Innovating care for people with multiple chronic conditions in Europe

An overview

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Content

Summary

Why is multimorbidity a challenge for European countries?

- Currently an estimated 50 million people in Europe live with multiple chronic conditions (multimorbidity), and this number will further increase in the next decade. Especially among people aged 65 and over multimorbidity is common with prevalence rates estimated as high as 65%.
- Multimorbidity deeply impacts on the lives of individuals in terms of physical, psychological and social wellbeing. The comprehensive needs for long-term care and support of people with multimorbidity result in a high pressure on European health care systems in terms of the complexity of treatment and care delivery, manpower and costs. It is increasingly being recognized that the provision of care delivered by different disciplines and/or sectors in an integrated manner may be more effective in terms of quality of care, patient and care provider satisfaction, patient outcomes and costs, compared to fragmented care, though the evidence is still weak.

What was found in the ICARE4EU project?

- Based on information provided by a survey among country-experts in 31 European countries, hardly any strategies or policies at a national or regional level directed at (integrated) care for people with multimorbidity have been identified. Most of the current national and regional policies or strategies concerning chronic illness care are disease specific.
- Innovative approaches to improve care for people with multimorbidity have nevertheless been introduced in clinical practice in many European countries: country-experts identified 101 practices or programmes[1], mostly operational at a local or regional level, in 25 European countries.
- Most programmes that had been identified are from Spain (n=15). The number of identified programmes from other European countries varies between one and nine. In some countries no programmes were identified.
- According to the responding contact persons of these programmes, increasing multi-disciplinary collaboration is the objective most often strived for. Furthermore, improving patient involvement and improving care coordination are frequently mentioned objectives of the programmes.

[1] The term 'programmes' refers to all identified initiatives that (aim to) put integrated care for people with multimorbidity into practice.

- Regarding the types of organizations and care providers involved, primary care practices and general practitioners were most often involved in the programmes.
- Based on a cluster analysis of our survey data, two general types of programmes could be distinguished: more confined programmes and more comprehensive programmes. Whether a programme could be considered a more confined or more comprehensive one, depends on its number of objectives, the aspects of multimorbidity care that were addressed, the number of care disciplines and sectors involved, and established organizational structures.
- Most of the 101 programmes could be considered as 'confined'; they focus for instance on patients who have been diagnosed with a combination of two or three predefined chronic diseases, or address a specific part of the needs of multimorbid patients (e.g. medical care), or have established a limited level of integration of care by specific organizations or disciplines.
- Elements that are theoretically needed for a successful implementation of integrated care programmes, according to the Development Model for Integrated Care, are to a large extent met by the selected programs, although the way in which this is done varies between programmes.
- Based on the results of our inventory in 31 European countries, we conclude that in many European countries innovative approaches have been introduced or implemented to deliver integrated care to people with long-lasting and complex health problems, including people with multimorbidity. However, so far health policies of European countries or regions do not seem to have a specific focus on multimorbidity.

What are the implications of this report?

- We hope that this report will create awareness for the need of reorganizing care for people with multimorbidity. The description of the programmes that were included in the ICARE4EU project, make clear that various initiatives exist in this regard, which can inspire policy makers and health care providers. The list of programmes and contact details that are provided at the end of this report can facilitate the exchange of information.

Introduction

The aim of this report from the ICARE4EU (Innovating care for people with multiple chronic conditions in Europe) project is to provide insight into current practices of integrated care for people with multimorbidity in European countries. Multimorbidity refers to any co-occurrence of multiple chronic conditions within one person [1]. Multimorbidity is a major challenge for health care systems, since people with multimorbidity may have complex care needs, which require care from multiple health care providers from different sectors within and outside of the health care system. Coordination of care for these patients is therefore a challenge in health care systems which tend to be organized around single medical specialties. As a consequence, multimorbid patients often receive fragmented, incomplete, inefficient and ineffective care, which could lead to e.g. conflicting medical advices and preventable hospitalizations [2-4]. In response, increasingly, comprehensive, or so-called integrated, care programmes have been developed and implemented in European health care systems [5-7]. Integrated care can be defined as patient-centred, proactive and well-coordinated multidisciplinary care, using new technologies to support patients' self-management and improve collaboration between caregivers. Integrated care is also referred to as e.g. shared care, guided care, transitional care, disease management programmes or comprehensive care programmes [8].

The project ICARE4EU aims to contribute to the innovation of care for European citizens with multiple chronic conditions by disseminating knowledge of potentially effective and efficient models of integrated care for people with multiple chronic conditions that are developed and implemented in European countries. The ICARE4EU project is particularly directed at innovative approaches to integrated care, that can be inspiring for other regions or countries that want to move from fragmented towards integrated care for people with multimorbidity. The vast majority of people with multimorbidity are older individuals. The complexity of the care needs of people with multimorbidity might differ, depending on the type of comorbidities and on personal circumstances and resources. Regardless of variation in the complexity of their care needs, people with multimorbidity need care from multiple care disciplines. Integrated care has the potential to address these comprehensive needs for health and social care, as its goal is to provide care by multidisciplinary teams of professionals and/or informal carers. For people with severe or many diseases, this might be more difficult to establish than for people with less severe or few diseases.

The current report provides an overview of innovative programmes and approaches in Europe to address the challenges of care provision to people with multimorbidity. Information will be provided on various characteristics of integrated care programmes for people with multimorbidity that have been identified in 31 European countries. This includes for instance the objectives of the programmes, their multimorbidity orientation (i.e. directed at a combination of specific chronic diseases or a non-specific combination of chronic diseases) and the type of health care providers that are involved. The content of this report addresses policy makers, health care organizations and health care providers who are interested in the development of integrated care for people with multimorbidity.

The first chapter of this report describes the challenge of multimorbidity for health care systems in European countries in more detail, and the policies and strategies of European countries to address this challenge. The second chapter describes characteristics of current integrated care programmes in European countries targeting people with multimorbidity, including programmes directed specifically at older people. Characteristics of integrated care programmes will be linked to characteristics of the population (age, prevalence of multimorbidity) and the health care system of a country. In the last chapter diverse approaches to make a typology of the identified integrated care programmes are described.

Chapter 1. Multimorbidity, a challenge for health care systems in Europe

Key-messages

- The prevalence of self-reported multimorbidity is high in all European countries, but especially in Hungary, Estonia and Poland (55% - 58% among people aged 50 years or older).
- The comprehensive needs for long-term care and support of people with multimorbidity result in a high pressure on European health care systems in terms of the complexity of treatment and care delivery, manpower and costs.
- It is increasingly being recognized that the provision of care delivered by different disciplines and/or sectors in an integrated manner may be more effective in terms of quality of care, patient and care provider satisfaction, patient outcomes and costs compared to fragmented care.
- Hardly any strategies or policies at a national or regional level directed at (integrated) care for people with multimorbidity have been identified. Most of the current national and regional policies or strategies concerning chronic illness care are disease specific.

Multimorbidity is a challenge for health care in European countries in various ways. It impacts on patient outcomes as well as on health care utilization and costs. Furthermore, care delivery processes for single chronic conditions do not seem to meet the needs of multimorbid patients. In the first section of the current chapter, the prevalence of multimorbidity for European countries and its impact on the individual, on health care delivery and on health care systems will be described. In the second section the potential of integrated care as a response to the challenge of multimorbidity will be outlined. In the third section of this chapter, current strategies and policies that aim to improve chronic illness care, and multimorbidity care in particular, in European countries will be described.

1.1 The prevalence and consequences of multimorbidity in European countries

Chronic diseases are the leading cause of disability and death in European countries [9], and an increasing proportion of the chronically ill people suffer from multiple chronic conditions (multimorbidity) [5]. Currently, an estimated 50 million people in the European Union suffer from multimorbidity and this number is expected to further increase in the near future. Not only does it deeply impact on people's quality of life – physically, mentally and socially – [5, 10], multimorbidity also imposes a burden on public

health care expenditures and the health care system because people with multimorbidity require care from many providers. Concerns relate to the sustainability of health care systems with their rapidly increasing costs, and the expected scarcity of labour force to provide health care in the future [11].

1.1.1 The prevalence of multimorbidity in European countries

Chronic conditions

The number of people living with a chronic condition, such as diabetes, asthma or depression, is increasing in all European countries. In Europe approximately 1 in 4 people of all ages has at least one long-standing condition, as illustrated by Figure 1.1 [12]. The prevalence of having a long-standing condition is thus generally high in European countries, but relatively higher in Finland and Estonia compared to other countries (see Figure 1.1). Comparative (Eurostat) figures about the prevalence of five chronic conditions in 17 European countries (Figure 1.2) show that hypertension is quite common in all countries, but especially prevalent among Eastern European countries, such as Hungary, Slovakia and Bulgaria [13]. Factors that may be responsible for the differences between countries are: 1. the countries' economic situations (e.g., employment rate and poverty rate), 2. differences in the age distribution of their populations, and 3. differences in the lifestyle of populations, such as smoking behaviour and eating habits [14, 15]. For instance, 20% of the deaths from cardiovascular disease in men are due to smoking [16]. The prevalence of smoking is generally higher in Eastern European countries [16]. This reflects other findings suggesting that cardiovascular disease is more prevalent in Eastern European countries than in Western and Central European countries [16]. Asthma, COPD, depression and diabetes mellitus are less prevalent than hypertension, as illustrated in Figure 1.2. Furthermore, whereas the prevalence of one of these conditions can be relatively high in a certain country, the prevalence of another condition could be relatively low. For instance, the prevalence rates of asthma and depressive disorders are relatively low in Bulgaria, but the prevalence rate of hypertension is relatively high in this country, compared to the other countries.

Figure 1.1 *Percentage citizens (aged 16-64) from European countries having a self-reported long-standing illness or health problem per country in 2011 [12].*

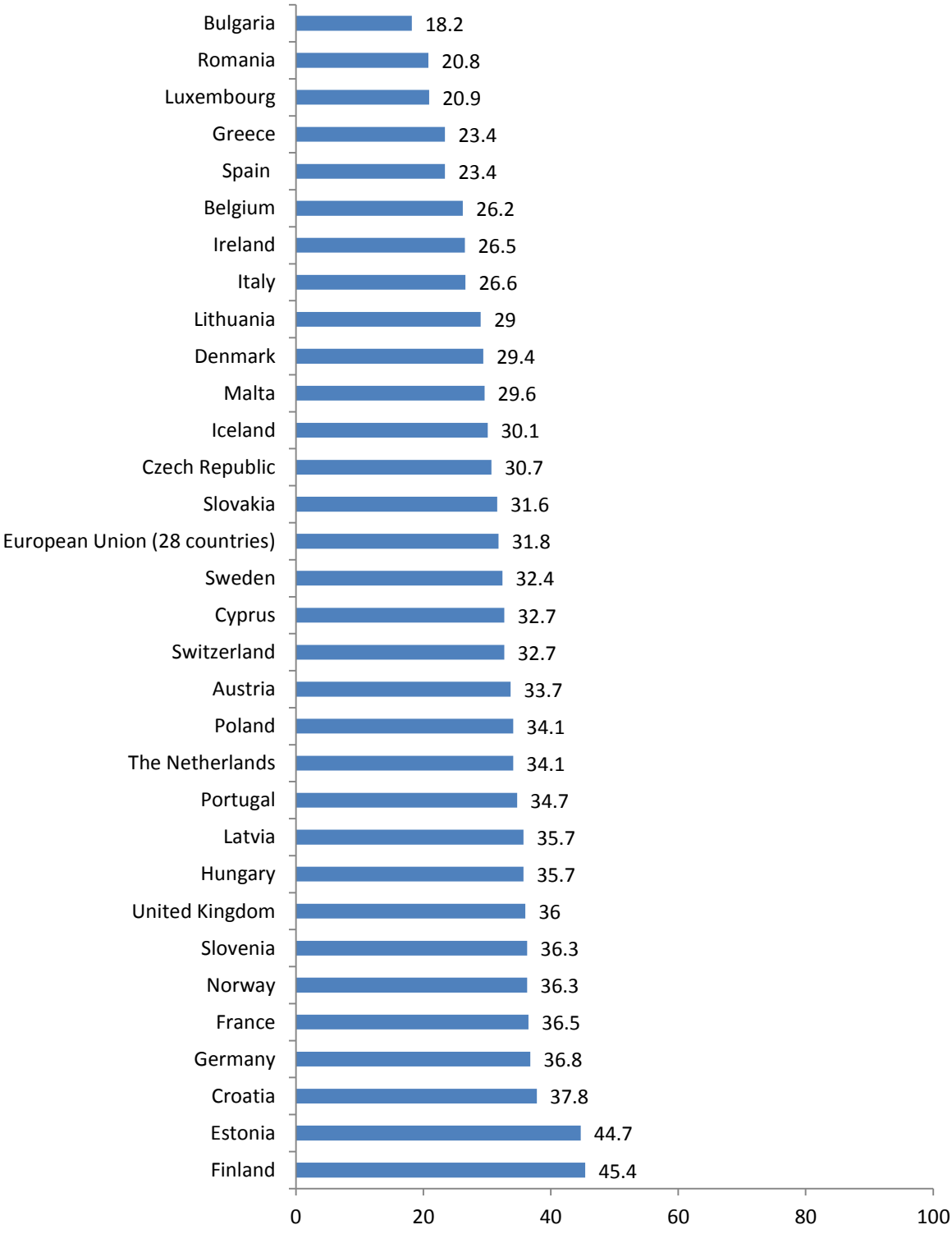
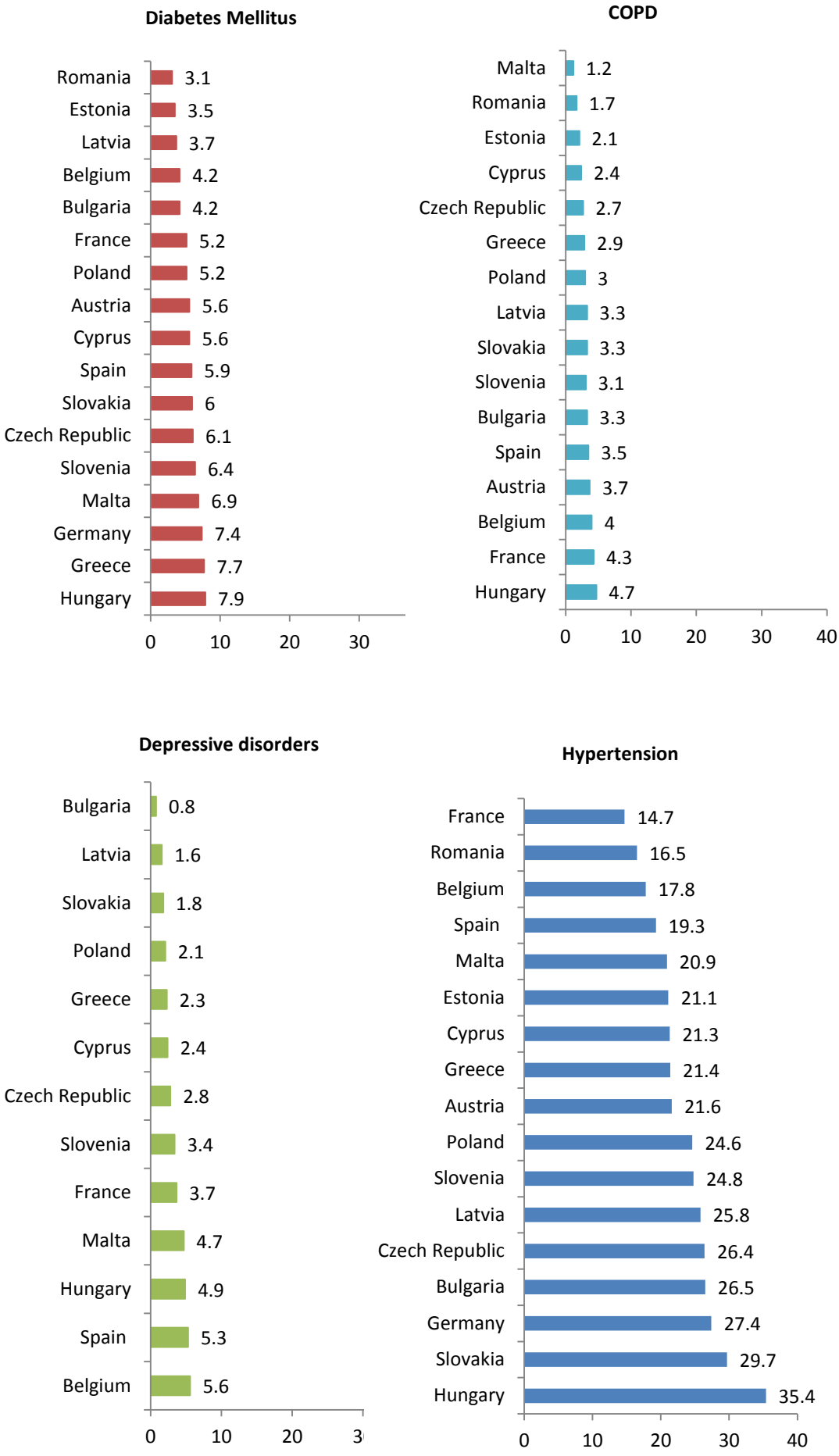
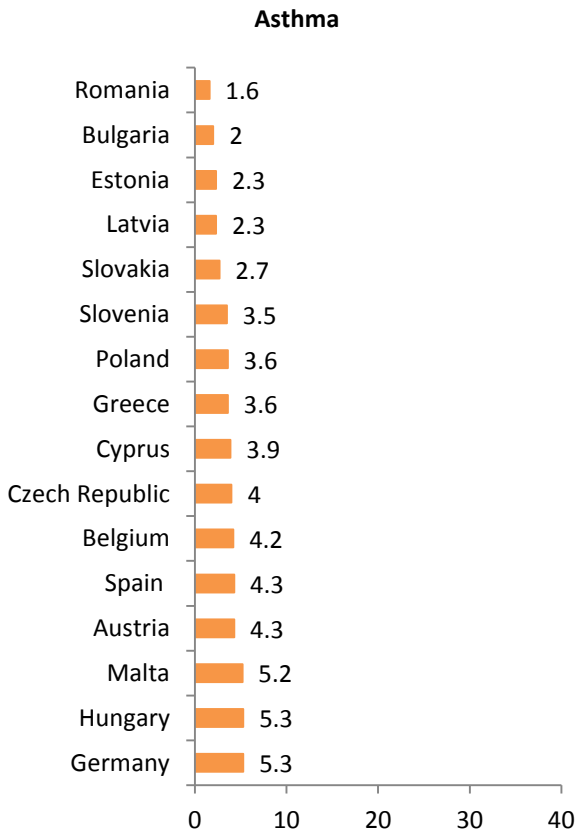


