information yet available concerning the number of heart failure patients who need palliative care.

In my role as leader for the development of palliative care services in Romania it was necessary to understand the existing evidence on optimal modalities to provide palliative care for non-cancer patients. In order to do this, two systematic reviews have been undertaken focused on heart failure and chronic obstructive pulmonary disease, as follows:

2.1.4.1 Palliative Care in Heart Failure: A Public Health Emergency <u>Daniela Mosoiu</u>, Liliana Rogozea, Alison Landon, Alina Bisoc Diana Tint American Journal of Therapeutics 2020 27 (2), e204-e223[28]

The aim of the review was to identify PC interventions that are cost effective for patients with HF and modalities for integration of such interventions in routine care of cardiac patients in countries with limited resources like Romania

Method We conducted an electronic search in PubMed to identify all systematic reviews that have been published between 2014 and 2019 and identified initially 136 articles on the research topic and 14 articles met the inclusion exclusion criteria. The findings from the review were organized around the 8 domains of the framework for Clinical Practice Guidelines for Quality PC [29]

Table 18. Domains of the framework for Clinical Practice Guidelines for Quality Palliative Care

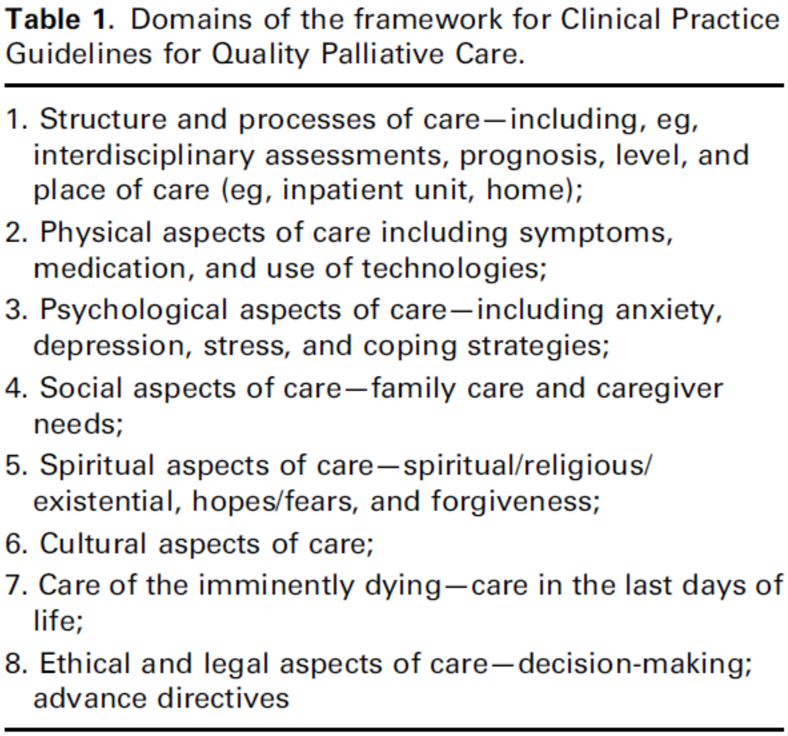


Table 1. Domains of the framework for Clinical Practice Guidelines for Quality Palliative Care.

1. Structure and processes of care—including, eg, interdisciplinary assessments, prognosis, level, and place of care (eg, inpatient unit, home);
2. Physical aspects of care including symptoms, medication, and use of technologies;
3. Psychological aspects of care—including anxiety, depression, stress, and coping strategies;
4. Social aspects of care—family care and caregiver needs;
5. Spiritual aspects of care—spiritual/religious/existential, hopes/fears, and forgiveness;
6. Cultural aspects of care;
7. Care of the imminently dying—care in the last days of life;
8. Ethical and legal aspects of care—decision-making; advance directives

from Mosoiu 2020 Palliative care in heart failure

RESULTS Fourteen articles were selected to be included in the review with most of the articles were focusing on the Structure and process of care domain (12/14) followed by the physical and psychological aspects of care (7/14)

Under the Structure and processes of care five major themes emerged –

1. *Lack of understanding of the concept of PC*
2. *Difficulty to establish prognosis due to fluctuant disease trajectory*
3. *Training needs for basic palliative care*
4. *Need for holistic assessment done by a multidisciplinary team*
5. *Home care as a viable cost-effective option to deliver palliative care to HF patients*

PC is understood by cardiologists as terminal care, and implemented last days of patients' life[30,31,32] regardless of the fact that the guidelines recommend early PC integration in the disease trajectory, concomitant with HF-directed therapies. Timing of PC referral is more often linked with terminal care[33].

The use of prognostic indicators as triggers for specialist PC referral is not appropriate for HF patients as there is a constant risk of sudden cardiac death[31,34] and because prognostic criteria use clinicians' judgment for PC referral[32], but a third of them , report a low or very low level of confidence in establishing and initiating prognosis or end of-life discussions, enrolling patients in hospice, or providing end-of-life care[35].

Basic palliative care skills should include symptom management and advanced care planning[36]. Thirteen out of the 19 European HF guidelines recommend the assessment of the patient's physical, psychological, social, and spiritual needs by a multidisciplinary PC team including professionals such as physicians, disease specialists, nurses, psychologists, chaplains, nutritionists, and physiotherapists[33], but only 8 of 19 include instructions as to when these assessments should take place.

Home-based PC integrated into the management of HF patients demonstrated an improved quality of life, reduction in symptoms, as well as fewer and reduced hospital admissions and readmissions, an increase in home deaths, fewer visits to the emergency department fewer overall admissions, fewer intensive care unit admissions, and less frequent primary care visits *in those with severe congestive HF* [30,37,34,38,39,40] home-based PC consults in HF patients reduced the risk of readmission by 42% [RR 0.58 95% CI (0.44, 0.77)].

The second domain -Physical aspects of care- has highlighted 3 major teams

PC as an effective modality to relief symptoms with fatigue, dyspnea, disturbed sleep being the most prevalent and distressing ones[41,40,42]. Pain was found more often and with higher intensity scores in patients with lower ejection fraction[31].

1. *Opioids can be used in the management of dyspnoea* with low doses of morphine being effective and safe[43, 44]. Also, the addition of benzodiazepines to opioids improves breathlessness[45].
2. In patients needing a device to assist cardiac function the guidelines recommend a prior palliative care consultation as the decision of not starting the procedure is less complex than the one to stop devices

The other six domains from the quality framework were less well represented in the articles included in the review. The themes that emerged were as follows

1. Anxiety and depression are present more frequent in female patients[46] and are better controlled if PC intervention are integrated early with routine cardiac care[42].

2. There is a mismatch between the cardiology providers unwillingness to discuss information such as poor prognosis[31,47] and patients communication needs, about the diagnosis, expected disease trajectory, related symptoms, their fears, doubts, and concerns[48, 49].

3. the Hf Patient and their main caregiver constitute a dynamic dyadic interdependence that is more patient-oriented in initial stages of HF and more caregiver-oriented in more advanced stages[50]. In 50% of cases, there are different perspectives with regard to the illness, management, health care issues, and end-of-life decisions between the 2 members of this dyad [51].

4. Family members caring for HF patients have also several needs (to understand the disease and prognosis, to be educated about the management of the disease and care coordination to receive emotional and spiritual support[52]. Risk factors that expose caregiver to develop various pathologies as consequence of the burden of care are: younger age, female sex, low social support, poor physical health, and previous symptoms of depression and/or anxiety[47].

5. The prolonged care for HF patients puts an economic strain on family members. They offer in average 32.1 hours of support per week with an average of 48.9 months during the illness span[52,53].

6. PC interventions were associated with increased documentation of care preferences, specifically documentation of health care proxy, advance directive, do not resuscitate orders, and funeral arrangements[40,54,52,55]. With regard to resuscitation preferences, less than a quarter of HF patients admitted to hospital preferred not to be resuscitated[56].

7. One single article in the review identified spiritual needs, such as the search for meaning and exploration of personal values when confronted with mortality[44].

CONCLUSIONS "There is evidence that PC in HF improves outcomes for patients and caregivers. Because of the unpredictability of the disease and difficulty in prognostication, PC should be initiated from the point of diagnosis of HF. To do so, basic education in PC needs to be introduced early in the training of cardiology staff. Basic training programs need to focus on concept definitions and delimitation of PC from terminal care, symptom management, communication, and decision-making. For specialized PC services, there is increasing evidence that home-based PC services impact on patients' physical and emotional wellbeing, while decreasing medical service utilization. Fatigue, dyspnea, and pain are symptoms frequently encountered in HF patients, and evidence for the usefulness and safety of opioids for dyspnea is increasing. Family caregivers offer a considerable amount of care during the HF disease trajectory and should be assessed for risk and supported in their care management and care coordination"[28]

2.1.4.2 Palliative Care Initiation in Chronic Obstructive Pulmonary Disease Prognosis-Based, Symptoms-Based or Needs-Based? RM Rajnoveanu, AG Rajnoveanu, AP Fildan, DA Todea, MA Man, Milena Adina Man, Nicoleta Stefania Motoc, Daniela Mosoiu International Journal of Chronic Obstructive Pulmonary Disease 2020 15, 1591-1600[57]

The second review concerning palliative care in non-cancer patients was focused not on demonstrating the need for palliative care but on modalities for appreciation of the moment of initiating for these services and best modalities for determining this moment.

The aim of the review was to help clinicians to identify research validated tools able to predict poor survival in COPD patients and the criteria for early palliative care integration in COPD care. The following research questions was addressed: Should palliative care be initiated exclusively based on prognosis variables or multicomponent indices in COPD patients?

Method: we performed a PubMed (MEDLINE) search to retrieve systematic reviews and reviews published in English in the last five years (2015 – Jan 6, 2020).

The PRISMA selection diagram is in the fig. 10 below. 10 studies have met the inclusion and exclusion criteria's and a narrative synthesis was performed. Four major themes have been identified

1. ***Difficulties in establishing a correct prognosis for COPD patient was found as an important barrier to provide PC***

Even though symptoms burden is similar or even greater in COPD patients compared to inoperable lung cancer[58] COPD patients are less likely to be candidates for receiving PC and when that happens, they tend to be referred later compared to oncological patients[59]. The moment to initiate PC is not limited to the terminal phase, it should be integrated as part of the complex management of the disease, in order to improve symptoms, quality of life and even survival. Unfortunately, the reality looks different after a search in literature. Only one guideline - the American Thoracic Society/European Respiratory Society statement on pulmonary rehabilitation - clearly advocate for early inclusion of Palliative Care alongside the conventional therapy[60]. Therefore, the perception that PC is needed at the “end-of-life” is still common, even among clinicians[31].

2. ***The role of prognostic variables and scores proposed for initiating PC is to help primary care clinicians in the decision to discuss and establish with patients and their families the moment to initiate PC, not to use them as a sole screening tool for PC delivery***

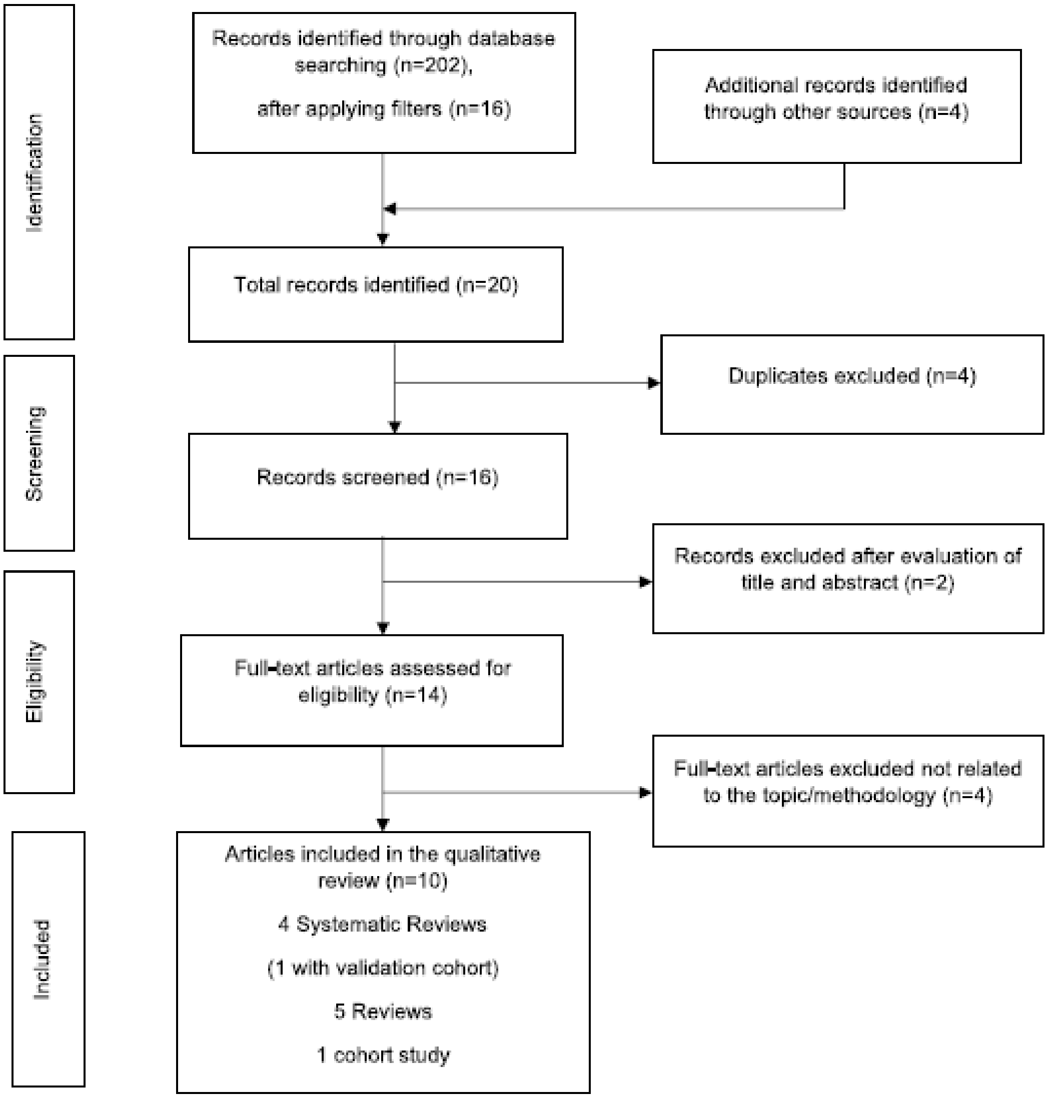
Several prognosticating factors are available[61]. 10 predictive mortality variables with statistical significance ($p\text{-}value \leq 0.05$) were identified: Age over 70, physical dependence, poor quality of life, low BMI, the presence of comorbidities, depression, severe dyspnea or multicomponent indices **≥7** like BODE, BODEX or CODEX are considered important predictors[58]. Still, their usefulness to predict survival on short or medium term is limited and cannot be applied to all COPD patients. The reliability of the suggested variables and indices criteria for initiating PC based on expected poor vital prognosis is still equivocal because none of the proposed criteria offered a sufficient reliability. They should not be used exclusively as indications to start PC, but together with other elements, such as refractory symptoms or/and patient’s preferences. The ‘surprise-question physicians ask: "Would I be surprised if my patients were to die in the next 12 months?" can be additionally used[58] as a tool for identifying end-stage patients. If the answer is ‘no,’ more focus on symptom management, advance care planning (ACP) and palliative care should be considered[59].

Smith et al highlighted the same conclusion in their systematic review[62]. They developed a new index the **B-AE-D score -** were **B** stands for - body mass index, **AE** - severe acute exacerbation of COPD, **D**- modified Medical Research Council dyspnea severity.

Recently, in 2019, Bloom et al. used a risk model to predict mortality at 1 year based on prognostic factors routinely measured in the primary care **- the BARC index,** acronym derived from[63]**: B** - body mass index and blood results, **A** – age, **R** - respiratory variables (airflow obstruction, exacerbations, smoking, **C** - comorbidities.

The role of the risk score is to help primary care clinicians in the decision to discuss and establish with patients and their families the moment to initiate PC, not to use it as a sole screening tool for PC[63].

Fig. 10 Literature identification process (PRISMA flowchart)



From Rajnoveanu 2020 [57]

3. Referral to Palliative Care for COPD patients should be based on identified symptoms combined with prognostic factor

High prevalence of troublesome symptoms like dyspnoea, fatigue, cachexia, anxiety, or depression that can be found during the course of the disease[64, 65] . When symptoms do not respond regardless of the management of the underlying disease palliative care must be offered alongside disease targeted therapies[64]. Both systematic reviews of Almagro[58] and Smith[62], highlighted the importance of initiation of palliative care interventions not exclusively prognostic-based, but also need-based, especially in patients with refractory symptoms[58,62].

Maddocks et al. proposed models of integrating PC which are more needs-based rather than prognosis-based[66]. Timely treatment of dyspnoea is increasing survival alongside of improved quality of life [67]. Untreated **breathlessness** leads on the other hand to increased hospitalization psychological suffering and premature mortality[65].

The **unidimensional** exacerbations of chronic pulmonary disease respiratory symptom diary of daily symptom severity (**E-RS)** can be used to measure the intensity of breathlessness as a summary score in daily life in patients with stable COPD. The visual analogue scale (**VAS**) or numeric rating scale (**NRS**) are other tools to evaluate the intensity or unpleasantness of refractory chronic breathlessness in different cardiopulmonary disease as COPD, ILD, cancer and heart failure[65]. The weekly mean **SOBDA score** is a valid, reliable, and responsive measure of shortness of breath during daily activities in COPD outpatients.

For the **multidimensional** impact of breathlessness, the **Dyspnea-12** score can be used. It captures the intensity, discomfort, the emotional responses and the unpleasantness, with no reference to activities, in patients with COPD, ILD, asthma or heart failure. It is a quite simple, short tool, available in several languages. It strongly correlates with anxiety, depression, quality of life, and the mMRC breathlessness scale[68]. **The Multidimensional Dyspnea Profile (MDP)** is another tool which evaluates the complex impact of breathlessness during a user-defined period. In case that self-reported breathlessness cannot be assessed, proxy measurements from carers specialized in palliative care can be used for symptom management[69].

4. The complex unmet needs of COPD patients

There are three domains were COPD patient expressed needs that were not addressed properly 1) information about the disease (terminology, aetiology, prognosis); 2) physical, emotional, spiritual, financial and social support needs, and 3) care needs[70] .

Another important unmet needs in providing PC in COPD patients is the late referrals in patient's disease. The reasons are complex, from the lack of PC trained healthcare, to clinicians who are not prepared to provide specialized palliative care services. Avoiding conversations about advance care planning and end-of-life issues is also quite frequent among physicians[64]. Patients report rarely discussing with their doctors about the prognosis of the disease, the opportunity to receive palliative care services even in advanced forms of the disease[71].

Conclusion

The review identified that the most viable model is the concomitant model were Palliative care is offered alongside treatment targeted to the disease and referrals need to take in account both prognosis factors but also identified symptoms

2.1.5. Defining unit cost for palliative care services and a costing framework for palliative care homebased services and inpatient units

Appropriate funding for health care services is a vital element that can either foster or hinder service development and can contribute towards a better or a lower quality of the delivery of these services. Palliative care is a developing service subspecialty inside the Romanian health care system and to make a convincing argument in from of legislator and funding bodies scientific well argument data needs to be presented as a claim for the base of financing for these new palliative care services.

Developing a costing framework for palliative care services D Mosoiu, M Dumitrescu, SR Connor Journal of pain and symptom management 2014 48 (4), 719-729[72]

The aim of the research

We embarked in a research project to understand elements of cost for palliative care services in different settings and to unite them in a comprehensive matrix that would allow a precise evaluation of the cost of these services. We hoped that the framework could be a resource at service level but also for decision makers at national level.

Method The project used a combination of research strategies from retrospective studies, to expert group involvement, surveys, to prospective collection of cost data and was organized in several steps.

The first stage was the preparatory phase and we used as research methodology a combination of nominal group technique with national experts in order to develop minimal standards for care, and surveys with district health and funding bodies to establish palliative care provision in the country and allocation and declared expenditure for Pc by various providers.

The surveys were sent to all the district health bodies and all the district insurance houses. Questions in the survey were concerning 3 major issues: identification of characteristics of palliative care service providers in each district, allocation of public resources towards eac palliative care provider and declared expenditures of these providers. The initial idea was to calculate an average cost per service. Data were requested under the freedom of information act[73].

The second stage was the core of the project and we used national and international expert groups work to define unit cost in various settings of PC delivery, develop the costing framework and the unit cost for home based and inpatient based palliative care services.

The third stage was not research but advocacy for inclusion of the newly calculated costs in the health care funding system.

Results

Stage 1- Survey Results- inconsistent information between the two authorities (district bords and financing body) and large variations among districts concerning allocated funds and cost/patient/day

Different from what we expected the returned data showed:

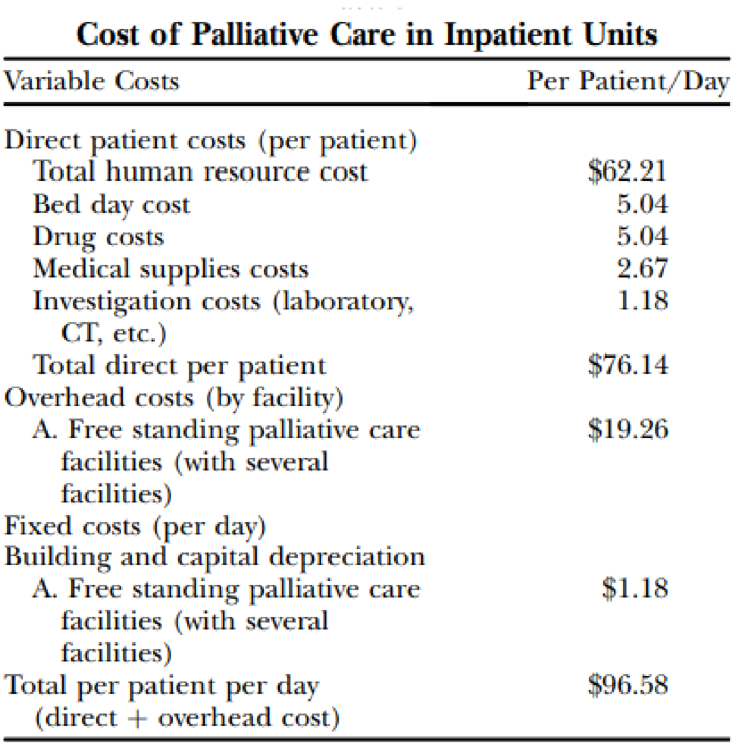
- discrepancies in data recording between the two official bodies in terms of palliative care service identification,
- large variety in resource allocation among inpatient palliative care services in different counties or even inside the same county with a 4.5 variation from $27 to $121 per day per patient in inpatient palliative care services, in accordance with a better or less successful negotiated process
- No funding was provided to home based palliative care services.
- Expenditure for a day of care for a patient showed the same large variation from minimum of $41 to a maximum of $500 but with no detailed breakdown of costs

As a result, it was pointless to calculate and average cost as it was unclear what it would represent and as a result there was a change in the protocol and expert group was set up to design standards of care for inpatient and home care services and nominal group technique was used to agree on the minimum staffing and care requirements

Stage 2: Unit Cost Calculations for inpatient and home care

The chosen unit cost were “day of care” – calculated at a value of **$30.37** for homecare services and “occupied bed per day” calculated at a value of **$96.58** for inpatient units. The value and the breakdown of these cost for the 2 settings are in the tables below

Table 19. Cost of **Palliative Care** in Inpatient Units



Cost of Palliative Care in Inpatient Units

Variable Costs	Per Patient/Day
Direct patient costs (per patient)	
Total human resource cost	$62.21
Bed day cost	5.04
Drug costs	5.04
Medical supplies costs	2.67
Investigation costs (laboratory, CT, etc.)	1.18
Total direct per patient	$76.14
Overhead costs (by facility)	
A. Free standing palliative care facilities (with several facilities)	$19.26
Fixed costs (per day)	
Building and capital depreciation	
A. Free standing palliative care facilities (with several facilities)	$1.18
Total per patient per day (direct + overhead cost)	$96.58

From Mosoiu D. Dumitrescu M. Connor S. JPSM 2014

In order to calculate staff-cost we measured contact time with patients and family members for each member of the interdisciplinary team including time for documenting the care. We added at the legal salary all legal bonuses that the staff was eligible for- psychological stress bonus, 50% for weekend shifts lunch tickets ($2.58 each, 21.25 days/month) and employer taxes (28.129% as of January 1, 2010)

We calculated also start up cost for refurbishing a palliative care department with 20 beds , that included also cost with equipment and initial training of the staff

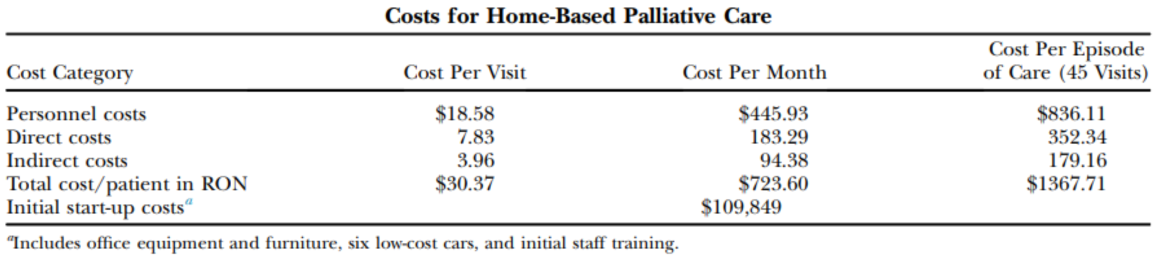
This costing framework does not include bereavement services.

For home based palliative care services we calculated average time for a first assessment home visit and average time for a monitoring visit for different members of the palliative care team and according to the retrospective study performed in the hospice on the deceased patients we calculated the average number of visits for a patient during the care of the home care service. The data that we obtain were the followings:

90 -120 minutes for an follow up or initial assessment (includes travel time and documentation)

45 visits in average during the care of a patient at home

Table 20. **Costs for Home-Based Palliative Care**



Costs for Home-Based Palliative Care

Cost Category	Cost Per Visit	Cost Per Month	Cost Per Episode of Care (45 Visits)
Personnel costs	$18.58	$445.93	$836.11
Direct costs	7.83	183.29	352.34
Indirect costs	3.96	94.38	179.16
Total cost/patient in RON	$30.37	$723.60	$1367.71
Initial start-up costs[a]		$109,849	

[a] Includes office equipment and furniture, six low-cost cars, and initial staff training.

From Mosoiu D. Dumitrescu M. Connor S. JPSM 2014

This costing framework also those not include bereavement services

Conclusion

The framework and units cost calculated in the project were used for developing funding policies for palliative care services in Romania and following the presentation of the results to the national insurance house the palliative home care services were included for reimbursement in the frame-contract.

2.2 PAIN MANAGEMENT FOR PALLIATIVE CARE PATIENTS IN ROMANIA

2.2.1 NMDA- ANTAGONISTS IN PAIN MANAGEMENT - Methadone

Methadone was discovered in 1938 by Max Bockmuhl and Gustav Ehart, who wanted to obtain a non-morphine opioid as an alternative to morphine. It is usually used not as a first line opoid but as an alternative when chronic pain in cancer is difficult to control[74,75].

PHARMACOKINETICS OF METADONE

Methadone is a white crystalline substance, odorless, with a bitter taste, very soluble in water, isopropranolol and chloroform and insoluble in ether and glycerine. It is available as tablets for oral suspension as a racemic solution.

Absorption Orally administered methadone is quickly absorbed from the intestine. After 30 minutes of administration, the drug is detected in the blood, but the peak plasma concentration is reached between 2.5-3 hours. The timing of the dose of the drug compared to the diet does not influence in any way its bioavailability. However, an alkaline environment leads to an increase in absorption, as evidenced by the use of omeprazole in combination with methadone. If we administer methadone rectally (microclyms or suppositories) its absorption and bioavailability is similar to that of morphine.

The ratio of effective doses in intramuscular injection to oral administration is ½ better than for morphine. A less used route is the sublingual route which has an absorption of 34% in the case of methadone compared to 18% in morphine and 51% in fentanyl (which can be administered in the form of lollipops). An alkalization of the oral environment to a A pH of 8.5 would increase the absorption of the lingual mucosa by 75%[76]. Inactivation at the first hepatic passage is of little importance. 92% bioavailability (36-100% after FDA) which explains the superior potency in oral administration, but the variations in availability are very large. The maximum plasma concentration is achieved about 3 hours after administration. The therapeutic plasma concentration of methadone is around 100-400 micrograms / l and the toxic plasma concentration is around 1000-2000 micrograms / Methadone is a lipophilic drug and is 90% bound to plasma proteins. It tends to accumulate in tissues and especially in adipose tissue. It is secreted in saliva, breast milk, amniotic fluid and crosses the placenta[77].

Metabolism Methadone is metabolised by N-demethylation by cytochrome P450 into an inactive metabolite that is eliminated primarily by the bile and less by the kidneys. The main enzyme responsible for N-demethylation of methadone is CYP3A4, with the lesser involvement of CYP1A2 and CYP2D6; CYP2B6 may play a part in metabolism as well. Due to genetic mutations in cytochrome P450 there are large individual variations in methadone metabolism[78]. The plasma half-life is long on average 35 hours with large individual variations (8-59 hours). Tissue accumulation as well as slow cleansing on the one hand increases the duration of the analgesic effect even at low plasma concentration but also explains the occurrence of adverse effects in a significant proportion due to its ability to accumulate. Methadone is excreted mainly in the faeces and an insignificant amount by the kidneys, which makes it useful in patients with chronic pain but who have impaired kidney function.

THERAPEUTIC ACTION OF METADONE

The mechanism of action of methadone is as a pure agonist on miu receptors, antagonist on N-methyl-D-aspartate receptors, its affinity for these receptors being nearly as high as that of ketamine[79,80], and inhibition of serotonin and norepinephrine reuptake[81]. This complex mechanism of action explains the effective therapeutic action. on different types of pain. It has a role as NMDA receptors antagonist and due to this it may prevent the development of tolerance to opioids and withdrawal syndrome[82,83,84] and can play an important role in patients experiencing neuropathic type pain[85,75,80,82,86,87].

Methadone has a central analgesic effect equal to that of morphine and a weak sedative action. It produces sleep only if prolonged insomnia is caused by pain. The effectiveness of analgesia after oral administration is equal to that after parenteral administration and therefore is superior to morphine in the therapy of pain in chronic diseases and postoperative pain. It is also an advantage that the ratio of analgesic potency versus risk of respiratory depression is higher than morphine. Analgesia occurs in 20-30 minutes after administration of p.o. The duration is the same as in the case of morphine but the intensity of the analgesic action is higher than that of morphine. It is estimated that 10 mg of methadone has an analgesic activity equivalent to 15 mg of morphine. The effect on tissue respiration and enzyme systems is similar to morphine. Increases the tonicity of the smooth muscles of the intestine, diminishing the propulsive contractions. However, constipation is weaker than morphine. Like morphine, it causes spasm of the bile ducts, which is why if we use this drug in biliary colic, it is necessary to combine it with antispasmodic.

SIDE EFFECTS OF METADONE:

Methadone has side effects similar to morphine but compared to morphine methadone induces less constipation[85,75,80,88,89,90], xerostomia[91] and sedation[92]. Due to reduces xerostomia and also to the incremental increase of plasma levels of methadone after regular administration this drug has been preferred as a first line analgesic when offering radiotherapy to patients with head and neck cancer. Due to the double effect on opioid and NMDA receptors, methadone can cause tolerance less frequently compared to other opioids.

Methadone has been associated with QT prolongation and occurrence of severe ventricular arrhythmias (torsade de pointes),more commonly associated (but not limited) to high doses of methadone (>200 mg/day)[93].

A specific side effect of methadone – ventricular arrythmia- needs to be presented as it has unjustly limited the use of methadone in pain management

In vitro and in vivo studies have shown that methadone inhibits potassium channels in the heart cell and prolongs the QT interval[94,95].

During treatment with methadone, cases of prolonged QT and torsade de pointes have been observed, complications that can occur but especially at high doses of over 200 mg / day. Although most cases have been treated for high-dose or multiple-dose pain, there have been reports of conducting disorders in some patients who have received regular doses but for the treatment of addiction[96].