Figure 1.2 *Prevalence rates (percentages) of common self-reported chronic diseases among EU citizens (aged 15 years or older) per country in 2008 [13].*

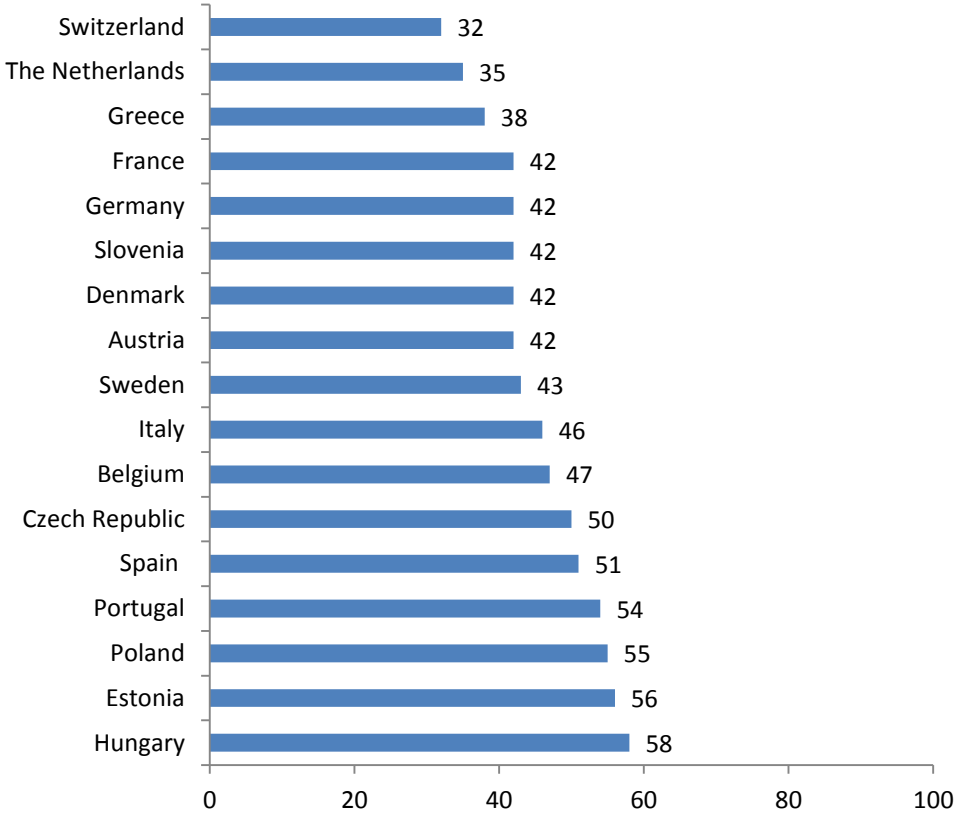




Multimorbidity

Not only the number of people suffering from one chronic condition is increasing, but also the number of people who suffer from multiple chronic conditions. For instance, relatively many people suffer from diabetes mellitus as well as heart disease. The prevalence of self-reported multimorbidity is high in all European countries, as is illustrated in Figure 1.3, but especially in Hungary, Estonia and Poland (55% - 58% among people aged 50 years or older in these countries) [17]. Switzerland has a relatively low rate of people reporting multimorbidity, although this is still 32% of all people aged 50 years or older.

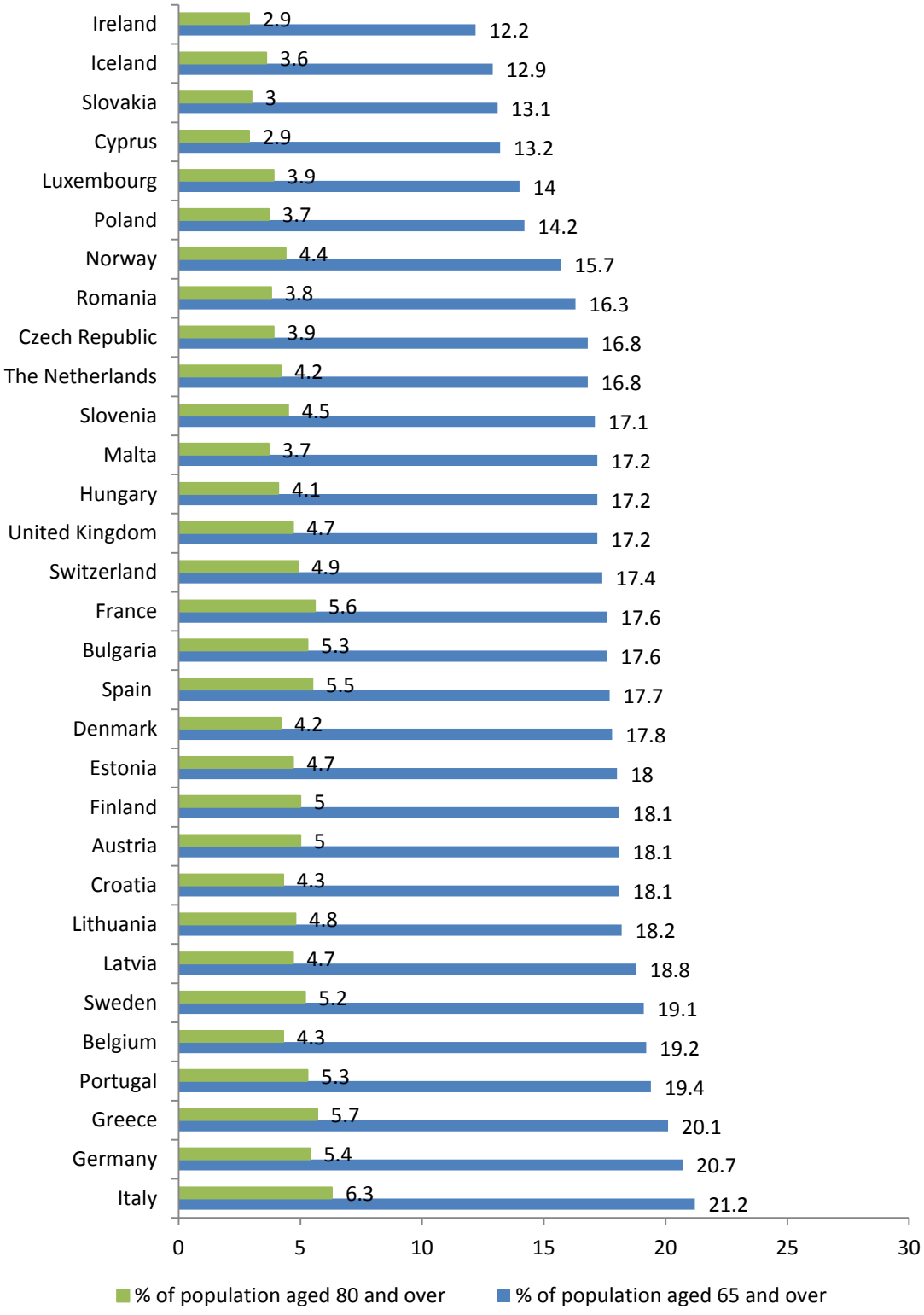
Figure 1.3 *Percentage of people aged 50 years or older, reporting to live with multiple chronic conditions per country in 2010/2011 [17].*



A Dutch study shows that frequent combinations of chronic conditions include diabetes mellitus and coronary heart disease (3.6% of people aged 55 or older), diabetes mellitus and osteoarthritis (2.8%), and osteoarthritis and chronic back and neck pain (2.8%) [18]. Multimorbidity is most prevalent among older people [5, 19]. Although the prevalence rates found in studies differ because of different definitions, percentages have been reported as high as 65% in people over the age of 65 and even 85% in people over the age of 85 [2, 5]. Since life expectancy is increasing in Western countries, the number of people living with multimorbidity will increase as well. Figure 1.4 shows the percentage of the population in European countries that is aged 65 years or older and 80 years or older. Italy, Germany, Greece, Sweden and Belgium show relatively high proportions of people aged 65 years or older (19.1% for Sweden – 21.2% for Italy). Slovakia, Cyprus, Ireland and Iceland have relatively low proportions of people aged 65 years or older (12.2% for Ireland – 13.1% for Slovakia). Countries with relatively many older people may feel the highest need to develop strategies to implement integrated care approaches for their (older) citizens suffering from multiple chronic conditions. However, although older age does contribute to the challenge of multimorbidity, it is not the only contributor. The prevalence of multimorbidity also depends on factors such as life-style (a BMI of 30 or higher triples the risk of multimorbidity [20]), economic situation (e.g., employment rate,

poverty rate), low socioeconomic status, smoking behaviour and unhealthy diets. This is illustrated by comparing figure 1.4 with figure 1.1 to 1.3: Hungary has for instance relatively low rates of people aged 65 year or older, but at the same time a relatively high prevalence of multimorbidity.

Figure 1.4 *Percentage of 65+ and 80+ people within a country's total population, per EU member state in 2013 [21, 22]*



1.1.2 The impact of multimorbidity on individuals, health care systems and delivery

Having multiple chronic conditions is associated with poor quality of life, disability, psychological distress and an increased mortality risk [5, 10]. The health consequences of multimorbidity can be more severe than can be expected based on the individual chronic conditions. Having multiple chronic diseases increases the likelihood of developing physical disability, and the interaction among certain diseases can cause specific types of disability [5, 23]. Because multimorbid patients often take various types of medication on a daily basis, they have an increased risk of adverse drug events, which can include death as well [3]. Multimorbidity does not only have a physical impact, but it can also have a mental and a social impact. It can be more difficult to participate in society for people with functional problems due to multimorbidity, which increases the risk of social exclusion [24]. For instance, multimorbid patients are more likely to early exit from the labour market [25].

Multimorbidity not only impacts on individuals and their social environment, but also on health (and social) care systems. Because of the high needs of many people with multimorbidity, it is associated with a frequent use of (many) health and long-term care services. A study from the Netherlands shows that multimorbid patients visit their GP more often than patients with a single chronic disease [26]. Besides, multimorbid patients are more likely to be hospitalized than patients with one chronic condition [26, 27]. A study from Lithuania estimated that the average number of hospitalizations, re-hospitalizations, home visits and hospital stay days increased with the number of chronic conditions a patient had, regardless of age [28]. As a consequence of frequent and inefficient use of health care, public as well as private health care costs increase due to multimorbidity. In an Irish study it was estimated that the health care costs of patients with four or more chronic conditions were almost five times higher than for patients without chronic conditions [29].

Multimorbidity also has consequences for the delivery of health care. The care for multimorbid patients is characterized by overlap as well as gaps. Overlap may occur because care is often fragmented and there is a lack of coordination of the care provided by the various care providers involved in chronic illness care. In addition the disease-specific chronic disease management programmes, which have been implemented in several European countries, partly cover the same types of care (for instance, regular check-ups), which results in overlap when people with multimorbidity participate in more than one programme. Overlap not only inefficient, but may even be harmful or unsafe for

patients, for instance when different medications are prescribed by various health care providers. Such polypharmacy might lead to adverse drug reactions and drug interactions. Gaps in care may also arise, for instance when it is unclear for health care providers which services are most suitable to meet the needs of multimorbid patients. These overlaps and gaps in the care for people with multimorbidity require new ways of delivering health care. The delivery of good quality care for people with multimorbidity is very complex, because it requires the involvement of many health care providers and the integration of different care systems (e.g., health and social care systems). Additionally, there is still a lack of evidence regarding what is considered good quality care for people with combinations of chronic diseases. It is for example unclear which health care (and social care) providers should be involved, which of their competencies are especially needed, and to what extent patients and/or informal carers should be involved with regard to prioritizing health problems to be treated or managed [1].