The measurement of the QT segment is done from the beginning of the Q wave to the end of the T wave. The normal values of the QT interval are 0.332-0.420 seconds in men and 0.334-0.432 seconds in women. Values over 0.440 seconds are considered high. Extra precautions and careful monitoring should be taken in those patients who have favourable conditions such as hypokalemia, hypomagnesaemia, diuretic use, cardiac hypertrophy, patients using cardiac medication or anamnestic and clinical examination suggests a certain risk of arrhythmia. Patients who have had prolonged QT should be evaluated for risk factors such as cardiac medication or electrolyte abnormalities or concomitant medication that inhibits methadone metabolism.

The ventricular torsade has as a common cause the prolonged QT syndrome and is characterized by spindles of 6-10 enlarged QRS complexes that follow one another with or without free intervals. It is a polymorphic ventricular tachycardia, at the limit of ventricular flutter. QRS complexes progressively change their polarity, appearing to rotate around the isoelectric line called the torsade de pointes. This tachycardia is usually unsustainable but can also be sustained leading to syncope, ventricular fibrillation and sudden death.

Susan Jeffrey published a study in September 2008 that showed that at daily doses between 40mg and 600mg, the serum concentration was between 60ng / ml and 2580ng / ml. The researcher concluded that the deaths of patients with elevated plasma titrations of methadone were not due to overdoses of this drug but probably to the association between methadone and other drugs. So, pointing the finger at methadone and blaming all the evil seems to be a small mistake[97].

The recommendations of the safety guide for prescribing methadone are:

> Recommendation 1. (Disclosure) When clinicians prescribe methadone, they should inform patients about its risk of arrhythmia.
>
> Recommendation 2 (Clinical history) Clinicians should ask patients about any history of heart disease, arrhythmia, or syncope.
>
> Recommendation 3. (Screening) All patients should have an electrocardiogram before starting methadone treatment to measure the QTc interval and follow up on the electrocardiogram after 30 days and then every year. If the dose of methadone is higher than 100 mg / day or the patient has a history of syncope whose cause has not been elucidated, electrocardiogram screening is indicated for those patients who receive methadone and have multiple risk factors for prolonged QTc syndrome , family history of prolonged QT syndrome or sudden death or electrolyte depletion Screening is also

recommended when certain drugs that inhibit cytochrome P450 or that by their action lead to Qtc prolongation are combined with methadone.

Recommendation 4 (Risk classification) For patients whose QTc interval is between 450 milliseconds and 500 milliseconds, the possible risks and benefits should be discussed, but they will be monitored more frequently. If the QTc interval is greater than 500 milliseconds, methadone may be considered in lower doses or using a discontinuous regimen and the elimination of factors or medications that may cause hypokalemia. In this situation, the use of another analgesic therapy is indicated.

Recommendation 5 (Drug interactions) Clinicians should be aware of the interactions between methadone and other drugs that tend to prolong the QT interval or cause a decrease in methadone elimination. Patients at risk for prolonged QT syndrome are: 1. patients over 65 years of age 2. patients with heart disease 3. patients with type II diabetes with oral antidiabetics 4. patients with hypokalemia 5. patients with hypomagnesaemia 6. patients with a history of syncope Interactions with substances that depress the central nervous system If methadone is combined with other opioids, tranquilizers, hypnotics, phenothiazines lead to respiratory depression, hypotension, deep sedation and coma. Benzodiazepine abuse associated with methadone has the same depressant effect. The same happens with the association of methadone with alcohol[98]**.**

METADONE INDICATIONS – chronic intense pain from neoplastic diseases (step III on the WHO analgesia scale) – chronic non-oncological pain – traumatic pain, – rheumatic pains, – saturnine colic, – acute myocardial infarction, Acute pulmonary edema, – postoperative pain, – preparation of anesthesia and surgical operations. S – prophylactic for calming of whooping cough. – in initiating the detoxification treatment for morphine addicts. It will be given with great caution in obstetric analgesia (crosses the placental barrier).

2.2.2 Methadone as first line stong opioid for pain control

My interest in using methode as first choice for cancer patients with severe pain was a forced choice as methadone has been till 2005 the only strong opioid available for pain managemnt in Romania. After studying the literature we developed at Hospice Casa Sperantei for the clinical team 3 guidelines for initiating patients on methadone; conversion to methadone from other opoids and conversion from methadone to injectable morphine

Guideline 1 How to start treatment with Methadone in opioid naive patient?

In the initiation phase of the treatment, a dose of 2.5 mg-3 mg is administered orally every 6 hours (i.e. 4 times a day 2.5 mg or 3 mg). Because the constant plasma level is reached in a week, we maintain the starting dose and if breakthrough pain occurs, we control them by administering a dose of 1g (2 tablets of 500mg) of paracetamol p.o. After one week, if the pain is considered controlled (VAS below 3), the daily dose administered is maintained but it is spaced at 12 hours. daily.

Example

Day 1: to 7 4 x 2.5 mg Methadone +/- 1g Paracetamol for breakthrough pain

If after 7 days we achieve a good control of pain

Day 8: 2 x 5 mg Methadone plus for breakthrough pain we use the eighth part of the daily dose 10: 8 = 1.25 mg Methadone

If after 3 days of starting methadone treatment **the pain is not controlled**, an increase in dose is necessary but with an increase in the interval between administrations. The dose is increased to 5 mg of methadone administered at 8 hours (three times a day) At the end of the first week, if the result obtained is satisfactory and the pain is controlled, the therapeutic scheme is continued with this daily dose and the dose for the painful outbreak is fixed as 1/8 of the useful daily dose. Generally, if the patient requires more than 2 additional doses within 24 hours, it means that an increase in the daily dose is required.

Guideline 2 CONVERSION FROM MORPHINE TO METADONE

There are many other situations in which the patient uses another weak (eg tramadol) or strong (eg morphine) opioid in treatment and for some reason we need to switch to methadone. This process called conversion has a certain methodology so that no side effects occur from the new drug and on the other hand does not cause the patient's suffering due to lack of control of chronic pain.

How do we change treatment from morphine to methadone? The basic strategy behind morphine to methadone conversion is: STOP - START which means that morphine is completely stopped and the equivalent dose of methadone is calculated. The dose thus obtained is divided by 3 to obtain the amount of methadone to be administered every 8 hours. The dose for the breakthrough pain is calculated as 1/8 of the daily dose we have calculated and it is recommended that 3 hours is kept between breakthrough doses. Plasma concentration is stable after at least 5 days of administration which requires an evaluation of the patient at this time. Dose equivalence between methadone and oral morphine is assessed using a work table:

ORAL MORPHINE: ORAL METHADONE

4: 1 <90MG MORPHINE DAILY
8: 1 90 - 300MG MORPHINE DAILY
12: 1 300 - 1000MG MORPHINE DAILY
20: 1> 1000MG MORPHINE DAILY

The table above refers to the doses of morphine administered orally, and if the patient uses morphine parenterally (subcutaneously or intramuscularly) we must know that the equivalence between the two routes of administration is 2: 1 Oral morphine: Parenteral morphine

The dose thus obtained is divided by 3 to obtain the amount of methadone to be administered every 8 hours. The dose for breakthrough is calculated as 1/8 of the daily dose we have calculated. The evaluation will try to take into account an average amount that was needed in the last 2 days (respectively on day 4 and 5), and by a mathematical calculation the sum of the administered doses is calculated which is divided by 4 to find out the necessary dose at 12 hours. With this dose the treatment will be continued starting from day 6. At this new daily dose, the dose required for the breakthrough pain will be readjusted

Example

The patient is being treated with subcutaneous Morphine 20 mg every 4 hours and his pain is controlled, but he needs to be transferred to methadone as the only oral opioid available

Daily Morphine doze is 80 mg subcutaneously that means 80 mg x 2 = 160 mg Oral morphine. Looking at the conversion table for this daily amount of morphine we use a 8:1 conversion ratio

160 mg: 8 = 20 mg of Methadone required / day

20 mg: 3 = 6.66 mg administered at 8 hours in the first 5 days (we will use 6.75 that means 2 ½ tablets every 8 hours)

The breakthrough dose is 20 mg: 8 = 2,5 mg (1 tablet)

In the case of our patient he needed 2 additional doses of 2 mg on day 4 and 2 additional doses on day 5. At the time of evaluating the patient on day 5 we will collect all the amount he used in the last two days, i.e.: 20 mg + 2x2,5mg + 20 mg + 2X2,5 mg = 50 mg (dose used on days 4 and 5)

We calculate the new daily dose 50 mg dived by 2= 25 mg per day.

Now the administration is at 12 hours so the patient will receive 25:2=12.5 mg of methadone twice a day

The new breakthrough dose is 25: 8 = 3.125 mg

Guideline 3 ***How do we change a patient's treatment from methadone to morphine?***

If a patient is being treated with methadone and for some reason can no longer use the oral route, it is necessary to convert methadone to injectable morphine. The equivalent dose of oral morphine to be used is found out by multiplied with 1.5 the daily methadone dose. But because we want conversion to parenteral morphine we have to divide the found dose of oral morphine by 2. Thus the amount of morphine is distributed in 6 doses that are administered subcutaneously intermittently on the flyer.

Example

The patient uses 80 mg of methadone and does not swallow, so it is necessary to switch to injectable morphine. 80 mg x 1.5 = 120mg Oral morphine 120 mg: 2 = 60 mg Morphine for injection 60 mg: 6 = 10 mg / dose So the patient will receive 10 mg morphine subcutaneously every 4 hours; the pain breakthrough dose is 10 mg, i.e. 60: 6 = 10 mg

After implementation of these guidelines into practice we were interested to see the impact on patients in terms of efficacity and safety so we conducted a retrospective study that I will present further down.

Use Of Methadone As First Line Strong Opioid For Moderate-Severe Pain DANIELA MOSOIU, Mariana Sporis, Dana Lucia Stanculeanu, Elena Toader, Vladimir Poroch, Mihaela Boanca, Laurentiu Simion REV.CHIM 2017. No. 5 (68) 1051-1054[99]

After starting in 1995 as a physician doing home care visits one of the major challenges, I encountered was to achieve a good pain control with **a** scarcity of available drugs. Methadone was the only strong opoid available as a oral medication and although it was not recommended to use it as first line opioid there was no other alternative and the hospice was creating guidelines and using the drug in an innovative way. After 2000 oral morphine entered the country and methadone was slowly replaced with morphine

The aim of the study was to analyse the experience of Hospice Casa Sperantei in using methadone as a first line opioid in terms of effectiveness and safety for patients with severe cancer pain

Methodology We performed a retrospective study - all clinical records of patients cared for at CSH over a period of 5 years (1996-2000), were reviewed and those who had pain and treatment with methadone were analysed in detail. To compare our results with the ones published by other researchers we calculated some indicators:

- The increase indexes – as a difference between the maximum and the start dose dived by number of treatment days
- Increase index percentage

Results

Although the home care team was small (2 doctors, 6 nurses one social worker) we cared in five years for over 1000 patients (1079). Pain was an important factor for choosing hospice care 92 % of patients having pain with a lower ore more severe intensity. Similar to other studies in our retrospective research 88.78% of all patients required step II ore step III opioid treatment[85] and almost 60% had severe pain.

Concerning rotation of opioids with the low availability of opioids in the country at that time it comes as no surprise that our data differ from the international ones[100]. In our research population only 18.62% received a succession of 2, 3 or 4 major opioids[99], and from experience I can confirm that these were forced rotations due to disturbances in drug supplies when as doctor the only available choice was to rotate to the injectable drugs available at that moment on the market (usually hydromorphone with atropine).

Half of the patients who received strong opioids were on methadone (247 patients) and there was almost an equal number of men and women in the study group. The urban aria was better represented with 84.6% of the patients and this is expected as the catchment area for the hospice services was the city of Brasov with a small surrounding area (15 km around Brasov).

All patients in the study had cancer as their main disease for referral to the hospice and in our methadone. No significant co-morbidities were found and no evidence of an abnormal electrocardiogram was recorded in patients' files

Drug initiation – Guideline 1

In almost all cases methadone has been used as a first-choice strong opioid either to change from second step analgesic to a strong pain killer- in almost 80% of cases- or directly to start analgesia in opioid naïve patients. Although the practice guidelines were formulated by the team and the team was able to recall them, in real practice, they were rarely (14.05%) followed. In almost half of the patient the doses were from the beginning given at a 12-hour interval and the other 40 % received 5 mg of methadone every 8 hours.

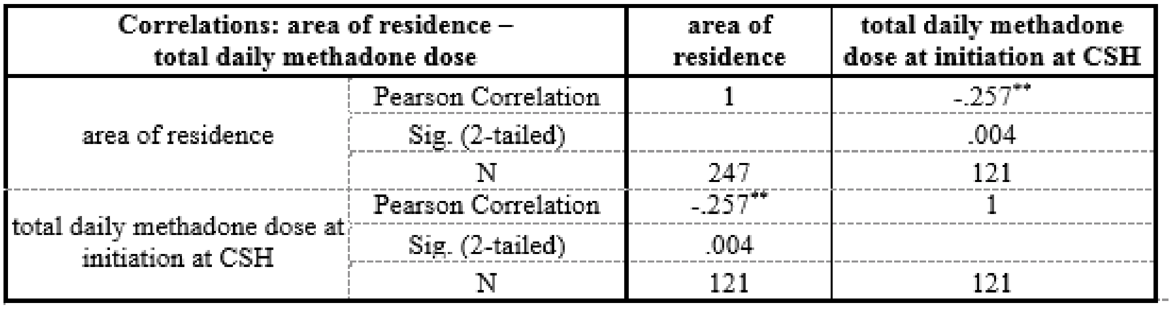
The clinical practice seems to follow more the recommendations from other medical studies[86,91,101, 102],[103] that recommend, administration of 3 mg every 8 h or 5 mg every 12 h, with additional methadone prescription when required) with an overall success rate of 92%.

It is interesting to see that the more cautious approach stated in the guidelines was followed for rural patients were smaller doses and smaller increments were used probably due to more difficult monitoring and lower access to medical services. A negative association was found between the initial dose of methadone and rural area of residence, with high statistical significance (p = 0.01, table 21).

Dose increments

The 2% per day dosage increase index (about 0.3 mg / day) for the 247 patients reflects the safety and efficacy of methadone, and is similar to that reported in the literature[104].

Table 21 . Correlations Between Total Daily Methadone Dose at Initiation and Area of Residence



Correlations: area of residence – total daily methadone dose		area of residence	total daily methadone dose at initiation at CSH
area of residence	Pearson Correlation	1	-.257**
	Sig. (2-tailed)		.004
	N	247	121
total daily methadone dose at initiation at CSH	Pearson Correlation	-.257**	1
	Sig. (2-tailed)	.004	
	N	121	121

*Correlation is significant at the 0.05 level (2-tailed)

From Mosoiu at all Revista de Chimie 2017

Secondary effects

We looked in the patients filles to retrieve information about digestive secondary effects - nausea, vomiting, constipation and xerostomia – to see if our results match the ones from the literature. Another mismatch between the practice guideline and clinical practice was found concerning the prescription of metoclopramide that was not found in patients records as being prescribed prophylactically.

Despite this fact we rarely found mentioned as secondary effects nausea and vomiting or xerostomia in patients records this being in agreement with the published studies[105], [92].

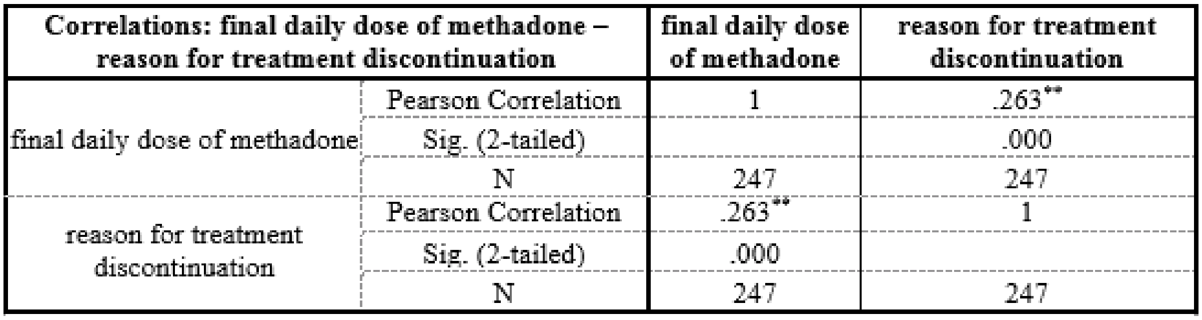
Association with a co-analgesic has not led to an increase in side effects (r = 0), supporting the idea that drug interactions are not always clinically significant and depend on wide individual variations associated with the pharmacokinetics of methadone[106].

Stop of methadone treatment

The median of administration for methadone calculated in the study was one month. We had no data to compare with length of patients stay in the service.

The reason for stopping the methadone treatment was usually the fact that with patient's deterioration and reaching the terminal stage of the disease swallowing was impaired and the oral route was not an option anymore. Another reason was uncontrolled pain in a third of cases when opioid rotation was required. We found a positive correlation between the final dose of methadone and the terminal disease as reason for discontinuation of treatment, correlation with high statistical significance (p = 0.01), table 22

Table 22. Correlations Between Final Daily Dose of Methadone and Reason for Treatment Discontinuation



Correlations: final daily dose of methadone – reason for treatment discontinuation		final daily dose of methadone	reason for treatment discontinuation
final daily dose of methadone	Pearson Correlation	1	.263**
	Sig. (2-tailed)		.000
	N	247	247
reason for treatment discontinuation	Pearson Correlation	.263**	1
	Sig. (2-tailed)	.000	
	N	247	247

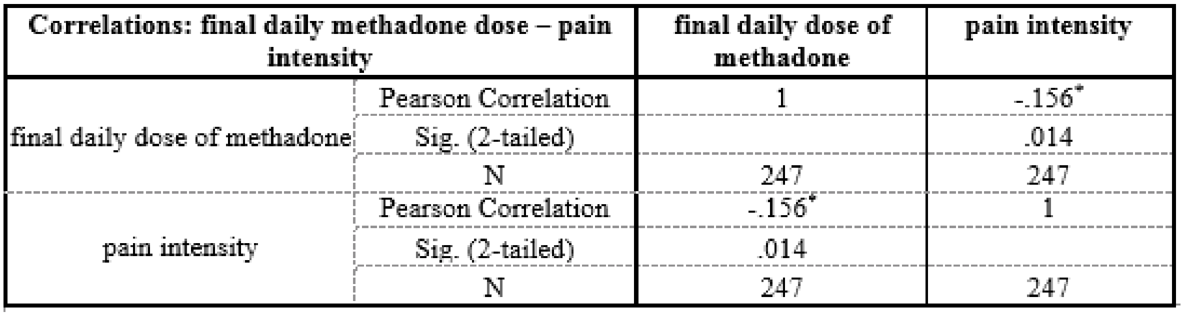
*Correlation is significant at the 0.05 level (2-tailed)

From Mosoiu at all Revista de Chimie 2017

Taking in account that during the study period methadone was available in 2.5 mg tablets its not surprisingly that the dose of methadone at the moment of stopping the treatment is relatively low compared with literature data. Our median dose was 20 mg that means 4 tablets every 12 hours with a maximum of 15 tablets every 12 hours. Another explanation could be the restrictive legislation with little previous exposure to opioids[107]

Another corelation that we found in our study is the one between the pain intensity at initial evaluation and the Methadone dose at the end of the treatment; (p = 0.05) (table 23).

Table 23. Correlations Between Final Daily Methadone Dose and Pain Intensity



Correlations: final daily methadone dose – pain intensity		final daily dose of methadone	pain intensity
final daily dose of methadone	Pearson Correlation	1	-.156*
	Sig. (2-tailed)		.014
	N	247	247
pain intensity	Pearson Correlation	-.156*	1
	Sig. (2-tailed)	.014	
	N	247	247

*Correlation is significant at the 0.05 level (2-tailed)

From Mosoiu at all Revista de Chimie 2017

Conclusions

“Methadone has been used in a large number of patients between 1996 and 2000.

Methadone has been shown to be safe and effective. Side effects were only found in 37.7% of patients and the most common side effects were constipation (14.6%) and nausea and vomiting (7.3%). The main reason for discontinuation of methadone treatment was terminal condition (49.8%). The doses used for treatment initiation ranged between 5 mg and 40 mg, and at the time of discontinuation between 5 mg and 60 mg. The small doses required by CSH patients to control pain are probably explained by the existence of a population not exposed to recreational drugs and / or with limited access to opioid analgesics.”[99]

2.2.3 Dextrometorphan in management of neuropatic pain

Neuropathic pain is present in about a quarter of palliative care patients[108] and is recognized as one of the five conditions that when presented alongside pain make it a difficult to treat conditions. Neuropathic pain can be treated with various analgesic therapies starting with usual opioids – but with a partial response- and needing co-analgesics such as anticonvulsants, corticosteroids, antidepressants, to maximize pain control.

Dextromethorphan is the D-isomer of the codeine analog levorphanol and was initially used as a central antitussive agent[109]. As pain killer dextromethorphan exerts its mechanism of action via NMDA receptors blockade, inhibition of serotonin reuptake mechanism, and indirect by influencing depression through activation of sigma-1 receptors at cerebral level, inhibition of nicotinic acetylcholine receptors, and inhibition of NADPH oxidase[110,111,112,113].

For palliative care setting, the blockade of NMDA receptors is the main therapeutic effect used in analgesia. NMDA receptors inhibition in particular is associated with both analgesia and neuroprotective effects on the nerve fibres, making this molecule particularly appealing for the neuropathic pain. These effects can be explained by the inhibition of voltage-dependent Ca2+ and Na+ channels as a result of receptor blockade, a fact demonstrated in vitro when dextromethorphan was added to the cultured cerebral nerve fibres, and in vivo when dextromethorphan administration was associated with inhibition of transmission of nociceptive information via spinothalamic tract[114,115]. Furthermore, intrathecal administration of dextromethorphan was associated with inhibition of information transmitted through both C and A beta fibres and reduction in central sensitization[116].

Dextromethorphan has a duration of action of up to 6 h, its onset being reported at about 30 min post oral dosing. It reaches the maximum concentration at 2–2.5 h after oral administration[117]. Dextromethorphan undergoes first pass metabolism at hepatic level: most of the drug (about 90–95%) is transformed by O-demethylation into its active metabolite, dextromethorphan under the activity of CYP2D6 cytochrome system and is excreted in the bile, whereas about 5% is inactivated by CYP3A4/5 via N-demethylation and excreted in the urine[118].

Dextromethorphan for chronic neuropathic pain in palliative care SA Antoniu, M Apostu, O Alexinschi, D MOSOIU Expert Review of Quality of Life in Cancer Care 2 (1), 5-12[119]

AIM This review summarizes the existing data on the analgesic efficacy and safety of dextromethorphan for chronic neuropathic pain in an attempt to better position this analgesic medication within the arsenal available for chronic pain in palliative care.

Method

A Medline search using terms such as 'dextromethorphan and pain' and 'NMDA antagonists and pain' was performed covering the period of published Medline literature till 30 September 2015. The first search identified 243 titles whereas the second one 325 titles. Among them, a number of 58 were retained for relevance for chronic neuropathic pain and included in the review. Papers dealing with perioperative analgesia were a priori excluded. A narrative synthesis was performed organizing the retrieved information in 2 main categories - preclinical and clinical- aspects of use of dextromethorphan in chronic neuropathic pain.

Results

Dextromethorphan was evaluated in healthy volunteers and in patients with neuropathic pain due to diabetes, post-herpetic neuralgia, or with oncological pain (see table below) Dextromethorphan is rather used in practice as an antitussive medication, its analgesic properties being less well known and speculated. The available clinical studies performed in both acute and chronic pain yielded rather conflicting results or reported rather modest efficacy associated with many side effects. In the particular setting of chronic neuropathic pain, dextromethorphan proves its efficacy especially in diabetes neuropathy and in spinal cord injury. In other phenotypes of chronic neuropathic pain such as post-herpetic neuralgia, the data are limited, reporting rather poor efficacy based on the existing data, and consequently, there is no rationale for using dextromethorphan in such a condition.

However, the idea of considering this NMDA antagonist as a potential analgesic therapy should not be abandoned. Dextromethorphan can be of particular value in palliative care and especially in the end-of-life care because it can be able to address not only pain, but also pain associated with depression, and/or cough. If its efficacy in alleviating the dry cough is very well known, its ability to act as an antidepressant is not.

Tab 24 Review Results

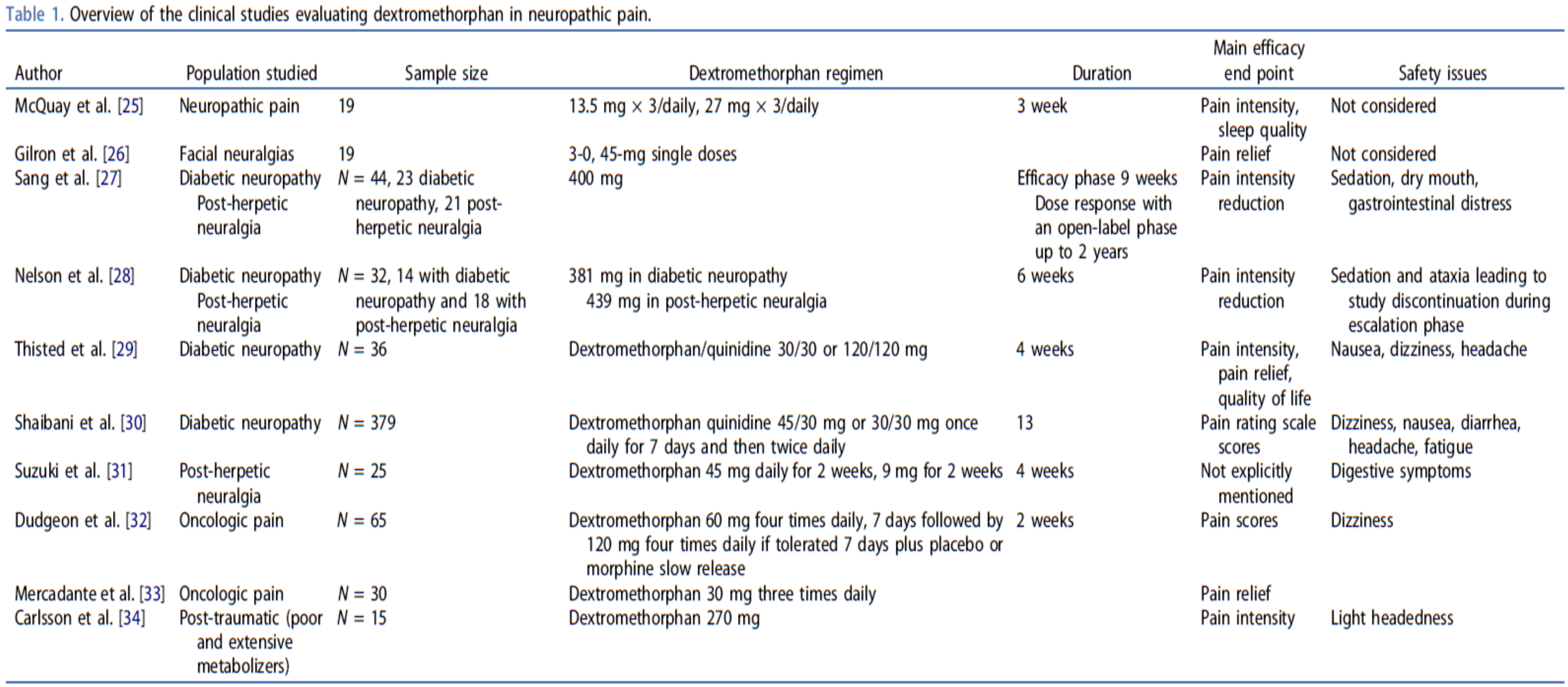


Table 1. Overview of the clinical studies evaluating dextromethorphan in neuropathic pain.

Author	Population studied	Sample size	Dextromethorphan regimen	Duration	Main efficacy end point	Safety issues
McQuay et al. [25]	Neuropathic pain	19	13.5 mg × 3/daily, 27 mg × 3/daily	3 week	Pain intensity, sleep quality	Not considered
Gilron et al. [26]	Facial neuralgias	19	3-0, 45-mg single doses		Pain relief	Not considered
Sang et al. [27]	Diabetic neuropathy Post-herpetic neuralgia	*N* = 44, 23 diabetic neuropathy, 21 post-herpetic neuralgia	400 mg	Efficacy phase 9 weeks Dose response with an open-label phase up to 2 years	Pain intensity reduction	Sedation, dry mouth, gastrointestinal distress
Nelson et al. [28]	Diabetic neuropathy Post-herpetic neuralgia	*N* = 32, 14 with diabetic neuropathy and 18 with post-herpetic neuralgia	381 mg in diabetic neuropathy 439 mg in post-herpetic neuralgia	6 weeks	Pain intensity reduction	Sedation and ataxia leading to study discontinuation during escalation phase
Thisted et al. [29]	Diabetic neuropathy	*N* = 36	Dextromethorphan/quinidine 30/30 or 120/120 mg	4 weeks	Pain intensity, pain relief, quality of life	Nausea, dizziness, headache
Shaibani et al. [30]	Diabetic neuropathy	*N* = 379	Dextromethorphan quinidine 45/30 mg or 30/30 mg once daily for 7 days and then twice daily	13	Pain rating scale scores	Dizziness, nausea, diarrhea, headache, fatigue
Suzuki et al. [31]	Post-herpetic neuralgia	*N* = 25	Dextromethorphan 45 mg daily for 2 weeks, 9 mg for 2 weeks	4 weeks	Not explicitly mentioned	Digestive symptoms
Dudgeon et al. [32]	Oncologic pain	*N* = 65	Dextromethorphan 60 mg four times daily, 7 days followed by 120 mg four times daily if tolerated 7 days plus placebo or morphine slow release	2 weeks	Pain scores	Dizziness
Mercadante et al. [33]	Oncologic pain	*N* = 30	Dextromethorphan 30 mg three times daily		Pain relief	
Carlsson et al. [34]	Post-traumatic (poor and extensive metabolizers)	*N* = 15	Dextromethorphan 270 mg		Pain intensity	Light headedness

From SA Antoniu, M Apostu, O Alexinschi, D MOSOIU Dextromethorphan for chronic neuropathic pain in palliative care

Conclusions

Chronic neuropathic pain is prevalent in the general population and it impairs significantly the quality of life. The existing analgesic medications exert a variable and yet unpredictable efficacy across various subsets/phenotypes of chronic neuropathic pain Dextromethorphan, an opioid compound initially used to treat cough was subsequently demonstrated also to be a NMDA receptor antagonist, to exert antidepressant effects and to have a neuroprotective activity. NMDA receptor antagonist blockade has an excellent therapeutic potential in chronic neuropathic pain because it interferes with allodynia and hyperalgesia which are major traits of this type of pain Dextromethorphan was previously demonstrated to be efficacious on short-term basis in chronic neuropathic pain related to diabetic neuropathy and exhibited an unclear effect in other phenotypes such as cancer related or postherpetic neuralgia.

Despite its further clinical assessment was not subsequently considered dextromethorphan still holds a promising therapeutic potential provided the population subsets with highest benefit are better characterized especially on long-term efficacy basis.

2.3. SCIENTIFIC DEVELOPEMENTS IN THE FIELD OF EDUCATION IN PALLIATIVE CARE

2.3.1 Core curriculum for academic training of medical students

Introduction:

The aging of the population and the changes affecting the disease pattern globally and across European countries over the past years show an increasing prevalence of patients living longer with cancer and other non-oncological diseases. These patients require palliative care (PC) for uncontrolled symptoms, for their social and psycho-emotional and spiritual suffering to improve their quality of life. To meet this increasing need for PC services, future physicians should be prepared by receiving appropriate undergraduate training in PC.

Across Europe, the provision of PC training for medical undergraduates is rather inconsistent. Only 30% out of 43 European countries have PC incorporate in the training of all their universities (Germany, Ireland included but the courses are not compulsory and content very divers), 23% of countries have in less than 50% of their universities (Romania in 2 of the 11 medical schools have appointed PC academic positions) [120].

As result, newly qualified physicians are entering practice with variable skill sets and may be unprepared to meet the needs of PC for an increasing number of patients and their families.

The European Association of Palliative Care (EAPC) considers that “every undergraduate medical student will need to learn about PC” and developed guidelines for PC training at undergraduate levels "Recommendations for the development of undergraduate curricula in palliative medicine at European Medical Schools”. The Council of Europe adopted the 24th Recommendation Rec (2003)24 of the Committee of Ministers, guiding member states to integrate PC in the continuum of care at national level: “PC should be included in all undergraduate training of doctors and nurses; International co-operation on education should be encouraged...” According to World Health Organization (WHO, Global Atlas of PC), the main barrier to increasing access to PC is the lack of trained healthcare professionals in this field. WHO recommends that “all medical professional schools should include basic training on PC”.