1.1.3 The challenge

Currently, health care and social care systems in European countries are mostly disease-specific and monodisciplinary oriented, because health care used to be directed at curing the acute illness, which requires specialization. With the increasing number of people with one or more chronic conditions, the primary focus of care has shifted from acute care to long-term care. However, the organization of care remained to a great extent acute care oriented, while long-term care (especially for those who suffer from multiple conditions) often requires the coordination of care between multiple providers. Health care systems in Europe struggle with inadequate coordination of care for people with multimorbidity. The challenge is to reform the way health and social care is delivered to people with multimorbidity, in order to increase its quality (in terms of effectiveness, efficiency and completeness) and sustainability (in terms of costs and work force) in the near future.

1.1.4 Potentials of integrated delivery of care

Integrated care arrangements and programmes have the ambition to respond to this challenge. Integrated care aims to be patient-centred, proactive and well-coordinated multidisciplinary care [6, 7], which is in part given shape by the use of new technologies to support patients' self-management and improve collaboration between caregivers. Integrated care is expected to improve the quality of care for those patients who have complex care needs, whilst making efficient use of resources [30]. Currently, the evidence on how integrated care should be designed in order to meet the needs of multimorbid patients is not conclusive. However, research does provide indications of elements that

seem to be important for the delivery of care for patients with multimorbidity. This includes for instance placing the general practitioner (GP) as the central health care provider in a care team [31, 32]. Recently, the Development Model for Integrated Care (DMIC) has been developed and validated [33]. This evidence- and expert-based model is based on other, frequently used models, such as the Chronic Care Model [34]. The DMIC model proposes nine groups of actions that are relevant contributors to the development of integrated care [35]. For example actions that contribute to patient-centeredness, or actions that contribute to inter-professional teamwork. Integrated care initiatives that meet the nine DMIC groups are expected to be effective in providing good quality care to people with multimorbidity. We will further elaborate on the DMIC model in Chapter 3 (see Box 3.1 on page 45 for illustration).

1.2 How European countries are coping with challenges of multimorbidity

1.2.1 Policy options

Evident demographic and epidemiological transitions have changed the health needs and the demand for health and social care services of major population groups. Policy makers have become aware that, despite growing health budgets, health care systems fail to respond effectively to the increasing prevalence of chronic diseases, in particular among older people. Although the problems are acknowledged and the need to redesign the currently acute and episodic care oriented health care systems is increasingly understood; however, the way to proceed is far from univocal.

Roughly speaking, possible strategies either aim to reduce the burden of chronic diseases, by means of preventive measures, or to make the health care system more responsive to the changing health needs. Both types of strategies may go hand in hand. Preventive strategies usually aim at longer term effects and they may go well beyond the sphere of health care, for instance, when life style campaigns are concerned. Among the strategies to better tune health care systems to the needs of patients with chronic diseases, disease management programmes (DMPs) have been implemented in order to remove barriers in the provision of care for patients with a single disease across levels in the health care system. DMPs usually aim to establish smooth care pathways between primary care, home care and specialist and hospital care. In addition to DMPs, integrated care approaches have been developed in response to situations of more complex needs in which several levels and disciplines are involved. The use of new technology and new skill mix can be supportive to any strategy. In the terminology of the Chronic Care Model (CCM) both

strategies can be labelled as 'delivery system design'. Another strategy that refers to the CCM is patient empowerment or self-management support. There is an increasing awareness that patients' own skills and competencies may contribute to coordinated and more effective care.

1.2.2 Diverse responses

Measures that countries have taken to restore the responsiveness of health care to the changing needs of chronic patients depend on various factors. Firstly, the urgency of the problem is not equal across Europe. The demographic situation and the health and health-related risk indicators differ among European countries and therefore the definition of the problem and the intended solutions may differ as well [30]. For instance, ageing is more prominent in Italy than in Romania and this could be a reason for different policy priorities. As cardiovascular diseases are more prevalent in Eastern European countries, it is likely that DMPs and programmes on integrated care in these countries focus on care for patients with these diseases specifically.

Probably a more important determinant of variation in policy measures is related to the variety of health care systems in European countries. Health care systems differ in their governance structures, the way of funding, the position of professionals and their associations and how patients' access and use of services is regulated. These features may define the problem to be solved but, at the same time, provide options for the solution. National policies, for instance, will not have the same impact in centralized countries where the government has a leading role in health care as in countries where health care has been decentralized. Furthermore, in countries with a strong primary care system, including GPs in a gate keeping role, it may be easier to implement comprehensive care coordination than in countries with weak primary care systems [30, 36]. In countries where primary care is less developed, coordination from hospitals may be more likely. Also the way of financing in health care influences the space policy makers have to undertake actions to improve the care for people with multiple chronic conditions.

Another difference in the way countries respond to the challenges of chronic diseases is in the comprehensiveness and coherence of their policies. In some countries, like Denmark and England, national strategies for the delivery of chronic care have been developed, that integrate health promotion, prevention and disease management within a common framework. In countries where the government is less dominant in health care or where

professionals work in a fragmented system, strategies are more likely to focus on single aspects of chronic disease or care delivery [37].

A last major reason for the diversity of policies across Europe is the lack of evidence for effective strategies, resulting in poor guidance for policy makers to develop reform plans [38]. Although initiatives are not evenly distributed over European countries, there has been an abundance of initiatives aiming to improve care coordination and integration on a smaller or larger scale. However, the number of projects that have been well evaluated is scarce. If evaluated at all, research designs have been weak or effects have only been established in the short run. Another problem is that the effectiveness of strategies and programmes is context dependent: what works in one health care system does not necessarily work in another health care system. The causality of effectiveness is therefore very hard to determine in this respect. It must be concluded that almost no conclusive evidence is available on the effectiveness of strategies and programmes for integrated care delivery to patients with multiple chronic conditions.

1.2.3 Findings from the ICARE4EU project

Via country experts the ICARE4EU project has gathered snapshot information on European policies and strategies, specifically concerning the management of multimorbidity. This information provides indications for the availability of policy responses and strategies – either at national or regional level - related to the management of multimorbidity. Overall, this inventory in 31 countries showed that only in a few countries strategies directed at the management of multimorbidity are undertaken and that comprehensive national strategies are rare. Most reported policies and strategies are fragmented and only address care for a single chronic condition rather than comprehensive policies with a focus on multiple conditions. As far as the focus is on integrated care, only specific elements are addressed, such as the use of e-health technologies, rather than more comprehensive approaches to improve integration of care from various health care providers.

The description of the policies and strategies as reported by the country experts includes three categories, though not mutually exclusive:

- General policies on care for patients with chronic diseases;
- Policies on integrated care;
- Policies with a special focus on care for patients with multimorbidity.

General policies on care for patients with chronic diseases

More than three quarters of the country-experts reported on national or regional policies or strategies in their country concerning chronic illness care, but most were disease specific and not generic. As far as policies were generic, which was the case in Ireland for example (30), they were based on a chronic disease framework underlining the importance of intersectoral activities to address prevention as well as management of chronic diseases. The comprehensiveness of such policies appeared in the variety of aims, including promotion and improvement of the health of the population; reducing risk factors that contribute to the development of chronic diseases; promoting integrated and structured care and the provision of integrated health services. In the Irish context this framework was the basis of national clinical programmes to improve and standardize patient care by bringing together clinical disciplines and a better use of resources, with the final aim to produce greater benefits to all users. A Dutch example concerns a generic programmatic approach of chronic conditions, in which contours of disease management programmes were coupled with care standards and bundled payment schemes [39].

Policies on integrated care

National or regional policies or strategies on integrated care were reported to exist in 18 of the 31 countries. Most of the identified policies and strategies in this group, however, are not focused on multimorbidity but merely on care for older people or on the integration of health care in general. Among the policies in this group is a German association for integrated care, including health care professionals aiming to integrate health care [40]. Another example is from Denmark, where a local government and GPs developed a new model to provide integrated care to patients [41]. Both strategies are directed at a better coordination between sectors, including primary care and hospital care. In Ireland generic policies aimed at strengthening the first contact role of primary care and the delivery of an integrated set of services at the lowest level of complexity that is safe. Special attention was paid to the coordination of initiatives. A national working group was established to select, pilot and recommend an assessment tool to support integrated care delivery for older people [42]. Not all countries had developed clear policies and strategies regarding integrated care. In Italy, for example, the importance of integrated care has been recognized, but concrete strategies or policies could not be reported [43].

Policies with a special focus on care for patients with multimorbidity

Experts in about half of the countries reported the existence of national or regional policies or strategies relevant to multimorbidity care. However, most of these appear not to be developed from the perspective of multiple chronic diseases, but were, for instance, primarily related to care for older people only. For instance, the government and the regions in Sweden jointly took the initiative to a large scale change of the health and social care system for older adults with complex health conditions [44]. In Switzerland, a comprehensive strategy was approved [45], aiming to change the health system in a way that it meets the needs of people better and also stays financially affordable. Although the principal motive for this policy is the aging of the population, care for people with complex conditions indirectly refers to multimorbidity. Such an indirect link is also found in Norway, where polypharmacy is a priority addressed in a national programme for patient safety. Polypharmacy is known to be a major problem among patients with multimorbidity [3].

Observations and assumptions regarding strategies and policies on multimorbidity

On the basis of the information described above, a number of observations and assumptions can be made concerning multimorbidity as an explicit health policy topic in European countries.

- First of all, it may be concluded that multimorbidity is not a prominent explicit priority in health policy in Europe. This does not necessarily imply that it has not been recognized as a challenge to health care systems. The recognition of multimorbidity as a health policy issue can be derived from more general policies, for instance regarding care for patients with chronic diseases or integration of health care services in general.
- Despite numerous initiatives, conclusive evidence on the effectiveness of strategies to improve care for patients with chronic conditions and multimorbidity is scarce. By the absence of evaluation or defective study designs policy makers cannot be provided with guidance on effective models of integrated care.
- The diversity of European health care systems contributes to the complexity of policy and practice concerning care for patients with multiple chronic conditions. Urgent challenges are not similar in each country and solutions that are feasible and effective in one country may not be applicable in another. It seems that possibilities to realize integrated care for people with multimorbidity, are larger in countries with a strong primary care system than in countries with more open health care systems with more free choice for patients.

- As a concept, multimorbidity may lack specificity for policy makers. The mere co-existence of multiple diseases in one patient may not be sufficient ground to assume health system failures. It is likely that such system failures particularly occur for patients with 'difficult' combinations of diseases and in patients living in specific social situations. As it is difficult to identify these patients, it is also difficult to design programmes for this group of patients with multimorbidity. This may contribute to the relative invisibility of multimorbidity in health policy in Europe.
- It may be unclear who is responsible for the organization of integrated care: which institutions at what level (national, regional, local). Also, it may be unclear whether changes should be made bottom-up or top-down.
- Legal or structural barriers or the lack of incentives can make it very difficult to organize integrated care for multimorbid patients.
- The financial situation of countries (for instance in Eastern European countries) may affect the development of reforms, including reforms directed at the care for people with multimorbidity.

Chapter 2. Programmes addressing multimorbidity within European countries

Key-messages

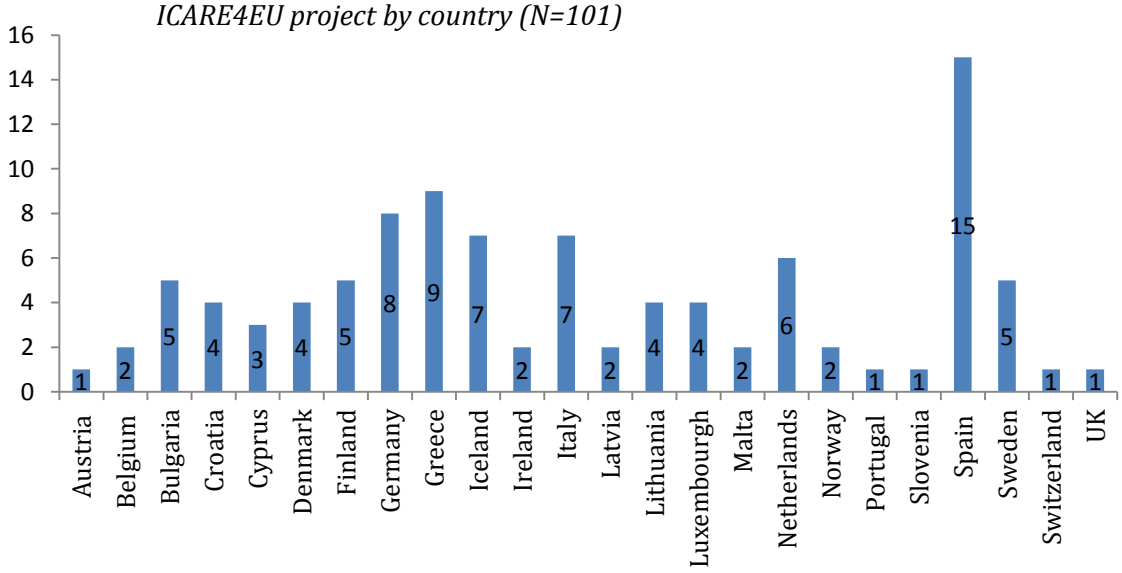
- Innovative approaches to improve care for people with multimorbidity have been introduced in clinical practice in many European countries: country-experts identified 101 practices or programmes, mostly operational at a local or regional level, in 24 European countries.
- Most programmes that had been identified are in Spain (n=15). The number of identified programmes in other European countries varies between one and nine. In some countries no programmes were identified.
- Increasing multi-disciplinary collaboration is the objective most often strived for in the identified programmes. Furthermore, improving patient involvement and improving care coordination are frequently mentioned objectives of the programmes.
- Regarding the types of organizations and care providers involved, primary care practices and general practitioners were most often involved in the programmes.

The development of integrated care is a dynamic process, including the integration of various care organizations, care professions, and health care structures. The lack of a single definition of integrated care and differences in health care systems lead to a broad variety of integrated care initiatives. Integrated care initiatives may for instance be organized on a local level or on a national level; it may include merely the linkage of health care providers/organizations or the integration of care; and it may be directed at specific subgroups of people with multimorbidity or at people with multimorbidity in general. However, little insight exists in the characteristic of actual integrated care practices (programmes) across European countries. This chapter provides information on programmes currently available across Europe, that have been developed to better meet the care needs of people with multimorbidity. An overview will be provided of the status of the integrated care programmes within Europe (e.g. level of implementation), characteristics of the programmes (e.g. main objectives), parties that are involved in the programmes (e.g. care providers and other organisations) and indicators of patient centeredness (e.g. the use of self-management support tools). Older people are especially vulnerable when it comes to multimorbidity. Therefore, the last section of this chapter describes characteristics of integrated care programmes that are specifically directed at older people.

2.1 Identification and selection of current integrated care programmes addressing multimorbidity

Within the ICARE4EU project, integrated care programmes in 31 European countries that address multimorbidity were identified via country-experts. These country-experts were asked to search and report all integrated care programmes within a specific country that focus on multimorbidity. We use the term 'programmes' to refer to initiatives that (aim to) put integrated care for people with multimorbidity into practice. Initially, 178 programmes were embayed by the country-experts. After a final review, 101 programmes met all inclusion criteria and were included in the final database (see Appendix A1 for a description of the inclusion criteria; Appendix B for an overview of the programmes; and online Appendix C for an overview of a selection of programme characteristics per programme). Some of the programmes proved to be more like national strategies and were therefore excluded as a 'clinical practice' programme. For each of these programmes a questionnaire was filled out by the programme managers, which provided insight into the characteristics of the programmes. The findings described in this chapter are based on these questionnaires. Most of the 101 included integrated care programmes were operational in Spain (N=15) and relatively many from Greece (N=9) and Germany (N=8) were included, as illustrated in figure 2.1. No programmes were included from France, Romania, Czech Republic, Hungary, Poland, Slovakia and Estonia. From Austria, Portugal, Slovenia, Switzerland and the UK one programme met the inclusion criteria. The relatively large number of programmes included from Spain, is probably due to the regional governance of health care delivery in Spain. Spain has 17 regions (which are autonomous communities) and health programmes are exclusively provided at a regional level and not at country level.

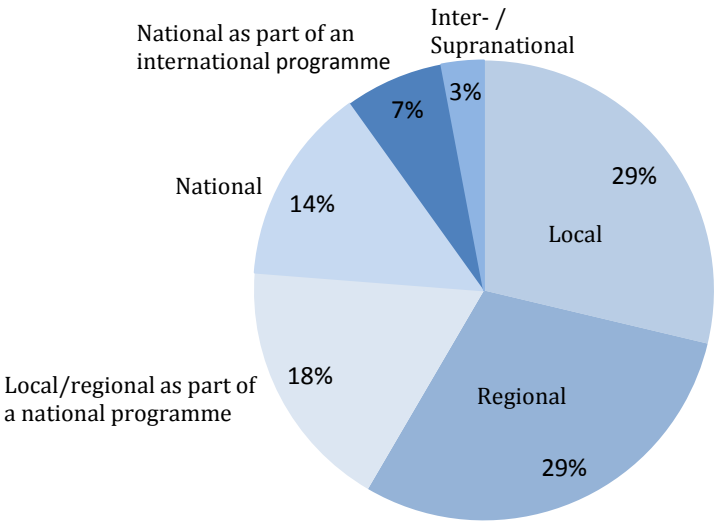
Figure 2.1 *Absolute number of integrated care programmes that were included in the ICARE4EU project by country (N=101)*



2.2 Level of implementation

Of the 101 integrated care programmes that were included in our inventory, 26% were small scale (pilot) projects, 33% were well-established programmes and 42% were fully integrated in the regular health care and/or support system of a country or region. Among these 101 integrated care programmes, 82% were currently running, 16% were finished (not later than two years ago) and 2% had not started yet (but were planned to start in 2015). Furthermore, most of the 101 programmes were implemented at a local (29%) or regional level (30%), and some as part of a national programme (18%), see figure 2.2.

Figure 2.2 *Implementation level of integrated care programmes directed at multimorbidity in % (N=101)*



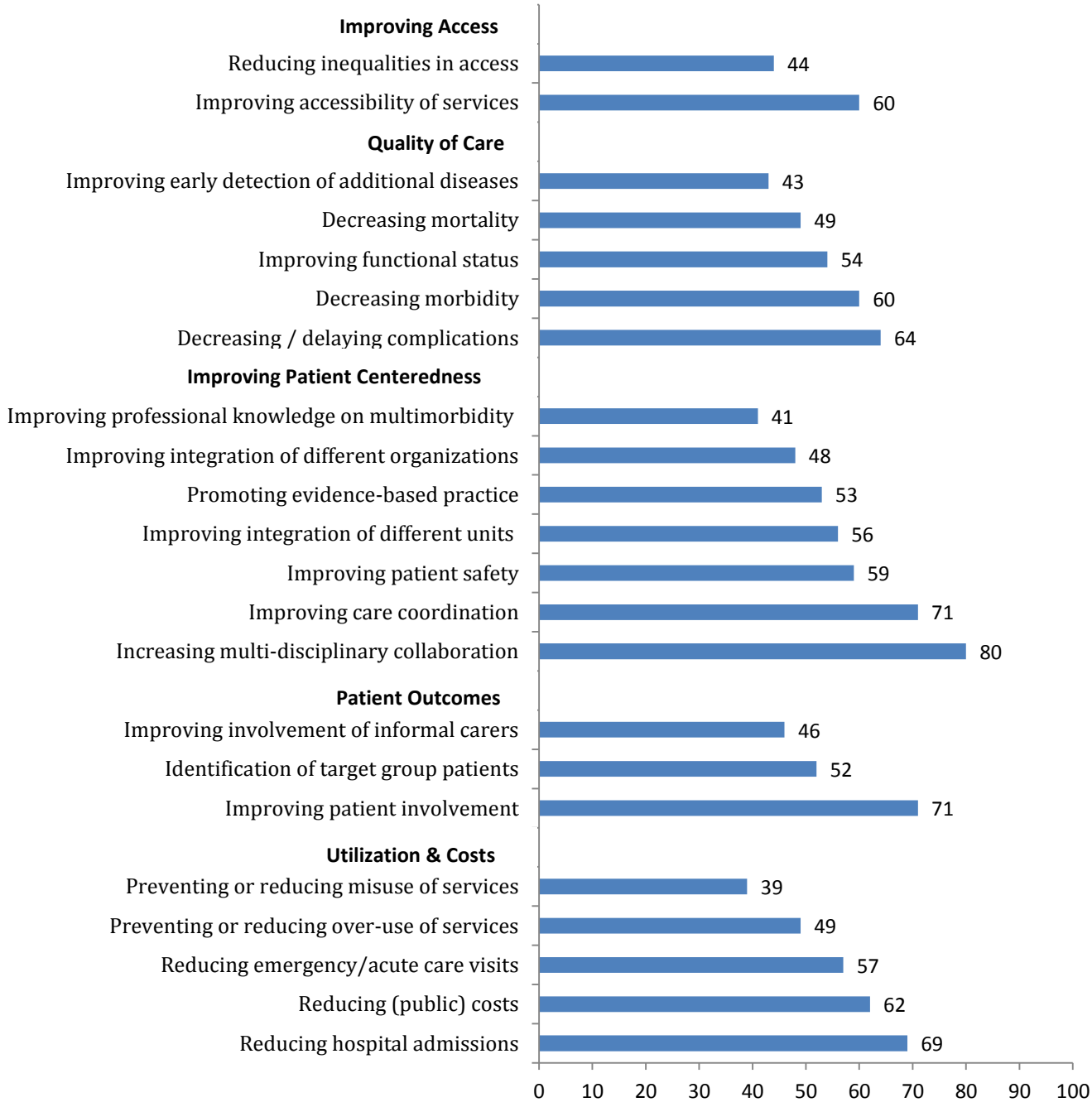
2.3 Characteristics of integrated care programmes directed at multimorbidity

2.3.1 Objectives

In literature it has been mentioned that the primary aim of integrated care is to reduce the fragmentation and costs of care in order to improve clinical outcomes of patients, quality of life, patient satisfaction, effectiveness and efficiency [33]. Figure 2.3 provides an overview of the main objectives of the 101 integrated care programmes. The objectives of these programmes could be divided into the following categories: improving access to care; improving the quality of care; improving patient centeredness; improving patient outcomes; optimization care utilization and costs. Many of the included programmes have several objectives. Most often the increase of the level of multi-disciplinary collaboration

was mentioned as one of the main objectives (in 80% of the programmes). Subsequently, improving patient involvement (in 71%), improving the coordination of care (in 71%) and reducing hospital admissions (in 69%) were listed as main objectives. Regarding the question whether the stated objectives were reached, it was reported that in the majority of the programmes most objectives (55%) or all objectives (27%) were reached. In 6% none of the objectives were reached and in 12% some of the objectives were reached.

Figure 2.3 *Main objectives of integrated care programmes in % (N=101)*



2.3.2 Target groups and multimorbidity orientation

Among the 101 programmes that were included, 93% were targeting patients, 56% medical care providers and 42% informal carers (multiple answers were possible). Fewer programmes targeted non-medical care providers (37%) or management staff (34%). Regarding their multimorbidity orientation, most of the 101 programmes focused on multimorbidity in general (59%) opposed to a combination of specific diagnoses (14%) or a specific diagnosis with a variety of comorbidities (28%).

2.3.3 Cost savings and financing of the programmes

Although integrated care is expected to result in lower health care costs compared to separate delivery of care services, evidence for this is still inconclusive. In the questionnaire, the programme managers were asked whether their integrated care programme resulted in cost savings. The programme managers stated in 45% of the cases that their programme resulted in cost savings. When integrating health care services, it would be expected that their financing differs from the financing of usual care, since financial and legal systems differ in the fields curative and long-term health care and social care or support services. However, 73% of the programme managers stated that the financing of the integrated care programme was the same as for usual care. It may be that the managers referred to the fact that patients do not have to pay more or less for care provided via the integrated care programme than for usual care. Public sources were the most frequent source of funding of the programmes (52%), followed by the statutory health care financing system (47%).

2.4 Stakeholders involved in integrated care programmes

Integrated care refers to the integration of health care processes, which means that care providers, care organizations and organizational structures from multiple disciplines are involved in integrated care programmes. With respect to the type of integration, functional integration, organizational integration, professional integration and clinical integration can be distinguished [46]. Functional integration concerns the macro level of a health care system and may for instance include the mainstreaming of financing. Organizational integration concerns the meso level of health care systems and addresses for instance the integration of health care institutions. Professional integration also concerns the meso level of health care systems and refers for instance to alliances between health care professionals. Clinical integration operates at the micro level of health systems and involves the co-operation in the process of care delivery to patients [46]. Virtual

integration is also mentioned in literature as a type of integration, which refers to the sharing of information electronically between health care providers/organizations [47].

2.4.1 Integration of organizations and disciplines

In most programmes different organizations are involved. The health care organizations that are most frequently involved are primary care practices (70%) and general hospitals (57%) (see Figure 2.4). Insurers are the least often involved in programmes (11%). The initiating organization of the integrated care programme is often a governmental body (in 40% of the programmes), a hospital (in 24%) or a primary care organization (in 34%). The care providers that are most frequently involved in the programmes are general practitioners (81%) and medical specialists (66%) (see Figure 2.5). Community workers are least often involved care providers in the programmes (15%).

Figure 2.4 *Organizations involved in integrated care programmes directed at multimorbidity in % (N=101)*

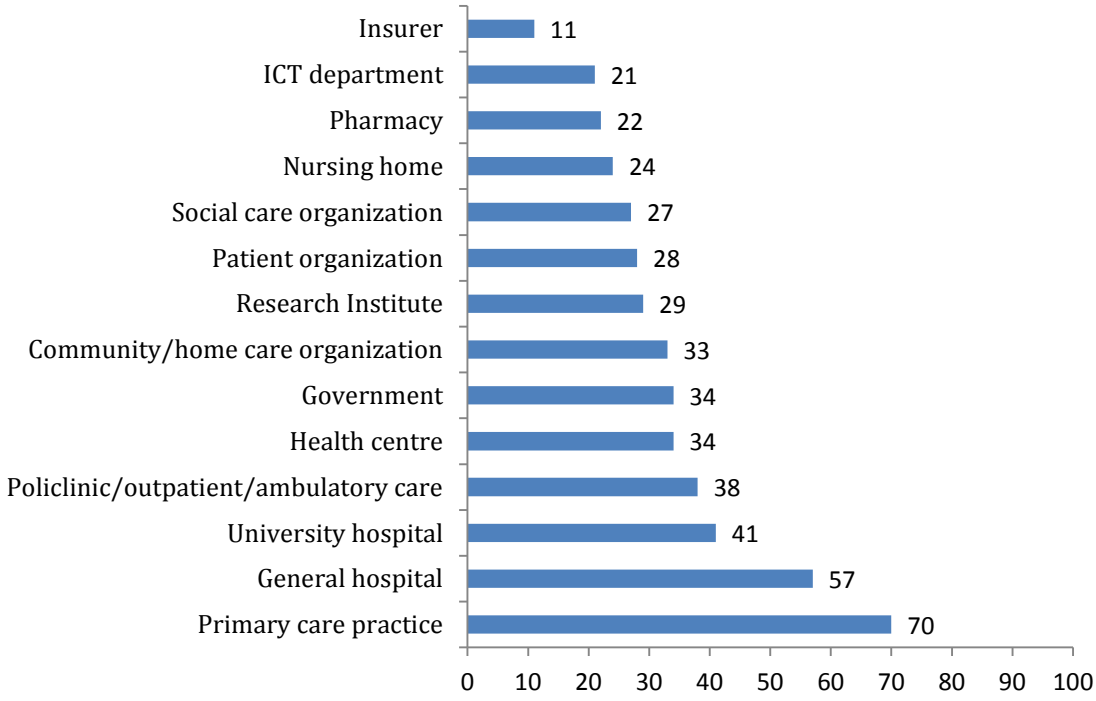
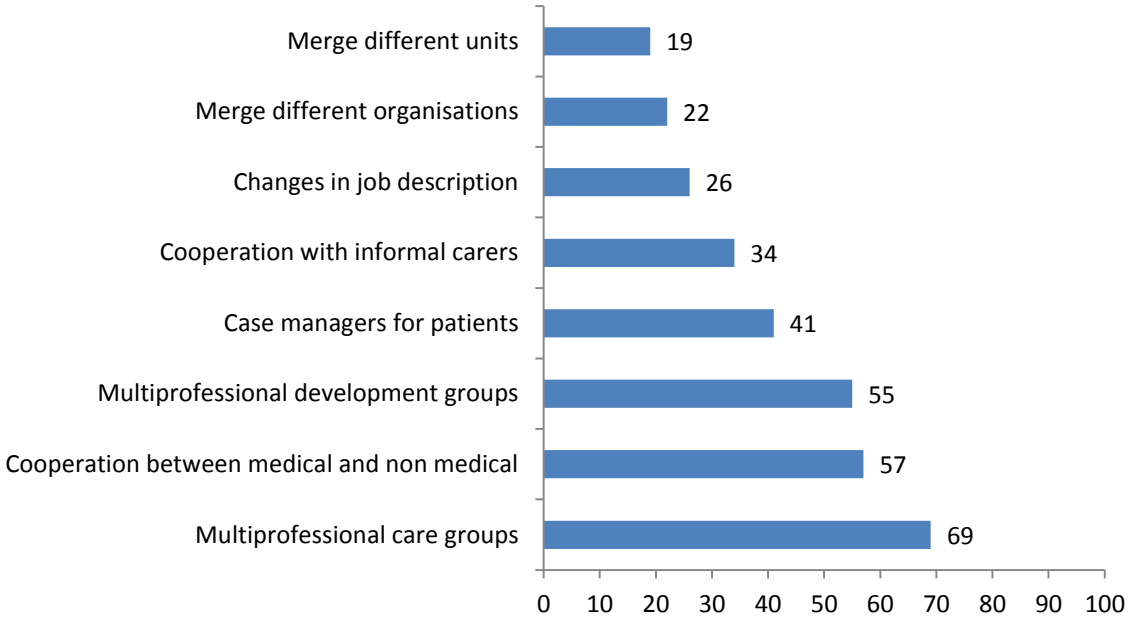


Figure 2.5 *Care providers involved in integrated care programmes directed at multimorbidity in % (N=101)*

2.4.2 Organizational structures established

Among the 101 integrated care programmes included, establishing multi-professional care groups is the most frequently mentioned type of integration (69%) (see Figure 2.6). The merging of different units within organizations and the merging of different organizations are the least frequently mentioned types of integration (respectively 19% and 22%). With respect to virtual integration, in 40% of the programmes information is exchanged between care providers by the use of e-health technologies. In 42% of the programmes electronic patient records are used that are only accessible to the medical care providers involved in the care for the patient. In 35% of the programmes electronic patient records are used and can be accessed by all relevant care providers. Barriers to the use of e-health technologies in integrated care programmes, as reported by the programme managers, are inadequate funding (35%), inadequate ICT infrastructures or support (32%) and a lack of skills of care providers (26%) or patients (30%).