From European Association for Palliative Care Recommendations to a Blended, Standardized, Free-to-Access Undergraduate Curriculum in Palliative Medicine: The EDUPALL Project Stephen R Mason, Julie Ling, Liliana Stanciulescu, Cathy Payne, Piret Paal, Sorin Albu, Antonio Noguera, Estera Boeriu, Vladimir Poroch, Frank Elsner, Daniela Mosoiu

Journal of Palliative Medicine 2020 23 (12), 1571-1585[121]

The aim of the research project was to develop based on the EAPC recommendations a European undergraduate palliative care curriculum. The research was part of the EDUPALL project (2017-2020). Funded through the Erasmus+ "Cooperation for innovation and the exchange of good practices" action, the project aims to produce and pilot a model palliative care teaching program with an element of online training and one of face-to-face teaching.

The first task of the EDUPALL collaborative is to produce a model undergraduate curriculum, using the EAPC Recommendations, with participation and collaboration from all the EDUPALL partners: all eight University Medical Schools across Romania; RWTH Aachen University Germany; The All Ireland Institute, Ireland; Paracelsus Medical Private University in Salzburg, Austria; The Atlantes research programme, University of Navarra, Spain; University of Liverpool, England; and the European Association of Palliative Care.

My role in the project as that of project director responsible for quality implementation of the project

Methodology

The research had three phases

Phase one – critical revision of the 2013 EAPC recommendations using a Nominal group technique

Phase two- development of curriculum matrix based on the reviewed recommendations

Phase three- European experts' consensus on the new curriculum

Results

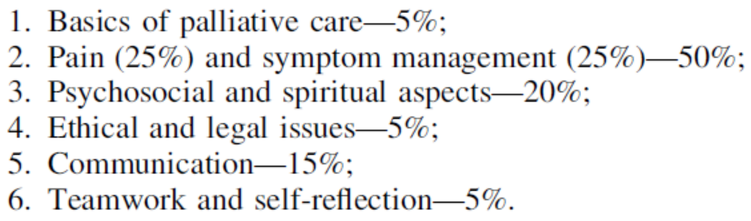
The results of the process were the

revised EAPC recommendations for undergraduate medical curricula including additional objectives within the Pain and Symptom Management themes and recognition of the importance of the care specific to the last days and hours of life

EDUPALL curriculum matrix (table 18) for a 72h blended curriculum with 3 ECTS

The structural outline for the EDUPALL curriculum was determined at the first EDUPALL meeting and ordered in accordance with the six educational domains, as outlined in the existing EAPC recommendations:

Tab 25 Domains of palliative care education with percentages



1. Basics of palliative care—5%;
2. Pain (25%) and symptom management (25%)—50%;
3. Psychosocial and spiritual aspects—20%;
4. Ethical and legal issues—5%;
5. Communication—15%;
6. Teamwork and self-reflection—5%.

From Mason S, …Mosoiu D. JPM 2020

In phase 3 the European experts made minor adjustments to the curriculum matrix as follows: more session required for symptom control, ‘‘Advance Care Planning’’ and ‘‘Determining the Dying Phase/Prognostication.’’. All reviewers who were consulted returned overwhelmingly positive comments on the draft curriculum matrix appreciating that the “Teaching units are logically organized; Learning outcomes covered core training needs; Learning objectives provided guidance for teaching sessions; Learning modalities were appropriately aligned; Assessment strategies were fit for purpose.”

This Matrix was used further to develop the training materials for an online and face to face format and was tested on over 1000 medical students in 4 Romanian Universities – Iasi, Timisoara, Targu Mures and Brasov and two universities in Ireland.

Tabel 26. EDUPALL Curriculum Matrix for Undergraduate Medical Education in Palliative Care

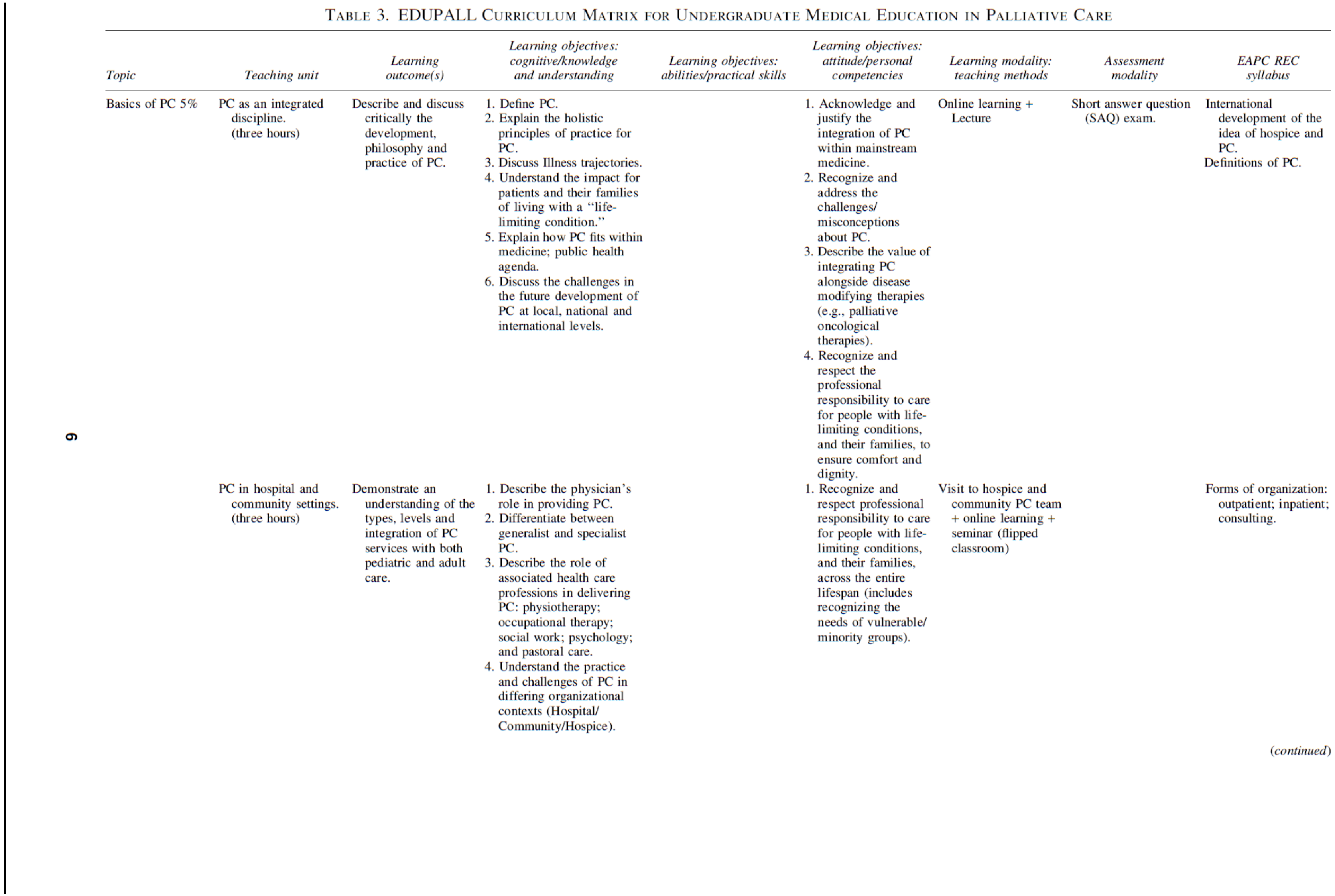


TABLE 3. EDUPALL CURRICULUM MATRIX FOR UNDERGRADUATE MEDICAL EDUCATION IN PALLIATIVE CARE

Topic	*Teaching unit*	*Learning outcome(s)*	*Learning objectives: cognitive/knowledge and understanding*	*Learning objectives: abilities/practical skills*	*Learning objectives: attitude/personal competencies*	*Learning modality: teaching methods*	*Assessment modality*	*EAPC REC syllabus*
Basics of PC 5%	PC as an integrated discipline. (three hours)	Describe and discuss critically the development, philosophy and practice of PC.	1. Define PC. 2. Explain the holistic principles of practice for PC. 3. Discuss Illness trajectories. 4. Understand the impact for patients and their families of living with a "life-limiting condition." 5. Explain how PC fits within medicine; public health agenda. 6. Discuss the challenges in the future development of PC at local, national and international levels.		1. Acknowledge and justify the integration of PC within mainstream medicine. 2. Recognize and address the challenges/misconceptions about PC. 3. Describe the value of integrating PC alongside disease modifying therapies (e.g., palliative oncological therapies). 4. Recognize and respect the professional responsibility to care for people with life-limiting conditions, and their families, to ensure comfort and dignity.	Online learning + Lecture	Short answer question (SAQ) exam.	International development of the idea of hospice and PC. Definitions of PC.
	PC in hospital and community settings. (three hours)	Demonstrate an understanding of the types, levels and integration of PC services with both pediatric and adult care.	1. Describe the physician's role in providing PC. 2. Differentiate between generalist and specialist PC. 3. Describe the role of associated health care professions in delivering PC: physiotherapy; occupational therapy; social work; psychology; and pastoral care. 4. Understand the practice and challenges of PC in differing organizational contexts (Hospital/Community/Hospice).		1. Recognize and respect professional responsibility to care for people with life-limiting conditions, and their families, across the entire lifespan (includes recognizing the needs of vulnerable/minority groups).	Visit to hospice and community PC team + online learning + seminar (flipped classroom)		Forms of organization: outpatient; inpatient; consulting.

(continued)

6

TABLE 3. (CONTINUED)

Topic	*Teaching unit*	*Learning outcome(s)*	*Learning objectives: cognitive/knowledge and understanding*	*Learning objectives: abilities/practical skills*	*Learning objectives: attitude/personal competencies*	*Learning modality: teaching methods*	*Assessment modality*	*EAPC REC syllabus*
Psychosocial-spiritual 15%	Loss, grief and bereavement. (three hours)	Understand the causes and responses to loss and bereavement for patients (and their families) with chronic illness.	1. Identify and describe the losses (and their impact) that patients and their families face across the illness trajectory (and for families, after death). 2. Differentiate between loss, grief, bereavement and mourning. 3. Describe "normal" grief patterns. 4. Identify common loss/grief models and describe their value for practice including complicated grief.	1. Demonstrate an understanding of, and ability to screen for risk factors for complicated responses to loss/bereavement in the patient and their family.		Online teaching and seminar + bed side training	MCQ, Open-ended question.	Psychological reactions to chronic illness, grief and loss. Impact on patient and family of loss of independence, role, appearance, sexuality and perceived self-worth.
	Psychosocial care. (three hours)	Understand the impact of disease on psychological and social functioning for patients (and their families) with chronic illness.	1. Identify and describe role transitions and effects (psychological, social and spiritual) for the patient and their family. 2. Identify how cultural (including religion) and ethnic differences may impact on psychosocial adjustment to disease. 3. Describes the expectations and roles within the multidisciplinary team in supporting/providing psychological and social care.	1. Demonstrate empathetic understanding of the psychological responses to stress/loss, and the link between coping and psychological dysfunction/disorders.	1. Shows a commitment to support and engage with psychosocial issues.	Seminar (flipped classroom) + bed side training	OSCE + short answer question.	Family dynamics. Ethnic, social and religious differences. Coping strategies.
	Practical issues at the end-of-life for patients and families. (three hours)	Understand the practical challenges at the end of life for patients with chronic illness, and their families.	1. Identify and explain the key challenges in preparing for the end of life for patients and their families. 2. Identify where to access help for patients and families to deal with practical, financial and legal issues—and explain how such services work.	1. Demonstrate how a doctor can support concerns regarding practical and financial issues at end of life.		Lecture + online material + seminar with experiential learning	OSCE + short answer question.	Dealing with practical, financial and legal issues near the end of life. Facilitation of relatives and friends to come to visit a dying person.

(continued)

TABLE 3. (CONTINUED)

Topic	*Teaching unit*	*Learning outcome(s)*	*Learning objectives: cognitive/knowledge and understanding*	*Learning objectives: abilities/practical skills*	*Learning objectives: attitude/personal competencies*	*Learning modality: teaching methods*	*Assessment modality*	*EAPC REC syllabus*
	Spiritual care. (three hours)	Understand the importance of assessing and supporting patients and families' spiritual needs.	1. Defines spiritual care and explain the relationship/ differences between spirituality and religion. 2. Describe how spiritual issues affect people with life-limiting conditions, and their families, throughout the continuum of care. 3. Explains the role of the Doctor (and wider MDT) regarding spiritual care.	1. Recognizes signs of spiritual needs/distress. 2. Demonstrates willingness to initiate discussion examining the patients/family's spiritual concerns.	1. Recognize the importance of the spiritual dimension in sustaining physical and mental well-being.	Seminar with patient narrative + online resources	MCQ, Open questions. Care plan assessment.	Spirituality: hope; life review; beliefs; meaning; coherence.

Topic	*Teaching unit*	*Learning outcome(s)*	*Learning objectives: cognitive/knowledge and understanding*	*Learning objectives: abilities/practical skills*	*Learning objectives: attitude/personal competencies*	*Learning modality Teaching methods and timings*	*Assessment modality*	*EAPC REC syllabus*
Pain assessment and management 25%	Pain and total pain in PC. (two hours)	Understand pain as a multidimensional experience.	1. Describe causes and effects of different types of pain that may be experienced. 2. Explain the concept of "total pain." 3. Understanding that pain is influenced by multiple factors such as thoughts, activity, sleep mood and stress. 4. To differentiate between pain and suffering.	1. Identify the elements of total pain in a clinical pain assessment.	1. Reflect on the multidimensional nature of pain, considering pain as an impairment of body structure and function, which in turn limits activity and participation. 2. Be aware that there is more to pain relief than medication.	Lecture (half an hour) On-line activities (e.g., IASP, exploring the experiences of patients with pain) Seminar (flipped classroom)/clinical/ practical work. (one and-a-half hour)	Short answer questions in response to case studies. OSCE—demonstration of holistic approach for pain assessment Formative—observation of pain assessment.	Definition and concepts of pain. The concept of "total pain."
	Pain pathophysiology, classification and measurement. (four-and-half hours)	Develop clinical skills and competencies in complete and correct pain assessment. Formulate pain diagnosis.	1. Differentiate pain types: acute, chronic, nociceptive, and neuropathic. 2. Recognize common features of visceral, somatic and neuropathic pain. 3. Describe common mechanisms of pain; receptors, pathways of pain transmission and modulation, nervous centers. 4. Discuss the principles of multidimensional assessment of pain.	1. Use validated pain assessment tools/scales/ apps; also for children and patients with cognitive impairment. 2. Demonstrate the ability to conduct a thorough assessment, to understand pain from the holistic approach. 3. Formulate pain diagnosis statement.	1. Reflect on how chronic pain affects the patient's quality of life and the need for comprehensive assessment.	Experiential learning through bed side observation. Clinical (patient) simulation/ demonstration. Case-based learning and video resources. Pain management tools via on-line activities. Lecture one hour + online activity (one and-a-half hours) Clinical/practical work (two hours)		Anatomy and pathophysiology. Mechanisms of nociceptive pain (bone pain, soft tissue pain, and visceral pain). Mechanisms of neuropathic pain. Recognition of chronic pain features.