Figure 2.6 *Organizational structures / activities established in integrated care programmes directed at multimorbidity in % (N=101)*



2.5 Patient-centeredness

All integrated care programmes have in common that the primary aim is to improve outcomes for patients. In various European countries a shift is gradually being made from a supply-oriented approach and a dominant professional perspective to the involvement of patients and his or her informal carers in the care and decision-making process. A holistic focus on patients increases the need for interaction between specialists, and generalists and stimulates the implementation of new professions such as practice nurses, nurse practitioners or care coordinators [48].

2.5.1 Involvement of case managers

Integrated care can be defined as care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions [49]. In literature on integrated care, case managers are frequently mentioned as being a key-element of integrated care, especially for patients with multimorbidity. Case managers can serve as the central point of the care delivery: (s)he serves as the contact person for both the patient and his family, and the various health care providers of the patient. As illustrated in Figure 2.6, case managers are part of the integrated care programme in 41% of the programmes.

2.5.2 Involvement of patients in the development of integrated care

In order to fulfill the needs of patients, it is important that their needs are clear during the development of integrated care programmes. It is therefore desirable to involve patients during the development of integrated care programmes. In 49% of the programmes, patients (or their representatives, e.g. family, friends, neighbours, volunteers and/or patient organizations) were involved in the developmental phase of the programme. This involvement varied from informing patients (or their representatives) about the development of the programme (n=30), asking their opinion (n=33), asking their binding advice (n=18), working in a partnership with patients (or their representatives) to develop the programme (n=18), to giving patients a final vote in decision-making during the development of the programme (n=4).

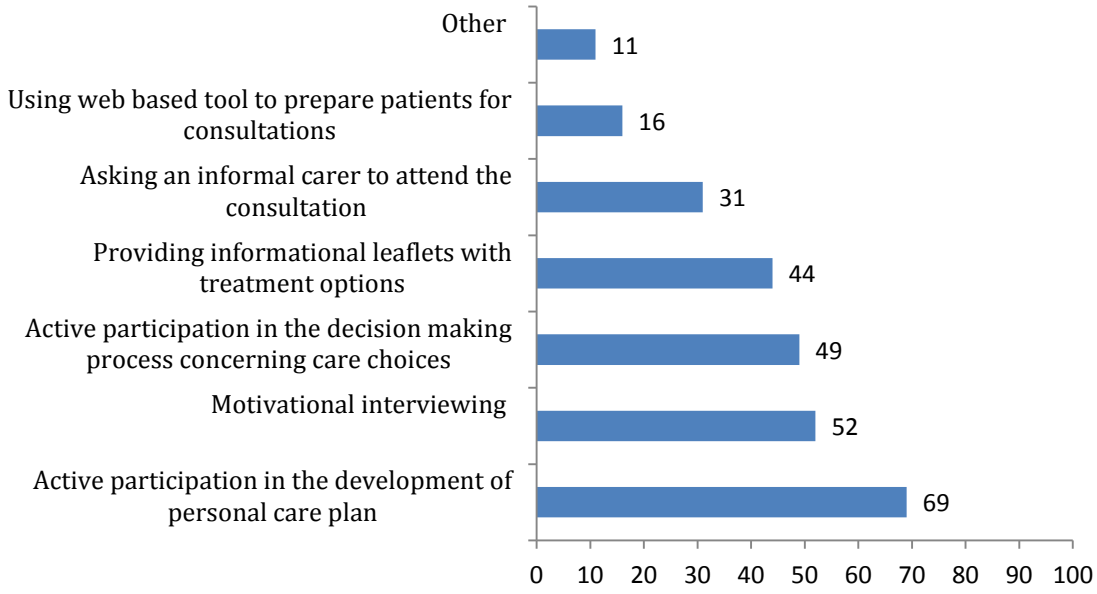
2.5.3 Self-management support by e-health applications

Self-management by patients is seen as a central aspect of integrated and patient-centered care. Various self-management activities are addressed in the integrated care programmes that were included. This includes for instance addressing the lifestyle of patients and making lifestyle changes, but also dealing with the emotional and psychosocial consequences of being ill. Self-management can be supported by e-health applications, which is reflected in the included integrated care programmes: 22% used electronic reminders, mainly for appointments, but in some cases also for medication intake, treatment adherence and to help patients monitor their health status. Furthermore, 21% of the programmes provide computerized self-management facilities, mainly for monitoring, but also for lifestyle/behavioural change and to support shared decision-making. In 25% of the programmes e-health applications were used to exchange information between care providers and patients. We found that 7% of the programmes provide the possibility for patients to have access to their electronic patient record.

2.5.4 Shared decision-making

Patient involvement in decision making concerning the treatment is another important aspect of patient-centered care. In 89% of the included programmes, tools were used to facilitate the involvement of patients in shared decision-making, as listed in Figure 2.7. Active participation in the development of a personal care plan is frequently reported as a way to involve patients in the decision-making process (69%). Web-based tools to prepare patients for consultations are not often used as a tool to support patient involvement in decision-making (16%).

Figure 2.7 *Methodologies or tools that support patient involvement in decision-making that are included in integrated care programmes directed at multimorbidity in % (N=101)*



2.6 Integrated care programmes addressing multimorbidity in older people

Multimorbidity is especially prevalent among older people (aged 65 years or older). The number of older people in European countries in increasing, which makes the need for integrated care programmes especially important among this group. Therefore, we are interested in the characteristics of integrated care programmes that are directed specifically at older people. These programmes will be described in this section.

2.6.1 Multimorbidity in older people

The population in Europe is rapidly ageing, due to increasing life expectancy and declining birth rates. The population aged 65+ in the EU28 is expected to rise from 18.5% in 2014 to 28.1% by 2050, reaching the size of almost 150 million people. The number of very old people (aged 80+) is expected to reach 57.3 million by 2050, from 5.1% of the total population in 2014 to about 6% in 2050. The old-age dependency ratio (65+ related to 15–64) is expected to increase from 27.5% in 2013 to 50% by 2050 [50]. The ageing of the population has large consequences for the utilization of long-term care, especially with regard to the care for people aged 80+. This age group generally has the most severe disabilities, are most likely to suffer from multiple chronic conditions and have the most complex care needs. Chronic diseases in Europe affect approximately 65% of people over the age of 65 and even 85% of people over the age of 85 [2, 5].

2.6.2 Integrated care programmes for older people

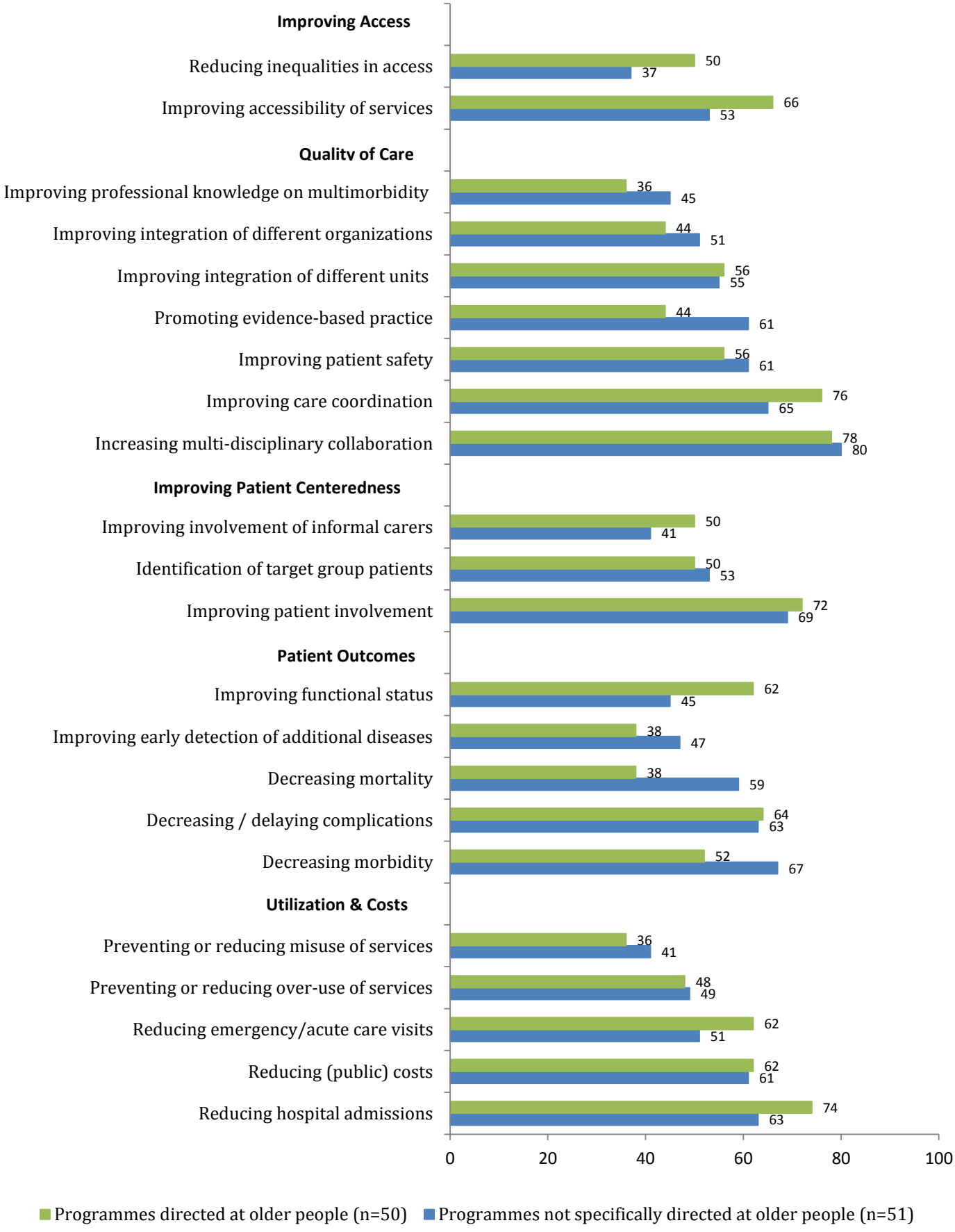
Of the 101 integrated care programmes that were included, 50 specifically targeted frail older people and/or people aged 65+ as a subgroup. In particular, eight programmes targeted only frail older people, eight programmes only those aged 65+, and 34 programmes targeted both subgroups. The other 51 programmes do not specifically target frail/65+ people, but without excluding them. In this section the characteristics of the 50 integrated care programmes specifically targeting frail older people are described and compared with the characteristics of the other 51 programmes.

Programme characteristics

Among the integrated care programmes that were aimed specifically at older people (n=50), relatively more programmes were aimed at multimorbidity than among the programmes that were not specifically directed at older people (74% versus 43%). Furthermore, certain target groups and objectives were more often addressed in the integrated care programmes directed specifically at older people than in the other programmes. Also, informal carers were more frequently mentioned as a target group (52% versus 31%), as well as non-medical care providers (44% versus 29%) and the management of care organizations (38% versus 29%).

As to the programme objectives (see Figure 2.8), reducing inequalities in access to care and improving the accessibility of services are more often objectives in programmes directed at older people than in the other programmes (50% versus 37%, and 66% versus 53% respectively). Furthermore, improving care coordination (76% versus 65%) and improving the involvement of informal carers (50% versus 41%) are more often objectives in programmes directed at older people. With respect to patient outcomes, the improvement of functional health status is more often an important objective among programmes directed at older people compared to the other programmes (62% versus 45%). Reducing acute care visits and hospital admissions are also more often addressed in programmes directed at older people (62% versus 51% and 74% versus 63% respectively). Promoting evidence-based practice (44% versus 61%), decreasing mortality (38% versus 59%) and decreasing morbidity (52% versus 67%) are on the other hand less often listed as an objective of programmes specifically directed at older people compared to the other programmes.

Figure 2.8 *Main objectives of integrated care programmes directed at older people compared to programmes in general in % (N=50, N=51 respectively)*



Stakeholders involved in integrated care programmes aimed at older people

Besides parties that are involved in integrated care programmes in general, some parties are especially expected to be involved in integrated care programmes directed at older people. This includes several care providers such as nursing homes, home care providers and informal carers.

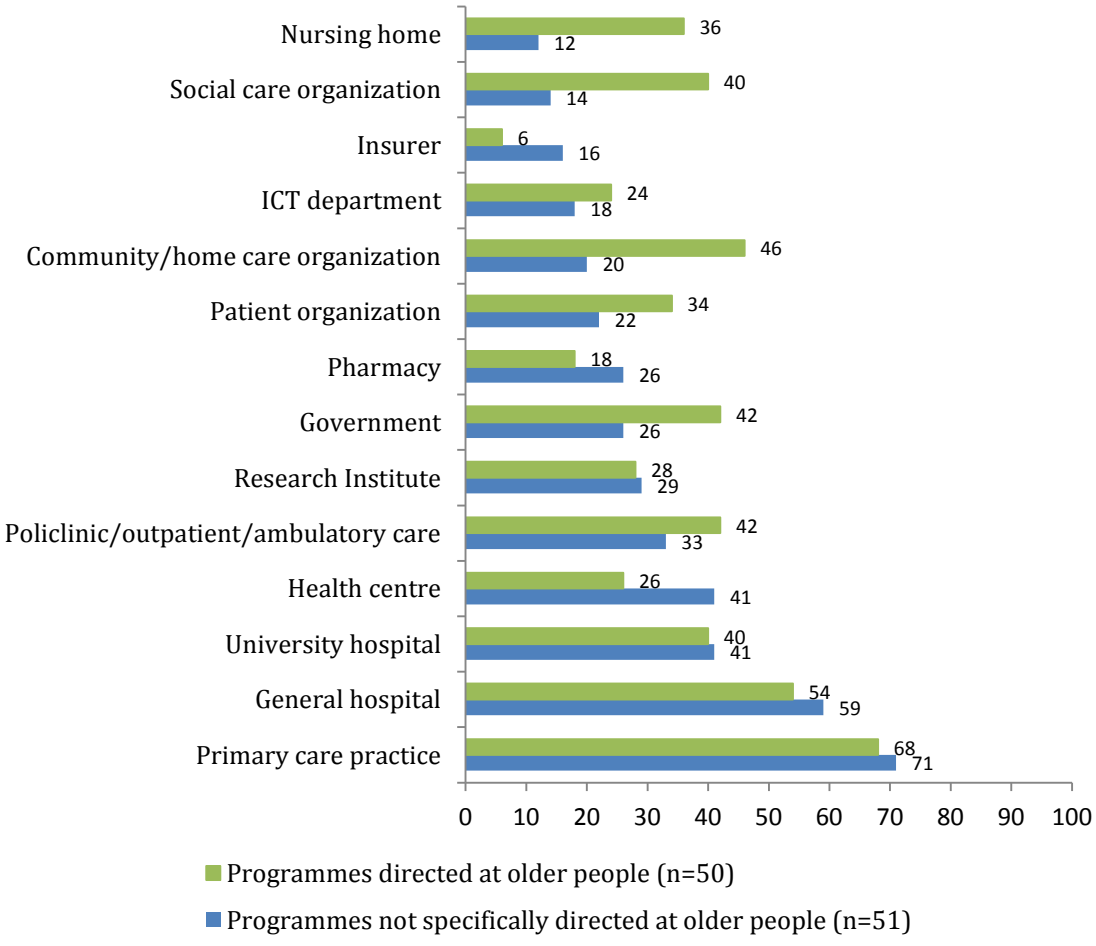
In most European countries, people in late life prefer to receive health care and social care (i.e. medical visits, nursing care, support for bathing, dressing, eating, cleaning the house, meals-on-wheels) in their homes, rather than in long-term care institutions such as nursing homes. It should be underlined that the provision of both home and residential care is different among European countries [51]. Nevertheless, home-care solutions are considered more cost efficient than residential care and home-care provision is available in all European countries [52]. In this respect, home nursing, as an alternative to inpatient admission, is seen as a cheaper alternative and it allows people to remain in their home. On the whole, integration of home care (home helps, social workers) and home nursing are crucial conditions for optimal services. Also the coordination of home care and residential care would be A source of benefits for the elderly, but this is generally weak across Europe, whereas examples of coordination between home health care and hospital care (e.g. in case of hospital discharge) and integration of home care and hospital care can be found in several countries [52].

Moreover, for older patients it is important to involve informal carers, such as family, friends, and other significant persons in (decision about) their care. Currently, especially in Southern European countries, informal caregivers – family and friends – are the most important providers of care. Analyses of SHARE data for 13 European countries revealed that informal family carers (and sometimes also friends) play a key role in all 13 countries, with more than 80% of the elderly receiving care only from the family, whereas a lower 20% are supported by formal care services [51]. In particular, from the second European Quality of Life Survey we know that in the EU27, 3% of people report to care for an older/disabled relative many times a week, 4% takes care once/twice a week and 8% less than once a week [53]. For the elderly, informal care providers are therefore very important, and coordination among health care professionals and informal carers seems fundamental [54]. Also private household helps often relive families from caregiving by performing various tasks. This type of support has become a “structural” element of elder care provision in Mediterranean countries, and it is also becoming a growing reality in Central and Northern European countries [55].

Finally, for older persons with multimorbidity and facing the "challenge of navigating through multiple different services" [56], integrated care involves a case manager who is responsible for co-ordinating care delivery across multiple providers (including informal carers) and for sharing information with the primary care provider (e.g. physician, GP) about changes in health status and care [31]. In Europe, whenever one professional is responsible for the coordination of care, it is indeed usually a GP, a social worker, or a nurse [52].

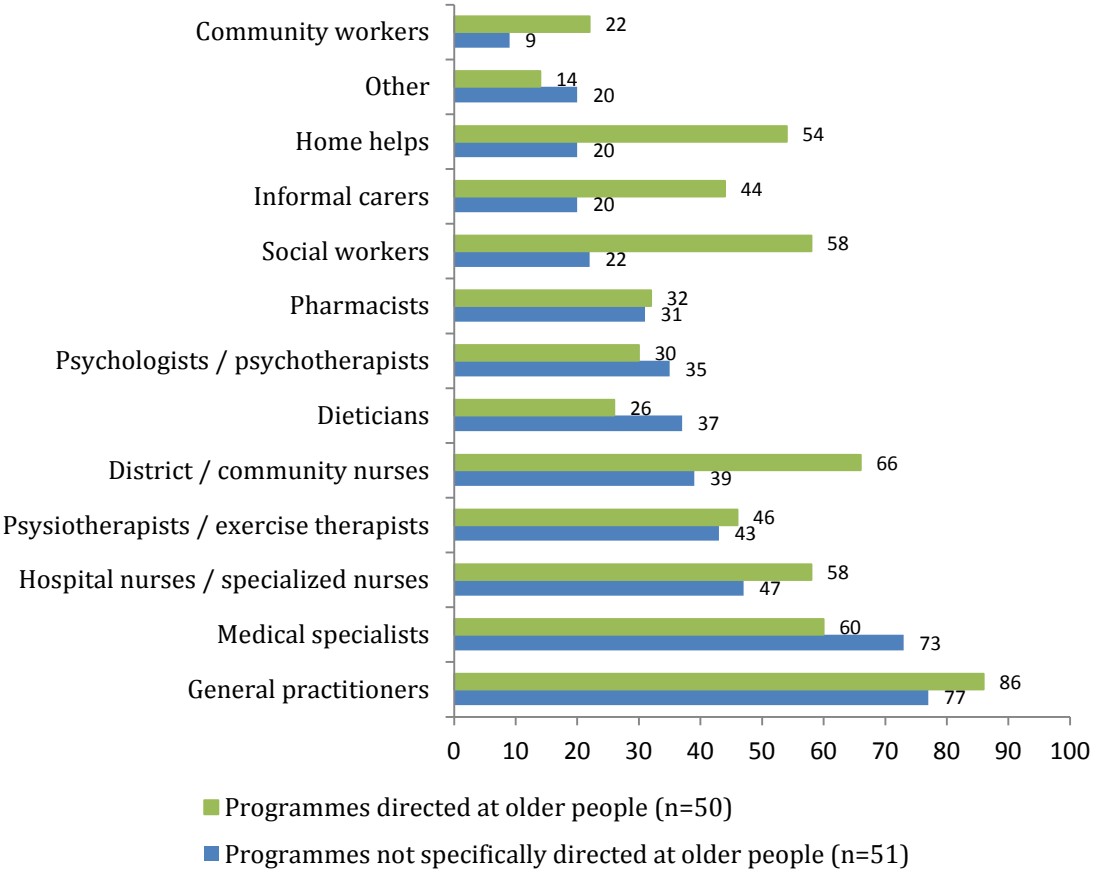
Figure 2.9 illustrates that a number of health care organizations are more often involved in programmes directed at older people (n=50) compared to programmes not specifically directed at older people (n=51): community/home care organizations (46% versus 20%), social care organizations (40% versus 14%) and nursing homes (36% versus 12%). Health centers are on the other hand less frequently involved in programmes directed at older people compared to the other programmes (26% versus 41%).

Figure 2.9 *Organizations involved in integrated care programmes directed specifically at frail elderly and/or people aged >65 compared to programmes not specifically directed at older people in % (N=50, N=51 respectively)*



With respect to the health care providers that were involved, general practitioners were the professionals most often involved in programmes directed at older people (86%), see Figure 2.10. Compared to the other programmes, a number of care providers were more frequently involved in programmes specifically directed at older people: district nurses (66% versus 39%), social workers (58% versus 22%), home helps (54% versus 20%), informal carers (44% versus 20%) and community workers (22% versus 9%). Medical specialists were less often involved (60% versus 73%) as well as dieticians (26% versus 37%).

Figure 2.10 *Care providers involved in integrated care programmes directed specifically at frail elderly and/or people aged >65 compared to programmes not specifically directed at older people in % (N=50, N=51, respectively)*



With respect to the integration of care, the implementation of multi-professional care groups were the most frequently mentioned form of integration (70%) among the programmes directed at older people. The establishment of collaboration with informal carers was reported only in 40% of the programmes directed at older people.

Chapter 3. Profiling integrated care programmes addressing multimorbidity

Key-messages

- Based on a cluster analysis of the survey data, two general types of programmes could be distinguished: more confined programmes and more comprehensive programmes. Whether a programme could be considered a more confined or more comprehensive one depends on its number of objectives, the aspects of multimorbidity care that were addressed, the number of care disciplines and sectors involved, and established organizational structures.
- Most of the 101 programmes could be considered as 'confined'; they focus for instance on patients who have been diagnosed with a combination of two or three predefined chronic diseases, or they address a specific part of the needs of multimorbid patients (e.g. medical care), or have established a limited level of integration of care by specific organizations or disciplines.
- Elements that are theoretically needed for a successful implementation of integrated care programmes, according to the Development Model for Integrated Care, are to a large extent met by the selected programmes, although the implementation methods vary between programmes.

In this chapter we aim to explore whether a typology of integrated care programmes can be made based on the data collected by the programme specific questionnaire. In order to come to a possible typology of integrated care programmes, two approaches were applied. Firstly, a cluster analysis was conducted based on a selection of programme characteristics (data driven approach). Secondly, it was explored to what extent the programmes cover elements of a recently developed theoretical model of integrated care, the Development Model for Integrated Care (DMIC) (theory driven approach) [35]. Both approaches were applied in order to interpret our findings from different angles. Details on the procedure of the cluster analysis and on the procedure of interpreting the integrated care programmes in light of the DMIC are described respectively in Appendix A2 and A3. In section 3.1 the programme characteristics will be described per programme type (cluster), according to the results of the cluster analysis. This includes a description of how characteristics of the 'challenge' of multimorbidity, such as relatively many older people in a population, and characteristics of the health care system relate to the programme typology. In section 3.2, programme characteristics will be described in light of the DMIC model.

3.1 Typology of integrated care programmes

As a result of the cluster analysis, two clusters of integrated care programmes directed at multimorbidity could be distinguished, which were labeled 'comprehensive programmes' (n=33) and 'confined programmes' (n=68).

3.1.1 Objectives, target group and multimorbidity orientation

The comprehensive programmes have formulated more objectives and target groups, as illustrated in Table 3.1. The objective 'preventing or reducing misuse of services' is the least often addressed objective among the confined programmes; 'improving professional knowledge on multimorbidity' is the least often addressed among the comprehensive programmes. Among both the comprehensive and the confined programmes, increasing multi-disciplinary collaboration is (one of) the most frequently mentioned objective. With respect to the target group of the programmes, both the comprehensive programmes and the confined programmes are most often directed at patients and least often at the management of care organizations (see Table 3.1). Furthermore, the multimorbidity orientation is remarkably different between the comprehensive and the confined programmes. The comprehensive programmes are more likely to address multimorbidity in general, whereas the confined programmes are more likely to address specific (combinations of) diseases (see Table 3.1). These findings suggest that the comprehensive programmes are indeed more extensive in giving shape to integrated care for people with multimorbidity than the confined programmes.

Table 3.1 *Objectives, target group and multimorbidity orientation of programmes by programme type (percentages)*

Programme characteristics	Scoring "yes" per programme type	
	Comprehensive programmes (n=33)	Confined programmes (n=68)
	%	%
Objectives		
Improving access		
Reducing inequalities in access	70	31
Improving accessibility of services	85	47
Quality of Care		
Promoting evidence-based practice	58	50
Improving professional knowledge on multimorbidity	52	35
Improving care coordination	91	60
Improving integration of different units	82	43
Improving integration of different organizations	79	32
Increasing multi-disciplinary collaboration	91	74
Improving patient safety	85	46
Improving patient centeredness		
Identification of target group patients	73	41
Improving patient involvement	91	46
Improving involvement of informal carers	61	38
Patient Outcomes		
Improving early detection of additional diseases	61	34
Improving functional status	70	46
Decreasing / delaying complications	79	56
Decreasing morbidity	64	57
Decreasing mortality	55	46
Utilization & Costs		
Preventing or reducing over-use of services	79	34
Preventing or reducing misuse of services	64	27
Reducing hospital admissions	88	59
Reducing emergency/acute care visits	85	43
Reducing (public) costs	79	53
Target group		
Patients	100	90
Informal carers	55	35
Medical care providers	70	50
Non-medical care providers	55	28
Management	52	25
Multimorbidity orientation		
Multimorbidity in general	76	50
A combination of specific diagnoses	24	50

3.1.2 Health care providers and organizations involved

Table 3.2 presents indicators of the level of integration per programme type: involved health care providers and involved organizations. The percentages presented in this table indicate that all types of health care providers and organizations are relatively more often

involved in the comprehensive programmes than in the confined programmes. In the comprehensive programmes general practitioners are most often involved followed by specialized nurses. Furthermore, the comprehensive programmes most often involve seven different health care providers and ten different organizations. In the confined programmes, general practitioners are also most often involved, followed by medical specialists. The confined programmes most often involve three different health care providers and one organization.

Table 3.2 *Involvement of health care providers and organizations per programme type; number of programmes (percentages)*

Programme characteristics	Scoring "yes" per programme type	
	Comprehensive programmes (n=33) %	Confined programmes (n=68) %
Health care providers involved		
Number of providers: median / modus	8 / 7	4 / 3
General practitioners	97	74
Medical specialists	76	62
Informal carers	64	16
Home helps	67	22
Social workers	64	28
Community workers	39	3
District/community nurses	76	41
Hospital/specialized nurses	85	37
Pharmacists	56	19
Physiotherapists/exercise therapists	67	34
Dieticians	64	16
Psychologists/psychotherapists	49	25
Organizations involved		
Number of organizations: median / modus	8 / 10	3 / 1
University hospital	64	29
General hospital	73	49
Primary care practice	91	59
Health center	39	31
Nursing home	49	12
Policlinic/outpatient/ambulatory care	61	27
Patient organization	58	13
Social care organization	61	10
Community/home care organization	64	18
Pharmacy	46	10
Insurer	12	10
ICT department	42	10
Research institute	42	22
Government	64	19

3.1.3 Organizational structures established

All of the organizational structures, as listed in Table 3.3, are more often established in the comprehensive programmes than in the confined programmes. Among both the comprehensive programmes and the confined programmes, multiprofessional care groups, multiprofessional development groups and the cooperation between medical and non-medical care providers have relatively often been established as part of the programmes (see Table 3.3). The merging of organizations and units were the least often established among the comprehensive programmes and changes in job description was the least often established among the confined programmes.

Table 3.3 *Organizational structures involved per programme type (percentages)*

Programme characteristics	Scoring "yes" per programme type	
	Comprehensive programmes (n=33) %	Confined programmes (n=68) %
Organizational structures		
Merges between organizations	33	16
Merges within units	33	12
Multiprofessional care groups	91	57
Multiprofessional development groups	94	35
Cooperation between medical and non-medical	85	43
Cooperation with informal carers	67	18
Case managers for patients	76	24
Changes in job description	61	9

3.1.4 Aspects of a chronic illness trajectory addressed

With respect to the aspects of a chronic illness trajectory that are addressed in the programmes, the percentages in Table 3.4 indicate that almost all aspects are relatively more frequently included in the comprehensive programmes than in the confined programmes. Diagnostics is the only exception (46% versus 52%). This suggests that comprehensive care programmes more often cover the whole range of prevention, curative care and long-term care related to a chronic illness trajectory. Within the comprehensive programmes, nursing care is most frequently included, followed by lifestyle and health behaviour. Regarding the confined programmes, (changes in) medical care are most often addressed, followed by medical treatment interventions. The comprehensive programmes most often encompass 13 different aspects of integrated care, whereas confined programmes most often address eight different aspects. Furthermore, coordination of medical services and cooperation between medical care

providers are more often included in the comprehensive programmes than in the confined programmes (see Table 3.4).