(continued)

TABLE 3. (CONTINUED)

Topic	*Teaching unit*	*Learning outcome(s)*	*Learning objectives: cognitive/knowledge and understanding*	*Learning objectives: abilities/practical skills*	*Learning objectives: attitude/personal competencies*	*Learning modality Teaching methods and timings*	*Assessment modality*	*EAPC REC syllabus*
	Principles of pain treatment. (eight hours)	Understands the complexity of pain management in PC and the importance of combining non-pharmacological treatment with pharmacological treatment prescribing pain medication and co-analgesics based on drugs pharmacokinetics.	1. Explains the principles of good prescribing in a PC setting. 2. Outlines factors that influence the choice of pain management options. 3. Describes common nonpharmacological approaches to pain management. 4. Discuss the WHO Pain ladder and its use for management of cancer pain. 5. Outlines analgesics and co-analgesics drugs: pharmacokinetics, and pharmacodynamics. 6. Describes how to commence opioid treatment in cancer pain: initiation, titration. 7. Explains the side effects of opioids and their management. 8. Correlates use of various co-analgesic drugs with pain characteristics.	1. Prescribes appropriate dosages, forms and routes of administration for given pain cases including prescription for breakthrough pain. 2. Calculates and adjust the dose of morphine	1. Be aware of pharmacological and nonpharmacological methods for pain management. 2. Overcomes concerns/ fears of using morphine for severe pain.	Experiential learning through bed side observation. Case-based learning Seminar + self-directed study. Small group seminar (2×2 hours) Clinical/practical work (four hours)		Principles of pharmacological treatment. Pharmacokinetics and dynamics of opioids, non-opioids and adjuvant analgesics. Routes of drug administration and their indications, alternative routes when oral is not possible. Non-pharmacological pain management.
	Barriers in pain management. (two hours)	Demonstrate understanding of country-specific opioid legislation. Evidence of exploration and understanding of myths regarding opioid use.	1. Evaluate the current barriers in pain management: national and international policy; and popular myths concerning opioids. 2. State the legal requirements for prescribing morphine.	1. Demonstrate how to address patients/families/ professionals false beliefs concerning pain management	1. Reflect on the negative impact of existing myths related to opioid use, on patient's analgesic treatment compliance. 2. Consider pain management a priority and advocate for patients for good pain relief.	On-line activities (one hour) + seminar (flipped classroom)/ clinical/practical work (one hour)		Organizational and legal problems. Special prescription forms.
Symptom assessment and management 25%	Principles of symptom assessment and management. (two hours)	Understand the core principles, assessment, diagnostics and treatment of common symptoms in PC.	1. Discuss the principles of symptom management according to the stage of disease, and the impact on the patient and their family. 2. Appraise the similarities/ differences in symptom management in curative approach vs. PC approach. 3. Describe the principle of continuous and "as-required" medication.	1. Use a systematic approach (e.g., the OPQRSTUV framework) to investigate symptoms when undertaking a holistic assessment	1. Identify the importance of the individuals' goals and concerns regarding treatment. 2. Explain the value of the interdisciplinary approach to symptom assessment.	Class room teaching (one hour) + experiential learning through bed side observation(one hour)	Formative—observation (clinical practice/simulation) + short answer exam questions. Structured review of evidence base for one symptom.	Curative treatment Palliative treatment Palliative medicine Interdisciplinary options.

(continued)

TABLE 3. (CONTINUED)

Topic	*Teaching unit*	*Learning outcome(s)*	*Learning objectives: cognitive/knowledge and understanding*	*Learning objectives: abilities/practical skills*	*Learning objectives: attitude/personal competencies*	*Learning modality Teaching methods and timings*	*Assessment modality*	*EAPC REC syllabus*
	Assessment and management of fatigue, digestive and respiratory symptoms in PC. (eight hours)	To asses and manage common symptoms PC using best evidence guidelines and protocols of care.	1. Outline common causes of common symptoms, including: constipation; diarrhea; nausea/vomiting; anorexia/cachexia; fatigue; oral problems (xerostomia, dysphagia); dyspnea; and cough. 2. Describe and justify management plans, incorporating pharmacological and nonpharmacological approaches to care.	1. Explain and provide advice/education to people with life-limiting conditions, in the context of the management of symptoms.	1. Reflect on how each symptom affects the quality of life of the patient. 2. Examine the limits of pharmacotherapy in relieving all/every symptom—and the doctors continued role in patient support.	Online learning (six hours) + seminar/ experiential learning through bedside observation(two hours)		Gastrointestinal symptoms. Anorexia, cachexia and fatigue. Oral care Pulmonary symptoms.
	Dermatologic conditions. (two hours)	To assess, (prevent) and manage dermatologic conditions associated with life-limiting conditions using best evidence guidelines and protocols of care.	1. List the main signs and symptoms of dermatologic conditions in PC (pressure ulcers, lymphedema, malignant ulcers).	1. Develop a management plan for patients with dermatologic conditions to provide symptom relief, including pharmacological and nonpharmacological approaches. 2. Demonstrate ability to explain the approaches for preventing the development of dermatologic conditions such as pressure sores and lymphedema.	1. Adopt the practice of routine screening for dermatologic conditions (e.g., the common sites of pressure ulcer formation).	Online learning (one hour) Clinical placement/ seminar(one hour)		Dermatologic symptoms.
	Neuropsychiatric disorders. (three hours)	To assess, prevent and manage uncomplicated neuropsychiatric symptoms associated with life-limiting conditions using standard guidelines or protocols of care.	1. List main signs and symptoms of neuropsychiatric disorders in PC, including: delirium; depression; insomnia. 2. Describe causes of neuropsychiatric disorders and explain the principles of clinical management including pharmacological and nonpharmacological approaches.	1. Develop a treatment plan for patients with uncomplicated neuropsychiatric disorders.	1. Identify the functional and psychological impact of the discomfort caused by neuropsychiatric disorders on both the patient and family.	Online learning two hours + flipped classroom (one hour)		Neuropsychiatric symptoms.
	Care of the dying patient. (three hours)	To recognize, asses and manage the care of the dying patient using best evidence guidelines and protocols of care.	1. List five common signs that a patient is dying. 2. Describe methods and tools of prognostication, as well as their limitations. 3. Discuss potentially reversible causes of clinical deterioration. 4. Describe the 10 principles of patient management in the last days and hours of life.	1. Engage anticipatory prescribing for the main symptoms in dying patients. 2. Explain the situation to patient and their family.	1. Accept and embrace that care for the dying is part of a doctor's role. 2. Reflect on the challenge of changing goals for a patient, from enhancing quality of life to comfort and a dignified death.	Online learning two hours + seminar/ experiential learning through bed side observation(one hour)		Care of the dying.

(*continued*)

TABLE 3. (CONTINUED)

Topic	*Teaching unit*	*Learning outcome(s)*	*Learning objectives: cognitive/knowledge and understanding*	*Learning objectives: abilities/practical skills*	*Learning objectives: attitude/personal competencies*	*Learning modality Teaching methods and timings*	*Assessment modality*	*EAPC REC syllabus*
	Emergencies in PC. (one hour)	Explain what is understood by emergencies in PC. Recognize and ensure timely management of PC emergencies.	1. List major emergencies in PC. 2. Recognize and describe signs that could indicate an emergency in PC (hypercalcemia, spinal cord compression, superior vena cava obstruction, etc.). 3. Explain the appropriate way to respond to PC emergencies and describe a management plan. 4. Describe the impact of clinical emergencies for the patient and family.			Online learning(one hour)		Emergencies in PC.
Ethical and legal issues 5%.	Decision making and models of care. (one hour)	Understand the ethical principles that underpin care models and the associated decision-making process.	1. Describe core ethical principles for PC). 2. Critically compares the models of care (paternalist, partnership, and consumerist). 3. Explains steps involved in the decision-making process.	1. Apply the steps involved in the decision-making process in a given case. 2. Use ethical theory to justify clinical practice.	1. Reflects on the importance of ethical principles and rules in decision making in PC.	Online (two hours) + interactive seminar(one hour)	MCQ + reflective writing on a provided case study.	Discussion of decision-making process in PC, withdrawal or withholding of a treatment. Partnership vs. paternalist model.
	Advance care planning. (one hour)	Describe the importance of advance care planning as a modality to prevent unwanted and futile treatment.	1. Define advance care planning and explain its importance. 2. Describe the steps of advance care planning process (five-step model). 3. Recognize the ethical and legal principles that underpin and promote patient/family involvement in care planning. 4. Explain the concept of futile treatments in PC with examples.	1. Demonstrate steps involved in the advance care planning process in a given case.	1. Be aware of the moral and legal rights of patients (and families) to be fully informed (as required) to participate in decisions regarding future care.			Negotiating and placing "Do-not-attempt cardio-pulmonary. resuscitation" orders (DNACPR or DNR). Exploration of advance care planning.
	PC development and relief of suffering. (one hour)	Critically evaluate why PC is a human right.	1. Describe the international and national legal frameworks that support the development of PC services. 2. Explain PC sedation and: the differences between palliative sedation/physician-assisted suicide/euthanasia; and what factors may prompt requests for PAS/euthanasia.	1. Evaluate individual requests for euthanasia and PAS and their origin factors (personal, psychological, spiritual, social, cultural, economic and demographic).	1. Reflect why PC is a human right for all. (online + self-directed)			Distinction between PC and euthanasia: double effect. Ethical and legal differentiation in the national and international context. PC as a human right: justice and access.

(continued)

From R Mason, Julie Ling, Liliana Stanciulescu, Cathy Payne, Piret Paal, Sorin Albu, Antonio Noguera, Estera Boeriu, Vladimir Poroch, Frank Elsner, Daniela Mosoiu Journal of Palliative Medicine 2020 23 (12), 1571-1585

2.3.2 Leadership for palliative care services

Over the past 15–20 years, awareness of the importance of leadership in health care and of formal leadership training has increased considerably. Medicine involves leadership and unlike any other occupation where management skills are important, health care professionals are not taught how to lead, although they take on significant leadership responsibilities over the course of their career. Despite the recognized need and even though medical institutions have recommended that “leadership” should become a core medical competency, the number of comprehensive leadership development opportunities is still limited. Evidence shows that leadership skills and management practices positively influence both patient and healthcare organization outcomes, it is becoming clear that leadership training should be formally integrated into medical continuing education. Furthermore, evidence suggests that leadership quality affects patients, healthcare system outcomes, and finances, as well. For example, hospitals with higher rated management and leadership practices have been shown to deliver higher quality care and have better clinical outcomes, including lower mortality. Enhanced management and leadership practices have also been associated with higher patient satisfaction and better financial performance. Effective leadership also affects physician well-being - stronger leadership is associated with less physician burnout and higher satisfaction. While the skills acquired through various Master’s programs, existing at national level, are indeed highly desirable in many leadership roles, comprehensive leadership programs are necessary for the development of broad leadership skills – the “differentiating competencies.” Four academic European centers - University Hospital of Cologne /Germany, Nicolaus Copernicus University in Toruń / Poland, Hospice Casa Sperantei, Brasov /Romania and King’s College London/ UK tried to respond to this need, developing in 2012 The European Palliative Care Academy Program (EUPCA), a leadership course, which is aimed at emerging palliative care (PC) leaders of all professional backgrounds from across Europe. Along with continuous assignments and a personal project, the course covers 600 hours and should be completed within 1.5 years. The overall aim of the course is to develop leaders equipped with the necessary skills, abilities and expertise to advance palliative care across Europe and to address future challenges in the field.

Experience with EUPCA programs showed also that early career leadership training helps to develop a pipeline of leaders for the future, setting the foundation for further development of those who may choose to pursue significant leadership opportunities later in their career.

Transformational leadership is the newest concept in personal development of health care professionals, influencing communities in promoting health and providing care. In order for health care professionals to be fully equipped to care for patients, a deep understanding of self and others is necessary, together with developing the skills, attitudes and abilities to influence, guide and support others is a must.

The professionals that care of patients are the same that take the lead in these three areas to be covered: services, education of public and professionals, advocacy and policy change. In the basic training and specialty professional education of healthcare professionals, there is no education inserted for developing competencies (skills, attitudes, abilities) as leaders. Many professionals take action on the above three dimensions based on personal social skills, many not having success in their initiatives due to lack of leadership competencies.

Developing, Promoting, and Sustaining Palliative Care Across Central Eastern Europe: Educating Nurses to Be Leaders Is a Critica l First Step N Mitrea, C Ancuta, P Malloy, D Mosoiu Journal of Hospice & Palliative Nursing 21 (6), 510-517[122]

Aim

We used the transformational leadership model to develop and test a training program for emerging leaders in Eastern Europe with the focus on nurses as the backbone of the palliative care team.

Fig 11 Study Design using elements of action research with monitoring of education process

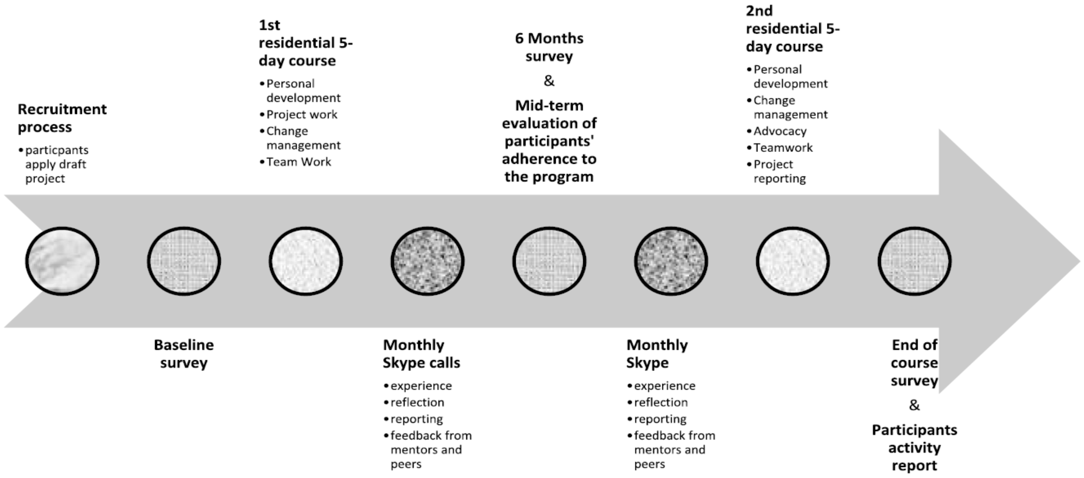


FIGURE 1. Design of the Transformational Palliative Nursing Leadership Program (TPNLP).

Results

Four cohorts, representing 32 nurses, started the program, and 19 completed the pilot program. The majority of nurses under the age of 40 years and more than 66% of nurses had between 6 and 15 years of experience in the field of palliative care

Nurses enrolled in the program replied in the survey that they were ‘‘confident’’ and ‘‘very confident’’ in their clinical skills to assess and manage pain and other symptoms and to offer/provide palliative care. They expressed less confidence in dealing with spiritual and ethical issues and providing bereavement support.

Kirkpatrick’s 4-level model of evaluating training programs was adapted and used for designing the evaluation framework for the leadership program[123] as follows:

Level 1 Assessing Reactions to the Program with standardized post course surveys (Seventy-eight percent of participants replied ‘‘strongly agree’’ on content, teaching materials, learning environment, and organizational aspects as to all the sessions)

Level 2 Evaluating the Learning Process by a self-assessment checklist and mentor assessment (there was steady growth in the number of participants who became very confident in their personal development, mentorship, negotiation and teamwork skills).

Level 3 Analysis of behavior change through project portfolio and participants short narratives (increased self-awareness, communication skills, and confidence in their roles as leaders and abilities to be innovative as leaders)

Level 4 Impact of the program on advancing palliative care in the region impact of projects undertaken in the leadership program (implementation of protocols, development of education programs or services)

As reflected in Kirkpatrick’s 4-level evaluations, participating nurses reported gains in leadership skills and knowledge, increased awareness of their strengths and weaknesses, and being more confident in the ability to address challenging communication situations.10 suggesting the training achieved the stated goals and the pilot project provided initial ‘‘proof of concept’’ of a new method for teaching leadership to palliative care nurses.

2.4. PROFESSIONAL AND ACADEMIC ACHIEVEMENTS

2.4.1. Career overview

My entire professional and academic development is presented in the Curriculum Vitae included in Section IV. However, I considered useful to insert here a very brief synthesis of my career evolution in order to facilitate the interpretation of the scientific achievements presented in detail in Section I and their correlation with future research directions mentioned below. Thus, the most representative landmarks of my activity include:

- Fully trained (senior MD) in two medical specialties – Oncology and Palliative Care;
- Professional training in prestigious international centers: Lancaster University, San Diego Hospice, Saint Gallen
- Progressive development of the academic career up to the level of Associated Professor in the Department of Medical and Surgical Specialties of Faculty of Medicine, "Transilvania" University in Brasov
- 14 papers since PhD thesis presentation, published in ISI journals;
- 10 books written in the field of Palliative Medicine, 12 book chapters.
- 301 citations (h-index 8 -Google scholar, H index 7 In web of science);
- 7 research, education and service development grants, won by international competition.
- Principal investigator in 4 international and 2 national research trials and research team member in 5 international trials
- As a recognition of the academic activity, appointed member of the palliative care Task Force in the Ministry of Health and member in different commissions of the Transilvania University and national Universities as a referent for doctoral Thesis or referent for the files of candidates for certain professional positions contests in universities
- Founder, President and afterwards Member of the Romanian Palliative Care Association Board since 1998
- Director in the board of the European Association for Palliative Care since 2014

2.4.2 PhD thesis and projects

2.4.2.1 PhD thesis

Title: „ Communicating the diagnosis and prognosis in cancer training, opinions and practices of oncologists, haematologists and palliative care physicians, the public's expectations and the legal framework"

Supervisor: Prof. dr. Ljubomir Pterov Simion, University of Medicine and Pharmacy Cluj Napoca, Romania

The research aim was to highlight the communication model of oncologists, hematologists and palliative care physicians concerning diagnosis and prognosis and to put it into the Romanian educational legal and cultural context.