Table 3.4 *Multimorbidity orientation and aspects addressed per programme type (percentages)*

Programme characteristics	Scoring "yes" per programme type	
	Comprehensive programmes (n=33) %	Confined programmes (n=68) %
Aspects addressed		
Number of aspects: median / modus	13 / 12	8 / 13
Lifestyle and health behavior	88	50
Early detection of new comorbidities	67	32
Prevention/delay of deterioration	85	56
Prevention/reduction of functional disability	70	46
Diagnostics	46	52
Medical care	79	74
Nursing care	94	52
Social care	76	27
Co-care providers	49	16
Co-care patients	42	4
Home care	82	34
Medical treatment interventions	73	57
Non-medical treatment interventions	64	41
Adherence to medication	82	54
Adherence to interventions	70	35
Care after discharge	64	35
Rehabilitation and reintegration	73	38
Monitoring	76	49
Management of multiple medication	70	32
Coordination of medical services	85	47
Cooperation between medical care providers	64	44

3.1.5 Country characteristics related to programme type

Characteristics of health care systems

Table 3.5 provides an overview of how the two programme types are distributed across countries with specific health care system characteristics. Comprehensive programmes are the least often found in countries with weak primary care systems and the most often in countries with strong primary care systems. Confined programmes are almost equally distributed across countries with strong and weak primary care systems [57]. Furthermore, comprehensive programmes are most frequently found in countries with a

decentralized health care system, whereas confined programmes are almost equally distributed across countries with centralized and decentralized health care systems.

Table 3.5 *Distribution of programmes by health care system characteristics and by type of programme (percentages)*

Health care system characteristics[a]	Comprehensive programmes (n=33) %	Confined programmes (n=68) %
Countries with a strong primary care system[b]	52	31
Countries with a medium primary care system[b]	27	24
Countries with a weak primary care system[b]	15	34
Countries with decentralized systems[c]	73	49
Countries with centralized systems[c]	24	51

[a] Because we did not have information on health care system characteristics from all of the countries in which integrated care programmes were identified, the percentages do not add up to 100%.
[b] Determined in 2009/2010, based on [57]
[c] Based on information from Health Systems in Transition (HiTs) profiles [58]

Characteristics of the population

As indicated, of the 101 integrated care programmes included in the present inventory, 50 programmes were aimed specifically at (frail) older people. These programmes could more often be typified as confined (n=29) than comprehensive (n=21). In Table 3.6 the relationship between the typology of programmes and indicators for the prevalence of multimorbidity are presented. Among the comprehensive programmes, relatively many are implemented in countries with a relatively high rate of people aged 65 or older and 80 or older compared to the confined programmes. Thus, the comprehensive programmes address relatively often (frail) older people and are relatively often implemented in countries with many older people. The percentages of programmes available in countries with relatively many deaths caused by ischaemic heart disease, cerebrovascular disease or respiratory disease show no large differences between the two types of programmes. However, comprehensive programmes seem relatively less often available in countries with many deaths by lung or colorectal cancer, compared to confined programmes.

Table 3.6 *Relation between type of programme and indicators for a higher prevalence of multimorbidity*

Country level indicators	% of programmes implemented in countries characterized by the respective country level indicators	
	Comprehensive programmes (n=33) %	Confined programmes (n=68) %
> 17.0% of the population aged 65 or older [a]	76	59
> 4.5% of the population aged 80 or older[b]	73	53
> 832 deaths per 100.000 65+ by ischaemic heart disease[c]	15	18
> 508 deaths per 100.000 65+ by cerebrovascular disease[c]	15	18
> 318 deaths per 100.000 65+ by respiratory disease[c]	48	43
> 200 deaths per 100.000 65+ by lung cancer[c]	21	44
> 132 deaths per 100.000 65+ by colorectal cancer[c]	24	32

[a] Mean = 17.1% in 2013 based on Eurostat
[b] Mean = 4.5% in 2013 based on Eurostat
[c] Mean = respectively 832 / 508 / 318 / 200 / 132 per 100.000 65+ inhabitants in 2009 based on Eurostat

3.2 Integrated care programmes in light of the Development Model for Integrated Care

In section 3.1 a typology of the 101 identified integrated care programmes was established, based on a selection of programme characteristics. Another approach to profiling these integrated care programmes, is to compare their characteristics with theoretical models of integrated care. A recently developed and validated model of integrated care is the Development Model for Integrated care (DMIC) [35]. This model includes nine groups of activities that are considered relevant for the realization of integrated care: patient-centeredness; delivery system; performance management; quality of care; result-focused learning; inter-professional teamwork; roles and tasks; commitment to the integrated care; transparent entrepreneurship. Since the DMIC model is especially developed to organize and evaluate integrated care initiatives, it is well suited to serve as a basis for profiling the care programmes.

Based on the collected data about the care programmes, we created sets of programme characteristics comparable to eight of the nine DMIC groups, which were labelled 'integrated care elements' (see Box 3.1). The DMIC group 'result-focused learning' was not part of the created integrated care elements, because we did not have data that provided information concerning this particular group. As described in Box 3.1, the integrated care elements contain various aspects. This section will furthermore describe the scores of the 101 programmes on these integrated care elements (i.e., the extent to which the various

aspects of the elements are met) and their overall scores. The scores were based on information from the questionnaires that were filled out by the programme managers. Details on the scoring of the programmes and the variables that were used to calculate the scores per integrated care element are provided in Appendix A3. The results must be interpreted with caution, since the information on the identified programmes was obtained from self-reported questionnaires and might not be all-embracing.

Box 3.1 Description of the integrated care elements based on the DMIC model

Element 1. Patient-centeredness

Patient-centeredness is the development of integrated care and information flows tailored to specific (sub)groups of patients. Elements focus for instance on supporting integrated information provision via front offices, self-management support or information systems, and delivering care adjusted to individual needs [33].

Element 2. Delivery system

Chain and client logistics, coordination mechanisms and procedures for streamlining the care process for the whole care chain is the main focus of this element; reaching all agreements (e.g. logistics, sharing expertise), procedures (e.g. information exchange) or tools (e.g. care plans) in the care chain that are necessary from the client's initial entry into the care chain until the final contact are reflected in this group [33].

Element 3. Performance management

Measurement and analyses of the results of the care delivered in the care chain is the central theme of this element. This includes performance targets at all levels, monitored by the standardized use of indicators. Indicators address client outcomes, client judgments, organizational outcomes and financial performance data. (Near) mistake analysis, feedback mechanisms and improvement teams are used to improve and manage the level of performance [33].

Element 4. Quality of professional care

This element is directed at the design of a multidisciplinary care pathway throughout the care chain, based on evidence-based guidelines and standards and clients' needs and preferences. A needs assessment of the specific client group is required for this purpose, combined with the involvement of client representatives in designing, improving and monitoring the integrated care [33].

Element 5. Inter-professional teamwork

This element involves inter-professional teamwork for a well-described client group. The defined client group is the target to be reached by collaborating professionals, working in well-organized

multidisciplinary teams in the care chain [33].

Element 6. Roles and tasks

The need for clarity about each other's expertise, roles and tasks in the care chain is reflected by this element [33]. Effective collaboration at all levels, with new partners and by allocating coordinating roles are the main components.

Element 7. Commitment to integrated care

The focus of commitment to integrated care is on collaborative commitment and ambition in the care chain. Commitment towards clearly defined goals and a collaborative ambition, apart from awareness of dependencies and domains. The commitment of leaders to the care chain and the awareness of working in a care chain are also components [33].

Element 8. Transparent entrepreneurship

Transparent entrepreneurship concentrates on room for innovation (experiments), leadership responsibilities for performance achievement and joint financial agreements covering the integrated care [33].

3.2.1 Scores on the integrated care elements

Each programme received a score ranging from 0 to 10 on each of the integrated care elements. A score of 0 indicates that a programme does not address the particular integrated care element at all. The higher the score, the more aspects of a particular integrated care element are addressed. Table 3.7 presents the scores per integrated care element, the percentages of programmes scoring at least seven and the percentages of programmes scoring five or lower, which provides insight in the distribution of the scores. The results imply that aspects of the integrated care element 'room for innovation and change' are the least often addressed by the programmes (score = 2.3). Aspects of the integrated care element 'roles and tasks' seem to be most often addressed (score = 7.4). Regarding the latter aspect, 74.3% of the programmes scored at least seven, where this was the case in 15.9% of the aspect 'room for innovation and change' on which 84.1% of the programmes scored five or lower.

Table 3.7 *Scores of integrated care programmes for people with multimorbidity (N=101) per integrated care element according to the DMIC model*

Integrated care elements	Score (range 0 – 10)	Median	% of programmes scoring ≥ 7	% of programmes scoring ≤ 5
Patient-centeredness	5.0	5.0	23.8	60.4
Delivery system	5.4	6.3	32.6	49.5
Performance management	3.8	3.6	19.0	68.3
Quality of professional care	4.5	5.0	29.7	70.3
Inter-professional teamwork	5.5	5.0	48.5	51.5
Roles and tasks	7.4	10.0	74.3	25.7
Commitment to integrated care	6.7	6.7	66.3	33.6
Room for innovation and change	2.3	3.3	15.9	84.1

The mean score of all eight integrated care elements was 40.6 (SD:11.3; range 0 – 80). Table 3.8 provides information on the scores of the programmes on the integrated care elements combined. It shows that 48.5% of the programmes obtained a score higher than 40 and merely 4% of the programmes scored higher than 60, which implies that hardly any of the integrated multimorbidity programmes addresses all aspects of the integrated care elements.

Table 3.8 *Sum scores of integrated care programmes for people with multimorbidity on all integrated care elements according to the DMIC model*

Programme characteristics	% of the programmes (n=101)
Programmes with an overall mean score:	
Higher than 40 (range 0 – 80)[a]	48.5
Higher than 60 (range 0 – 80)[a]	4.0
Programmes scoring higher than the median on:	
Aall 8 integrated care elements	0.0
7 out of 8 integrated care elements	1.0
6 out of 8 integrated care elements	7.9
5 out of 8 integrated care elements	13.9
4 out of 8 integrated care elements	16.8
3 out of 8 integrated care elements	27.7
2 out of 8 integrated care elements	19.8
1 out of 8 integrated care elements	10.9
0 out of 8 integrated care elements	2.0
Number of integrated care elements addressed:	
5 integrated care elements	5.0
6 integrated care elements	17.8
7 integrated care elements	42.6
8 integrated care elements	34.7

[a] Range based on summing up the scores on the eight integrated care elements on a range from 0 – 10.

This is underlined by the finding that none of the programmes scored higher than the median score on all of the integrated care elements. Most programmes scored higher than the median score on three out of the eight integrated care elements (27.7%). One programme scored higher than the median score on seven out of the eight integrated care elements (1.0%), therefore this programme could be considered highly comprehensive, since it addresses seven elements that are considered essential for the effectiveness of integrated care in a relatively extended way (i.e., the scores on seven elements are all above the median score). This programme was aimed at ensuring continuity of nursing care between care settings. Eight programmes scored higher than the median score on six out of the eight integrated care element (7.9%). This included for instance a programme that was directed at classifying people with chronic diseases into levels of risk and adapting care services to these levels of risk. Another example is a programme that aims to integrate social and nursing care in the patient's home environment, in order to enable patients to be independent.

As to the number of integrated care elements that were addressed by the programmes, most of the programmes address seven of the eight integrated care elements (42.6%) or all elements (34.7%). This implies that elements that are theoretically needed for a successful implementation of integrated care programmes are to a large extent met although the exact way in which this is done may differ between programmes.

Chapter 4. Methodological considerations and implications

4.1 Methodological considerations

This report describes the state-of-art regarding the implementation of novel approaches and strategies to provide integrated care for people with multimorbidity in European countries. The state-of-the-art described in this report was based on a survey among country-experts of 31 European countries, followed by a survey among the managers/contact persons of 101 'clinical practice' programmes in these countries. Although many efforts were undertaken to identify such programmes, strategies and policies within the countries, the results of this inventory should be interpreted with caution. Although we identified 101 relevant integrated care programmes in this way, we do not pretend to have a complete overview of all programmes that have been implemented in Europe. First, for our overview we were dependent on the willingness of country-experts and programme managers to participate in the surveys. We managed to contract a country-expert in each of the 31 countries we intended to include, and in general the country-experts put a lot of effort in identifying relevant programmes and providing information about relevant national or regional policies. However, given that a lot of information is not available at a national level in several countries, it may have not always been possible to collect all relevant information. Moreover, we applied strict inclusion criteria, when reviewing the programmes of which we received survey data (see Appendix A1 for the inclusion criteria). For instance, a programme was only included when it consisted of an integration of care or support services.

With respect to the profiling of integrate care programmes for people with multimorbidity, we clustered the care programmes on the basis of a selection of programme characteristics. This resulted in two types of programmes. When interpreting the results, it is important to consider that basing the cluster analysis on other programme characteristics, this could have resulted in a different typology. Furthermore, the DMIC model was chosen as a theoretical framework to interpret the included programmes. Although this is a comprehensive model that was useful for the interpretation of our findings, future insights into important elements of integrated care or the use of a different model might lead to other conclusions concerning the extent to which the identified programmes can be considered integrated care programmes. For instance, the DMIC model provides little attention to how various health care providers could provide care and cooperate to meet the values and goals of patients ('goal orientated approach'). The

DMIC model is more directed to organizational/structural preconditions for the delivery of integrated care. Furthermore, we could not interpret all programmes in light of the 'challenge' of the European country in which they had been implemented, due to the fact that for some countries we did not have access to information on, for instance, the prevalence of multimorbidity or the age distribution of the population. For the current inventory, the characteristics of an included programme were assessed by a questionnaire that was filled out by the manager or a contact person of the programme. Therefore, we could only reflect on the programmes based on insights from the perspective of the manager of the programme. However, since the main purpose of integrated care programmes targeting people with multimorbidity is to improve the care for these people, it seems important to additionally take the patients' perspective into account in future inventories.

Another consideration for future inventories, is to incorporate the complexity of the health care needs of patients to explore to what extent integrated care programmes are effective. It is imaginable that certain integrated care programmes are effective and satisfactory for people with multimorbidity who do not have very complex or high needs, but may be inadequate for delivering effective and satisfying care for people with more complex or more comprehensive needs. More insight into what elements of integrated care are important in what situation in terms of the complexity of the care needs/severity of patients' conditions, but also in terms of the personal characteristics and social resources of patients seem valuable for the development of high-quality integrated care for multimorbid patients.

4.2 Implications

Since there is no template for the most efficient and satisfactory way of providing integrated care for people with multimorbidity, room for experimental initiatives is needed as well as inspired and motivated (health) care providers and organizations that are willing to join forces. Providing room for experimental initiatives is a first step policy makers and health care organizations could take to stimulate improvements in the organization of integrated care for people with mulitmorbidity. The development of policies and strategies aimed at the organization of integrated care for people with multimorbidity is important, because improvements/changes in the health system can often not be made via programmes only. Programmes focus mainly on actions at the micro level (individual), and less on meso (local and organizational) or macro levels (national and global). In contrast, system-level responses to the common constraints (e.g., legal or

financing issues) that particular programmes may face are broad in focus and aim to tackle the root causes of problems.