Research objectives were aiming to describe the current legal framework which regulates the doctor-patient relationship regarding information, communication and therapeutic decision making, present the population's expectations regarding communication in cancer and involvement in clinical decision making; analyze the importance given to patient communication in undergraduate medical education and postgraduate training in oncology, describe the perceptions, attitudes, behavior and practices of oncologists, hematologists and palliative care physicians regarding communicating the diagnosis and prognosis in cancer

The research methodology included both qualitative and quantitative research techniques. Activities carried out in the research include: Stage I S1: 3 focus groups Stage II S2: survey of oncologists, hematologists and palliative care physicians S3: population survey Stage III: 3 retrospective studies: S4: analysis of university under- and post-graduate education programmes S5: analysis of the ethical code and medical legislation regarding communication, information and clinical decisions S5a and legislation in cancer S5b.

The study shows there is disagreement between legal requirements, ethical regulations and medical practices. Doctors questioned say that in over 90% of cases the family is the first to be informed about the diagnosis and 55% of them do not wish to go against the family's wishes.

Explanations for this fact are some at a "macro" level and others at an individual level: The organization of the health system means that investigation and diagnosis in cancer falls into the hands of medical specialists other than oncologists; these specialists tell the diagnosis to the family. Poverty, free healthcare in Romania, and inconstant access to treatment makes open honest communication with patients difficult as doctor is unable to guarantee access to treatments.

76% of the population questioned considers that medicine has the responsibility to practically cure all diseases including cancer, and 66% that the oncologist's role is to treat and cure cancer. Taking on this role makes it difficult to communicate the diagnosis which is associated with death by 72% of the population and impairs honest open communication, especially with an unclear prognosis.

Undergraduate medical school programmes include communication sessions at best as an optional course. Oncology curricula do not include aspects of communication with the cancer patient and breaking bad news is not listed in the skills which must be learnt by future oncologists. 96% of those interviewed consider courses and guides in communication as urgently required.

Fear of not harming the patient is an important barrier in open honest communication 73% of doctors questioned consider the truth upsets the patient emotionally. Doctors are afraid of expressing their own emotions or how they would cope with the emotions expressed by the patient. Not communicating the diagnosis to the patient is a “comfortable” alternative for the doctor. 70% of doctors questioned consider it is hard to communicate the diagnosis and prognosis, which is linked to significant emotional burden.

This communication model has repercussions on the decision making process. Informed consent frequently becomes a formality. The paternalistic model predominates, with patient autonomy ranked as less important. However, 66% of the population surveyed thought it very important or important to be consulted with regards to treatment options especially the age group 45-59 years ($p=0.001$). Lack of involvement of patients in treatment decisions is followed by reduced compliance and over-treatment.

This research should be completed with a study of aspects of communicating the diagnosis and prognosis in a representative sample of oncology or hematology patients as in this present study doctors' practices were compared with the general public's expectations.

2.4.2.2 Projects/grants

Project Director for Romanian Partner in the Horizon H2020-SC1-BHC-2018-2020 nr 825700 project Palliative sedation Grant value: 4 033 520.25 Euro period: 2019-2024 financier: European Commission

Project manager coordinating partner Translating International Recommendations into Undergraduate Palliative Care Curriculum (EDUPALL) Grant value: 294 956 Euro period: 2017-2020 financier: ERASMUS +: Ref. no.: 2017-1-RO01-KA203-037382

Partner project manager: Massive open online courses with videos for palliative clinical field and intercultural and multilingual medical communication Grant value: 312,220 Euro period: 2014-2017 financier: Erasmus + nrctr: 2014-1-RO01-KA203-002940

Project Manager: Costing Palliative Care Services in Romania, 2014-2015 Grant value: 95000 USD period: OSI New York - Public Health Program

Coordinating project manager: Swiss- Romanian Partnership Overcoming disparities on access to quality basic palliative care in the community; Partnerships to identify and improve clinical, educational, legal, and economic barriers. Grant value: 279,700 Euro period: 2013-2016 financier: Swiss Romanian Cooperation Program PF05

Project manager partner: IZERZO: Integration of medical oncology and palliative care procedures in various institutional and economic settings: Development of tailored interventions based on patient needs and testing of its preliminary efficacy on patient reported outcomes; Grant value: CHF 449,200 for the period 2013-2015

Partner project manager: European Academy for Palliative which: 2013-2019 129,500 Euro, 2011 - 2012. Bosh foundation

Partner project manager: Access to Opioid Medication in Europe", Grant value: 2,754,383 Euro period: 2009-2013 financier: FP7-HEALTH-2007-B 222994

Project Manager: Education and organizational support for palliative care development in Eastern Europe, Grant value: 40315 USD period: 2009-2010 financier: Opensociety foundation NewYork nrctr: 20027058

Project manager: Improving access to palliative care for the Roma communities, by education and direct care, Grantee value: 29589 USD period: 2006-2007 financier: Open Society Institute New York nrctr: 20018568

Project Manager: Caring Togeter"–Private-Public partnership for the development of palliative care in Romania, USAID, Wold Learning, Sub-Agreement No: 186-A-00-05-00103-00 (24) 2006-2007

RESEARCHER In: POCA "Increasing the institutional capacity for the coordinated national development of palliative care and home care", 2020 - 2023 (EUR 4,513,000.00)

2.4.3. Academic activity

I will refer below to the most important achievements in the field of teaching activities, dissertations coordinated, books published, as well as my attendance in different committees and commissions of the Faculty of Medicine, “Transilvania” University, Brasov and in other National Universities.

Between 2010 and 2021 I delivered lectures and practical lessons in the field of oncology and palliative care to the medical students of 4th and 5th year of the Faculty of medicine as well as to the students attending the 4th year at the General Nursing specialization. I am program coordinator for the master program of Palliative Care Strategies since my appointment at the University and this is one of the successful master programs in the university with over 40 students enrolled yearly.

I am leading the subspecialty training in palliative care for physicians- 18 months training- being appointed the national coordinator since 2001. This is a program that enrolls in training doctors every second year and is run at present in 6 academic centers throughout the country (120 doctors enrolled in the 2020-2022 program)

Since 2018 the palliative care specialization program for nurses has started, with over 100 nurses enrolled, and I coordinate the process as an interim chair till a nurse with academic qualification will take the lead.

I was also involved in the professional continuous formation of the health care providers organizing since 2018 every year the palliative care masterclass together with professor Frank Ferris and Prof Daniel Hinshaw – US

Starting with the year 2011 I am founding member and trainer in the European Palliative Care Academy training emerging leaders to enhance their leadership skills in order to foster the development of the palliative care field in Europe.

Based on the theoretical and practical experience accumulated, between 2010 and 2020 I have supervised an average of 20 master dissertations/ yearly for the master students, all of them in the field of Palliative Care. Along each thesis I tried to teach students how to read and interpret medical literature, how to perform a literature review (how to select good articles, how to extract useful information and then how to build a proper review) how to design a quantitively research project (which information should be extracted from every file, how to organize them, how to do descriptive and analytical statistics, how to correlate the results and how to formulate conclusions), but also qualitative research especially for questions that request a profound understanding of the studied phenomena. All the theses were highly evaluated and many of them published in National journals or presented at national and international conferences.

My academic activity also includes writing books. I was author/editor of 10 books, I wrote 9 chapters as a single author/co-author in books published in prestigious international books and 4 in renowned Romanian publishers.

Of particular interest are the two books. The first one is called "**Clinical protocols in Palliative Care**" represents an up-date of 22 protocols to be applied in the field of palliative care. The book contains algorithms of care for main symptoms in palliative ace but also for palliative care emergencies alongside annexes written into a very practical format to facilitate their use by any doctor working in a field of palliative care.

The second one "**EAPC Atlas of Palliative Care"** summarizes the development of palliative care at level of services, policies and education throughout Europe and is a reference book cited already 59 times since it was in 2019.

Concerning my attendance in different commissions of the university, I have to mention that I attended the commission for the entrance exam for master students every year. I have also been a member of many promotion and doctoral commissions in our own faculty and in other universities, as well as member of commissions for specialist or senior degree contest in oncology and palliative medicine.

2.4.4 International recognition

Representation in international bodies

- As a recognition of the work in developing palliative care services and education programs in Romania and Easter Europe I was nominated and voted as Member of the Board of Directors of the European Palliative Care Association 2015-present

-previous I was Founding Member and Honorary Director of the World-Wide Palliative Alliance representing Eastern Europe 2005-2012

- I am coordinator of one of the four initial academic partners that has had the Initiative to develop the European Academy for Palliative Care, and I am since 2012 –member and Hospice partner coordinator within it

Scientific awards

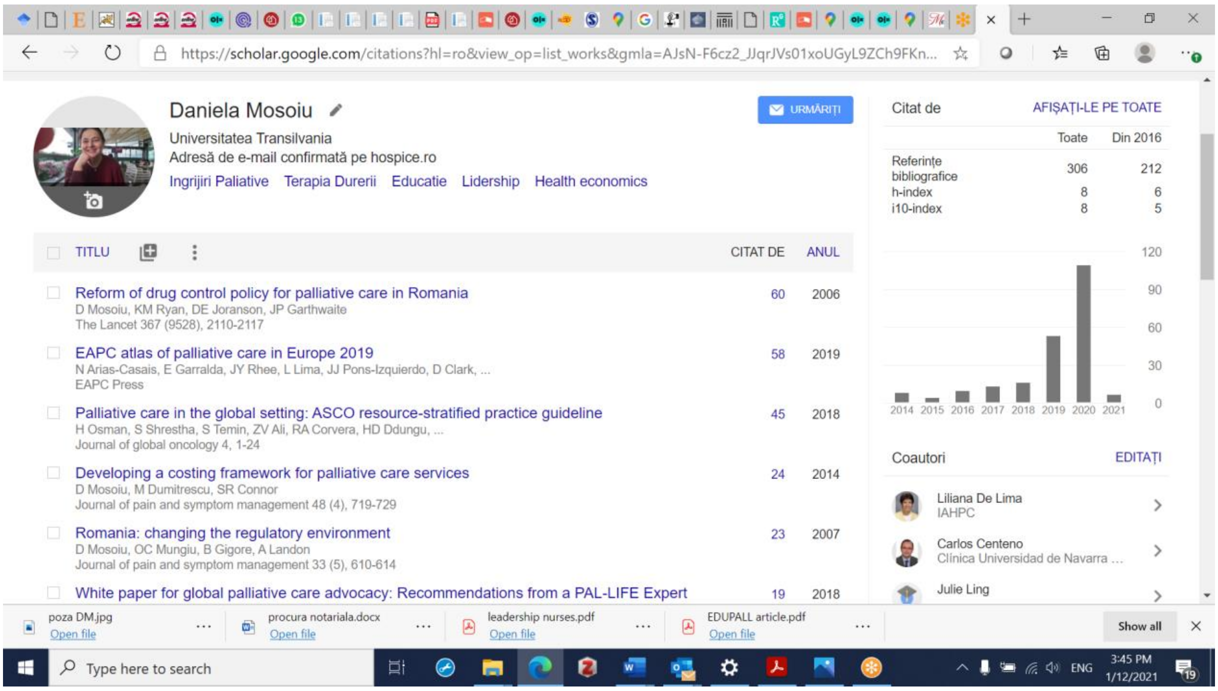
- For the scientific work I was selected as Member of the Advisory Board for the Scientific Committee of the European Palliative Care Conference 2013- present and in this role I am responsible for feedback on the scientific program of the congresses and review of the abstracts submitted to the congresses

- Also, I served as Member of the Scientific Committee of the XII World Congress of the European Palliative Care Association (EAPC), 18-21 May, 2011, Lisbon, Portugal.

I was invited speakers to over 30 international congresses world-wide, was invited as trainer in the European school of Oncology masterclasses in Cairo, Dubrovnik, Georgia; was appointed as WHO experts in the Steering Committee for comprehensive cervical cancer control in 2010. I worked as expert in Moldova to offer technical assistance for palliative care service development, education at all levels, standards

My publications gathered 306 citations and a h-index of 8 in Google Scholar database and a h-index of 7 in ISI Thomson Reuters database – see below

Fig. 11 – Citations and H-index top: Google Academic database, bottom: ISI Thomson Reuters database



Daniela Mosoiu
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Ingrijiri Paliative Terapia Durerii Educatie Lidership Health economics

TITLU	CITAT DE	ANUL
Reform of drug control policy for palliative care in Romania D Mosoiu, KM Ryan, DE Joranson, JP Garthwaite The Lancet 367 (9528), 2110-2117	60	2006
EAPC atlas of palliative care in Europe 2019 N Arias-Casais, E Garralda, JY Rhee, L Lima, JJ Pons-Izquierdo, D Clark, ... EAPC Press	58	2019
Palliative care in the global setting: ASCO resource-stratified practice guideline H Osman, S Shrestha, S Temin, ZV Ali, RA Corvera, HD Ddungu, ... Journal of global oncology 4, 1-24	45	2018
Developing a costing framework for palliative care services D Mosoiu, M Dumitrescu, SR Connor Journal of pain and symptom management 48 (4), 719-729	24	2014
Romania: changing the regulatory environment D Mosoiu, OC Mungiu, B Gigore, A Landon Journal of pain and symptom management 33 (5), 610-614	23	2007
White paper for global palliative care advocacy: Recommendations from a PAL-LIFE Expert	19	2018

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	Toate	Din 2016
Referințe bibliografice	306	212
h-index	8	6
i10-index	8	5

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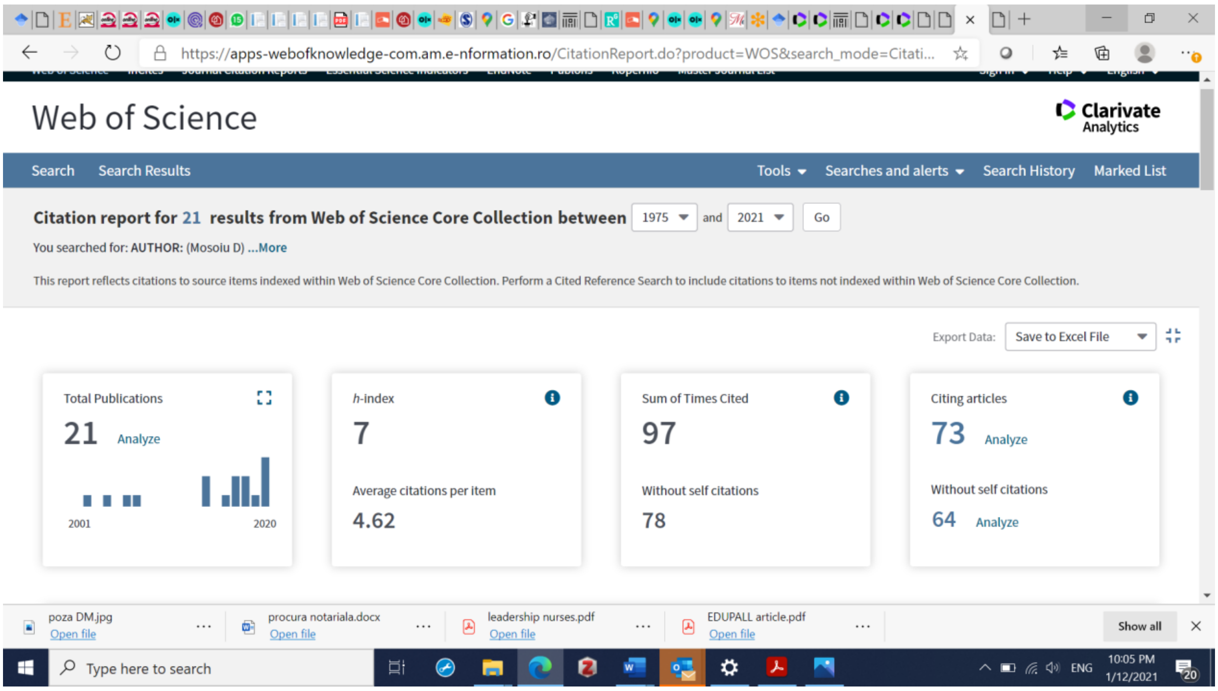

Citation report for 21 results from Web of Science Core Collection between 1975 and 2021

You searched for: AUTHOR: (Mosoiu D) ...More

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Total Publications
21

h-index
7
Average citations per item
4.62

Sum of Times Cited
97
Without self citations
78

Citing articles
73
Without self citations
64

3. SCIENTIFIC, PROFESSIONAL AND ACADEMIC FURTHER DEVELOPEMENT PLANS

3.1 SCIENTIFIC FURTHER DEVELOPEMENT PLANS

3.1.1 Palliative care sedation the process, ethics and economics that underpin it

Research background

Palliative sedation has been defined in different ways but core components involve the deliberate lowering, by medication, of the consciousness of a patient in the last phase of life. It is estimated that palliative sedation precedes 10-18% of all deaths in European countries, although with considerable differences[124]. Palliative sedation has been associated with life shortening effects and slow euthanasia, although there is little empirical evidence to support this contention[125]. Nevertheless, the medical-ethical debate around this topic continues.

The guidelines for palliative sedation have been developed based on experts consensus[126] and there is a delay in their translation into the clinical practice[127]. The administration of sedatives for refractory symptoms should be based on what is needed for symptom relief and its success should therefore be studied in terms of reduction of patient distress with sedation as a means. Patient comfort is the aim, not deep sedation as such. Although this is mentioned in most guidelines, most research is limited to continuous deep sedation. To reflect this broader research intention, we will use the term proportional palliative sedation.

Refractory symptoms mostly occur in the last weeks of life and the use of palliative sedation, in particular deep sedation, and is mostly limited to patients with a life expectancy of 1-2 weeks. Palliative sedation is widely applied, mostly in advanced cancer patients. Palliative sedation should be directed at symptom relief and improving of quality of life and patient comfort which is a dominant aim of this call. However a recent Cochrane review concluded a lack of robust studies to decide about evidence even for the basic assumption that palliative sedation improves patient comfort[128]. According to this review, most studies are limited to case series, prospective research is largely lacking and comfort is measured in various ways, if at all. Dyspnea and delirium remain difficult to treat symptoms and registration of complications or adverse events is almost absent. Moreover, cultural and ethical context often limit generalisation and cause confusion about terminology. Finally, most studies are restricted to deep and continuous sedation which does not reflect the whole spectrum of controlled sedation strategies at the end of life (continuous, intermittent, deep and light) to treat refractory symptoms. Therefore there is a need to adapt or modify the focus on deep and continuous sedation into a focus on proportional palliative sedation where sedation is carefully titrated towards symptom control and patient comfort instead of deep sedation as such. In addition, we would like to better facilitate the decision making process for patients with refractory symptoms by using moral case deliberation, which is a novel strategy in the context of palliative sedation.

Therefore, this project aims to contribute to the grave need to strengthen the evidence of proportional palliative sedation for refractory symptoms with regard to a) patient comfort, possible complications, and applied levels of sedation, b) Caregiver and family experiences and distress in the context of a variety of sedation cases across several countries, c) improved decision making regarding clinical and ethical sensitivities, taking into account the various ethical and cultural contexts in Europe.

One of the first studies that mentioned sedation in the context of palliative care is a prospective study from 1990 of Ventafridda et al. who investigated symptom prevalence in 120 terminal cancer patients and concluded that about half of them died with physical suffering that could only be relieved by palliative sedation[129]. During the past decade, surveys of physicians have shown that the practice of has grown considerably and became more acceptable in medical practice. However ethical and societal debate has also highlighted ethical controversies surrounding palliative sedation in particular concerns about life shortening effects and a possible medicalization of death and dying.

Aim this project will study the decision making process during and after the assessment of refractory symptoms and will introduce a novel way to facilitate and support the medical and ethical discussion using the dilemma method. This is followed by a cost consequence analysis with a policy workshop with national palliative care associations.

Method - *for the ethical part* – The dilemma method of moral case deliberation is capable of demonstrating the ethical issues arising in the cases of palliative sedation and provides a structured, systematic dialogue of healthcare professionals discussing a morally difficult case[130]. Moral case deliberation consists of a structured approach of a specific clinical dilemma in a multidisciplinary context, taking into account ethical sensitivities. The aim is to overcome the perceived dilemma and to come to a concrete treatment decision for a specific patient case.

This will be done by organizing two multidisciplinary meetings with professional caregivers per center. During the first group interview a fictive patient case is introduced. This fictive case (a vignette) will enable us to compare the discussions across the 16 clinical centers and to investigate similarities and differences in the discussions. During the second focus group, a real local patient case with refractory symptoms and the possible role of palliative sedation will be discussed in a moral case deliberation to investigate whether and how this method can support, structure, and facilitate the medical and ethical discussion. Palliative care experts are present at the meeting and chairs will be trained in the dilemma method beforehand. The multidisciplinary case discussions will be tape recorded, transcribed verbatim, and analyzed Effectiveness of the moral case deliberation method in the context of palliative sedation will be evaluated using the Euro-MCD instrument that needs to be filled in by participants before and after a (series of) moral case deliberation. The instruments consist of six domains: Enhanced emotional support, Enhanced collaboration, improved moral reflexivity, improved moral attitude, impact on organizational level and Concrete results[131]. Additionally, a burnout scale will be added (eg the Maslach burnout scale) to measure emotional exhaustion in participating caregivers.

-for the health economics part, the objective is to perform a Cost Consequence Analysis and formulate policy recommendations Cost consequence analysis is a type of cost-effectiveness analysis that lists the costs and effects in a ‘balance-sheet’. Costs and consequences will be presented and discussed in a policy workshop with representatives from national palliative care associations in order to interpret the costs of a proportional palliative sedation (including careful attention of caregivers, tailored care in decision making, excellent communication with patient and family, and continuous monitoring of the patient) together with the effects as investigated in the project, including the role of a revised framework. Furthermore, policy recommendations and an action plan will be presented to the EAPC board.

3.1.2 Basic research competencies for all palliative care clinicians

The rate of medical advance during the 20th century was enormous, due to the improvements of technology as well as new scientific discoveries. Modern palliative care, as part of the health system, has developed rapidly in western countries in the last part of the twentieth century.

An important step was taken in 2014 when the World Health Assembly (WHA) passed its first palliative care resolution. Despite such broad recognition of palliative care, worldwide only about 14% of people who need palliative care currently receive it.

As an ongoing process of integration palliative care in the national health care system, it is important to address specific strategic objectives (according to Word Health Organization model) such as: access to medication and services wherever these are needed, education of professionals, review legal framework and develop national policies.

The present project aims the education level giving a special focus on palliative care professionals' research competencies to improve their daily clinical practice creating an added value both for patients cared and for health system in perspective.

From the SWOT analysis elaborated by the partners some weaknesses were identified: low capacity to effectively read and understand research literature, few studies made in palliative care in an evidence-based clinical practice framework. As research skills are needed for lifelong learning, level of research in the formal education varies between countries and between different PC professionals/ educators.

Research as one of the core competencies in palliative care is important
because:

- There is a need to identify and address relevant problems to patients in palliative care
- To establish a baseline of what is good practice
- To identify better ways to help with symptom control

There are some developed countries (like Australia and USA) where "evidence-based practice framework" and ability to identify relevant research to improve health outcomes is included in a national professional standard. Despite the importance of using research literature in the medical act, a study conducted by Hines J. showed that many nurses reported feeling unable to effectively read and understand research, which turns to a lower use of research into practice. This reluctance often leads to prefer other informal sources of information such as colleagues. Nowadays many resources are allocated to research and innovation to improve the quality of life and there is a need for connection between researchers and professionals to produce measurable outcomes on peoples' quality of life. Thus, a better understanding of research from professionals will conduct to reducing the gap between researchers and palliative care professionals, with opportunity to replicate for other clinical specialties.

The project is aiming to include basic research competences as part of the clinical practice of palliative care professionals addressed with the objectives:

1: Designing effective education strategies for enhancing basic research competences across members of multidisciplinary teams in palliative care.

2. Stimulating the development and use of innovative approaches to increase the effective uptake evidence-based research in palliative care.

3. Increase the research capacity for a number of 48 practitioners in palliative care.

4. Raise awareness among PC clinicians regarding the importance research integration in clinical practice

Responding to this complex problem is highly relevant at the European level and need a mixed cultural and innovative approaches to increase the evidence-based research in palliative care. The overall result of the project will be an increased capacity to integrate research in daily palliative care practice, and thus provide better care for patients in need of palliative care. Specifically, the project will result in an improved professionals' capacity to make critical appraisal and understanding of research literature in a new medical field (such as palliative care) and to integrate current best evidence from palliative care research into the clinical daily practice.

By the end of the project a background of trans-national collaborative research will be created among palliative care clinicians and educators in the project countries, with high outreach potential towards other palliative care clinicians beyond the years of the project, due to the varied materials and wide teaching methods made openly available, as well as the involvement of the European Association of Palliative care, as the European umbrella association in this specific field, in the dissemination process.

Upon the completion of the proposed project a choice of educational resources will have been developed and made available freely, to match the needs of clinical practitioners in palliative care, to help them in self-assessing their level of competence in understanding and using research evidence, and thus to meet further challenges in the daily clinical care.

We expect to have a functional project website with free access online materials specific to palliative care research that will provide high-quality, interactive learning opportunities in the research field for palliative care professionals and educators, thus enabling them to attend a more flexible education form at their own pace.

The following tangible results are to be achieved by the end of the project:

1. A set of core research competencies for palliative care professionals produced;
2. Framework with recommendations for the implementation of basic research in the training of palliative care professionals
3. A self-administered quiz produced, as a tool to appraise the individual level of research literacy and competencies for palliative care professionals and educators
6. a flow diagram for guiding the clinicians in developing their research proposal
7. A guideline with description of each step involved in the development of the research proposal
8. 4-6 videos on real clinical practice challenges that have been transferred into research proposals (available in the languages of the project partner countries)
9. A template for the research proposal
10. A toolkit introducing palliative care clinicians to basic research competencies, using an innovative approach: a theoretical part presenting research methodology, and practical, interactive parts supporting clinicians in acquiring specific research competencies
11. A consensual recommendation whitepaper document on the basic research competencies to be included in the training of palliative care clinicians and allied professionals in the multidisciplinary team

The innovative aspect of the project is first the defining of research competences that are not designed, not only for the field of palliative care but also for other socio- medical specialties. This aspect is a concern for other medical specialties as it is shown in a policy paper “Research competencies framework”, produced in 2007 by the Faculty of General Dental Practice.

The project is an innovation in vocational education and training for palliative care because it empowers the multidisciplinary professionals’ research skills that support adult individual learning and evidenced based practice. The approach is based on current situation of great access to online materials and a decreasing the interest to attend face to face trainings, but also, with the well-known fact that there are no quality instruments in adult lifelong learning and the target group need to develop some specific skills to distinguish between relevant or irrelevant research literature.

My role is a project lead from the part of Transilvania University

3.2. PROFESSIONAL AND ACADEMIC FURTHER DEVELOPEMENT PLANS

As a teacher, I will remain involved in active training of the medical and master students and will continue to foster iInclusion of teaching tools specific to adult learning in the teaching activity. Also based on the experience gained in the pandemic I will promote blended education program for medical and master students

The most obvious feature of adult learning is the responsibility with which participants seek to acquire skills and knowledge. The adult engages in a learning activity if there is a correlation between his projects and the desire to achieve them. For the adult, the learning activity means an inner act, not a compulsion; he is not a passive receiver, he seeks, discovers knowledge, is an agent of his own education. The adults involved have an intrinsic motivation and are oriented towards a well-defined goal.

In developing the training plan I will take into account the following characteristics: -adults need to know why they have to learn a certain thing; -adults must be involved in the planning and evaluation of their activity. The teaching techniques I will use will also include experiential learning (visiting the Hospice Casa Speranței palliative care service, meeting patients and the team), debating and problematizing on difficult cases in terms of high ethical issues, symptomatic management, etc. Because I believe that the student must be the beneficiary of the learning process, the learning methods will be student-centered - case studies, debates, role play, working in small groups, demonstrations.

Collaboration with other universities in the country for the inclusion in the topic of palliative care in the curriculum for training students in medicine and healthcare will be another priority in my activity

In 2011 I started organizing in Brașov meetings between deans and teachers with a certificate in palliative care and we invited faculties / universities from 5 centers Cluj, Iași, Tg Mureș Timișoara and Brașov to discuss the opportunity to introduce palliative care in the training program of future doctors and nurses. Following the discussions, the University of Iași took over palliative care as a compulsory subject for the nursing discipline and Cluj, Timișoara Tg Mureș as optional for medical or medical students. In 2017 I won through competition an Erasmus + grant EDUPALL that had as main objective development of an European standardized palliative care curriculum. The objective was achieved and 4 Romanian university with Transilvania university as lead implemented the new curriculum.

I intend to develop collaboration with the other 8 Romanian universities and with the state university in Moldova to transfer the curriculum and the teaching material also to these new centers in order to have a unitary curriculum throughout Romania.

I will continue this approach, gradually including in these meetings other universities insofar as they will have teachers trained in palliative care, thus avoiding the risk of initiating such courses with lecturers who do not have a training and practice in these services and who would be attracted only by the academic position. It is encouraging that in the palliative acre diploma course for doctors more academic staff is taking up the program.

Palliative care is impossible to achieve without a team of many professionals: doctors, nurses, priests, psychologists, social workers, therapists, etc. who focus their activity to maximize the quality of life of the patient. Traditional academic education prepares us too little to be efficient workers in such teams and to value the potential of each team member in a non-hierarchical structure. The master's degree in palliative care is open to all disciplines and brings complexity to the educational process, but without the multidisciplinary approach in the case of assisting patients with advanced diseases, aspiring to efficiency becomes a true utopia.

Complex multidisciplinarity does not mean the simple juxtaposition or coexistence of disciplines in the same field of study, but is accompanied by a transition through interdisciplinarity (a permanent transfer of information and methodology from discipline to discipline) to transdisciplinarity as an academic educational purpose. As a teacher, I am the first to make the qualitative leap by accumulating the necessary information, from several educational fields and to facilitate dialogue and learning between learners. Although it is demanding, I am convinced of the value of education in multidisciplinary groups and I opt for its preservation.

Being awarded with sTANDEM certificate in English for Medical Purpose level C1 I will actively support the creation of a new Department with English teaching for foreign students.

I will continue to keep all my teaching materials up to date in order to connect the students to the newest information in the field of palliative care. I will encourage my students to participate in our Congresses and Conferences, as well as in our research projects in order to contribute to a full and comprehensive professional build-up.

I will be very involved in coordination of master thesis and doctoral thesis I will continue to support the young doctors to perform their own researches and to communicate the results of their research in the academic environment.

I will continue to focus my activity in continue postgraduate training of doctors, both by organizing and participating in continuing medical education courses and by writing books that contribute to raising the level of medical education and thus, the quality of patient care.

I intended to remain actively involved in the structure of the Romanian Palliative Care association and in the activity of the European Palliative Care association, acting as the board link to the Education Reference group. I will try to contribute to the further development of the relationship between our University with other foreign universities in order to increase the quality of both didactic and scientific activity of our Department.

The national palliative care strategy developed by Hospice Casa Speranței, ANIP and representatives from NICE (National Institute of Clinical Excellence) provides 3 levels of palliative care services: support for self-care, palliative approach and specialized services. The palliative approach will mainly be achieved through family physicians who should receive appropriate training. The proposal for a national palliative care program provides a budget line for their training and for the subsequent funding of palliative care.

For future generations of family physicians, it would be ideal for this training to be part of the training during the residency.

I will start the consultation process with the bodies interested and involved in the process and in partnership we will start the process of elaborating the curriculum and structuring the training program for future trainers. The goal is that by 2025 there will be a curriculum piloted by at least one faculty / university.

Promoting values and supportive attitude within the work team

One of the many valuable things I learned from working for over 15 years at Hospice Casa Speranței was the value of creating a dynamic and motivated capable team, the satisfaction obtained by supporting the professional growth of colleagues and the pleasure of working later with these people. I hope that I can translate these lessons into academic work both in relation to students, master students and colleagues. I will promote open communication, respect, collaboration and support and I hope that this work will bring me as much satisfaction as I have in my clinical work.

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