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Appendix A. Methods

A1. Data collection on integrated care programmes

Programmes that were considered for inclusion in the ICARE4EU project if programmes met all following criteria:

- Focus on providing care for adult people with multimorbidity (or contain specific elements for this target group), and
- Should be aimed at a patient target group consisting of people aged 18 and older, with two or more medically (i.e. somatic, psychiatric) diagnosed chronic (not fully curable) or long lasting (at least six months) diseases, of which at least one has a (primarily) somatic/physical nature, and
- Involve one or more medical service(s), and
- Involve cooperation between at least two services (these services may be part of the same organization, for example services within a hospital, or may be part of different organizations, for example between medical care and social care), and
- Have some formal status/formalized cooperation (any form), and
- Are evaluable in some way, and
- Are currently running (2014) or finished less than 24 months ago or start within the next 12 months.

Programmes that were not fully developed to manage multimorbidity, but contained several elements addressing multimorbidity issues (besides other elements) were also included. The 178 integrated care programmes were all critically screened on the following aspects:

- Whether medical service(s) was/were involved.
- Whether there was a cooperation between at least two services (within or between organizations).
- Whether the programme had some formal status/formalized cooperation.
- Whether the programme was evaluable.
- Whether the programme was currently operational or within the next year or had recently been finished (within the last two years).
- Whether the target group of the programme included adult patients or clients (aged 18 or above).
- Whether patients or clients had more than one medical (i.e. somatic, psychiatric) diagnosis of a chronic (not fully curable) or long lasting (at least six months) disease or disorder, of which at least one is (mainly) of a somatic nature.

Table A1. Number of reported and included programmes in the ICARE4EU project

Countries	Reported programmes in 2014 by online ICARE4EU survey	Included programmes
Austria	4	1
Baltic Sea region	1	0
Belgium	10	2
Bulgaria	6	5
Czech Republic	3	0
Croatia	4	4
Cyprus	7[a]	3
Denmark	4	4
Estonia	5	0
England	1	0
Finland	5	5
France	3[b]	0
Greece	10	9
Germany	12[b]	8
Iceland	8	7
Ireland	2	2
Italy	8	7
Latvia	2	2
Lithuania	5	4
Luxembourgh	17	4
Malta	8	2
Netherlands	6	6
Norway	2	2
Portugal	2	1
Slovenia	1	1
Spain	20	15
Sweden	11	5
Switzerland	3	1
UK	2[a]	1
Unclear	8	0
Total	**178**	**101**

a One of these programmes was targeted at patients with multimorbidity in both the UK and Cyprus and counted ones

b One of these programmes was targeted at patients with multimorbidity in both France and Germany and counted ones

A2. Cluster analysis

In order to come to a possible typology of integrated care programmes, a cluster analysis was conducted based on the following five programme characteristics:

- Main objectives of the programmes
- Addressed aspects
- Organizations involved
- Care providers (disciplines) involved
- Organizational structures, activities or processes established

Since each of these five programme characteristics was assessed by 10 to 24 items that could be answered with 'yes' or 'no', an item selection was made for each of the five programme characteristics. This was done by conducting a two-step cluster analysis for each characteristic, including all items. The two items per programme characteristic that contributed most to the clustering of the data, were selected for the final cluster analysis. This process let to the following programme items that were used for the final two-step cluster analysis:

- Main objectives: Reducing emergency/acute care visits
- Main objective: Preventing or reducing over-use of services
- Addressed aspects: Social care
- Addressed aspects: Nursing care
- Organizations involved: Nursing home
- Organizations involved: Primary care practice
- Care providers involved: Dieticians
- Care providers involved: Hospital/specialized nurses
- Organizational structures: Changes in job description
- Organizational structures: Case managers for patients

The two-step cluster analyses, which is a suitable clustering method for binary data, were conducted in SPSS. The maximum number of clusters to be identified was set at 6. After the cluster analysis was conducted, programme characteristics were described per cluster (target group, multimorbidity orientation) based on the questionnaire outcomes. Thereafter, country-level data from Eurostat regarding population characteristics (e.g., age) and healthcare system characteristics (e.g., strength of the healthcare system) were used to explore how the clusters related to these characteristics.

A3. Analysis based on theoretical model of integrated care

Based on the Development Model of Integrated Care (DMIC) [33], eight integrated care elements were created and labelled as follows: patient-centredness, delivery system, performance management, quality of professional care, interprofessional teamwork, roles and tasks. In order to come to a typology of programmes based on these integrated care elements, each programme needed to be scored on each of the integrated care elements. To come to these scores, the following three steps were undertaken:

1. For each of the ingetrated care elements we searched our data on the 101 selected programmes, for items that provided information concerning specific integrated care elements. The number of items that provided information concerning a specific integrated care element ranged from 3 to 23 (see Table A2).

2. Subsequently, for each programme sum scores per integrated care element were calculated. Therefore all of the selected items per integrated care element were scored as a 1 / 0 variable in which 1 means that the condition is met and 0 that the condition is not met. The sum scores per integrated care element ranged from 0 to a score equal to the number of items that were used to calculate the sum score.

3. In a third step mean scores were calculated per element, using equal metrics. This was done by first calculating the mean score and subsequently multiply this mean score with the new metric maximum score divided by the range of the original sum score:

   Integrated care score = (mean score) * (10/a)
   a = the range of the sum score based on all items that underlie a certain integrated care group

Table A2. Items that were used per integrated care element to calculate mean scores.

Integrated care element	Selected items
Patient-centredness	• Providing patient education materials • Self-management part of the programme • Self-management support tools part of the programme • Digital care communication between care provider and patient • One care provider appointed as contact person • Patient decision making tools • Personal care plan development
Delivery system	• Electronic patient record with access for all relevant care providers

Integrated care element	Selected items
	• A case manager is involved in the programme • Care pathway is part of the programme • Improving care coordination is part of the programme • Improving the integration of different units • Improving the integration of different organizations • Evaluation of care delivery is part of the care plan
Performance management	• Are payments adjusted for better performance in terms of quality? (Performance indicator: Structure or Performance indicator: Process or Performance indicator: Process) • Monitoring organizational aspects of the programme • Monitoring accessibility of the programme • Monitoring continuity of the programme • Monitoring the drop-out of patients • Monitoring the characteristics of healthcare providers • Monitoring the characteristics of patients • Monitoring the interaction between providers and patients • Monitoring decision making • Monitoring management of care • Monitoring of clinical outcomes • Monitoring of physical functioning • Monitoring of hospital admissions • Monitoring of patient satisfaction • Monitoring staff and management responsiveness • Monitoring competencies of the staff • Monitoring cost-effectiveness • Monitoring quality of life • Monitoring patient participation in society • Monitoring equity • Evaluation of outcomes • Evaluation of long term effects • Evaluation of cost-effectiveness
Quality of professional care	• Evaluation of care pathways • Involvement of patients (or representatives) in design of integrated care • Training provided to care providers • Main objective is promoting evidence-based practices • Multi-professional development groups within one organization • Multi-professional development groups within different organizations
Interprofessional teamwork	• Multi-professional care groups within one organization

Integrated care element	Selected items
	• Multi-professional care groups within different organizations • **A**ll relevant professional groups are involved • **C**ooperation between medical and nonmedical
Roles and tasks	• Power positions are in balance in multi-professional teams • Care providers have confidence in each other's competencies • Different working practices of organisations hinder collaboration
Commitment to integrated care	• Use of E-health tools hampered by resistance by care providers • Patient centeredness is hampered by inadequate support of care providers • Attitudes towards the programme are positive • Care providers are afraid of losing their professional autonomy • Managers give sufficient support for collaboration • There are barriers for cooperation between medical and non-medical care
Room for innovation and change	• Bundled payment is used to pay the providers • Incentives for providers (e.g. additional financial support, additional staff) • Development of an eHealth tool specifically for the programme

Appendix B. Overview of programmes per country (N=101)

Programme 1	
Name	Optimale Versorgung von langzeitbeatmeten Patienten unter qualitativen und wirtschaftlichen Aspekten
Country	Austria

Programme 2	
Name	Formes alternatives de soins aux personnes âgées
Country	Belgium

Programme 3	
Name	Samenwerkingsinitiatief EersteLijnsgezondheidszorg (SEL)
Country	Belgium

Programme 4	
Name	Volunteers, patients and physicians – united against diabetes
Country	Bulgaria

Programme 5	
Name	Not available for publication
Country	Bulgaria

Programme 6	
Name	Caritas Home Care for Elderly People
Country	Bulgaria

Programme 7	
Name	Center "Home Care" for assistance to elderly, chronically-ill people and people with disabilities
Country	Bulgaria

Programme 8	
Name	Home care for an independent and dignified life
Country	Bulgaria

Programme 9	
Name	Adherence to Medication
Country	Croatia

Programme 10	
Name	Croatian Registry for Renal Replacement Therapy (CRRRT)
Country	Croatia

Programme 11	
Name	Croatian Psychoses Registry
Country	Croatia

Programme 12	
Name	Croatian National Cancer Registry
Country	Croatia

Programme 13	
Name	PROSAFE- Promoting safety and quality improvement in critical care
Country	Cyprus

Programme 14	
Name	TELEPROMETHEUS: e-Educational Platform for Intensive Care Unit Health Professionals
Country	Cyprus

Programme 15	
Name	TELEREHABILITATION: Post ICU patient telerehabilitation services
Country	Cyprus

Programme 16	
Name	Preventing Multimorbidity - Healthier life in social psychiatry
Country	Denmark

Programme 17	
Name	Deveoplement of disease management programmes for the most commen multimorbidities
Country	Denmark

Programme 18	
Name	Clinic for Multimorbidity and Polypharmacy
Country	Denmark

Programme 19	
Name	Not available for publication
Country	Denmark

Programme 20	
Name	Potku programme - Patient at the Driver's Seat
Country	Finland

Programme 21	
Name	Not available for publication
Country	Finland

Programme 22	
Name	PIRKKA-POTKU (a regional sub-programme of the national POTKU programme (Patient at the Driver's Seat)
Country	Finland

Programme 23	
Name	Not available for publication
Country	Finland

Programme 24	
Name	Not available for publication
Country	Finland

Programme 25	
Name	Erbitte Rücksprache über Form und Umfang der Vorstellung
Country	Germany

Programme 26	
Name	Gesundheitsnetz Qualität und Effizienz eG
Country	Germany

Programme 27	
Name	Not available for publication
Country	Germany

Programme 28	
Name	INVADE - Interventionsprojekt zerebrovaskuläre Erkrankungen und Demenz im Landkreis Ebersberg
Country	Germany

Programme 29	
Name	Netzbezogenes Betreuungsarzt-System mit KOSI-Unterstützung
Country	Germany

Programme 30	
Name	Gesundes Kinzigtal
Country	Germany

Programme 31	
Name	Not available for publication
Country	Germany

Programme 32	
Name	Not available for publication
Country	Germany

Programme 33	
Name	Galilee Palliative Care Unit
Country	Greece

Programme 34	
Name	Mediterraneo Hospital
Country	Greece

Programme 35	
Name	EU-WISE Selfcare for Long-Term Conditions in Europe
Country	Greece

Programme 36	
Name	Aktios Elderly Care Units, Athens - Greece
Country	Greece

Programme 37	
Name	"Sotiria" Hospital e-Health Services
Country	Greece

Programme 38	
Name	Art Palace Elderly Care Unit - www.artpalace.gr
Country	Greece

Programme 39	
Name	REgioNs of Europe WorkINg toGether for HEALTH - Renewing Health
Country	Greece

Programme 40	
Name	Division of Geriatric Psychiatry/ Telepsychogeriatric service
Country	Greece

Programme 41	
Name	Integrated health care for HIV patients
Country	Greece

Programme 42	
Name	Lungrehabiltering
Country	Iceland

Programme 43	
Name	Pain, fibromyalgia and arthritis program
Country	Iceland

Programme 44	
Name	Not available for publication
Country	Iceland

Programme 45	
Name	Not available for publication
Country	Iceland

Programme 46	
Name	Heilsuborg obesity and lifestyle changes
Country	Iceland

Programme 47	
Name	Back- and Neck programme of The Spinal Unit at St. Franciscus' Hospital
Country	Iceland

Programme 48	
Name	Not available for publication
Country	Iceland

Programme 49	
Name	Medications optimisation in multimorbidity
Country	Ireland

Programme 50	
Name	OPTIMAL - OccuPaTIonal therapy self-MAnagement muLtimorbidity
Country	Ireland

Programme 51	
Name	Renewing Health
Country	Italy

Programme 52	
Name	The UP-TECH project, an intervention to support caregivers of Alzheimer’s disease patients in Italy
Country	Italy

Programme 53	
Name	Il Chronic Care Model, il Punto Unico di Accesso e il Team Aziendale degli Specialisti (attuali UVA) per la presa in carico della persona con Demenza (The Chronic Care Model, Single Point of Access and Corporate Team of Specialists for taking charge of the person with dementia)
Country	Italy

Programme 54	
Name	G.O.I.D. (Interdepartmental Operations Group) for the treatment of diabetic foot
Country	Italy

Programme 55	
Name	IGEA: a chronic disease management project for people with Diabetes
Country	Italy

Programme 56	
Name	Progetto MATRICE
Country	Italy

Programme 57	
Name	ARIA
Country	Italy

Programme 58	
Name	Proposals for clients grouping and assessment of necessary amount of services
Country	Latvia

Programme 59	
Name	Not available for publication
Country	Latvia

Programme 60	
Name	Not available for publication
Country	Lithuania

Programme 61	
Name	Development of Integrated care in Alytus city
Country	Lithuania

Programme 62	
Name	Integrated Care Development in Anyksciai District
Country	Lithuania

Programme 63	
Name	Not available for publication
Country	Lithuania

Programme 64	
Name	Programme de réadaptation au domicile du patient âgé polypathologique suite à un accident de santé
Country	Luxembourg

Programme 65	
Name	Clinique de l'Hypertension artérielle
Country	Luxembourg

Programme 66	
Name	Service de rééducation gériatrique - Développement d'une filière gériatrique
Country	Luxembourg

Programme 67	
Name	Clinique de l'obésité
Country	Luxembourg

Programme 68	
Name	Not available for publication
Country	Malta

Programme 69	
Name	Not available for publication
Country	Malta

Programme 70	
Name	Utrecht Proactive Frailty Intervention Trial
Country	Netherlands

Programme 71	
Name	AGEhIV Cohort Study (Comorbidity and aging with HIV infection)
Country	Netherlands

Programme 72	
Name	INCA - the INtegrated Care program
Country	Netherlands

Programme 73	
Name	Een ziekte komt zelden alleen; werkt het Guided Care model bij mensen met multimorbiditeit
Country	Netherlands

Programme 74	
Name	Casemanagement in addition to diabetes management for comorbid type 2 diabetes patients (CasCo).
Country	Netherlands

Programme 75	
Name	Disease Management for Co-morbid Depression and Anxiety (DiMaCoDeA)
Country	Netherlands

Programme 76	
Name	Good patient care pathways for elderly and chronically ill patients in Norwegian municipalities
Country	Norway

Programme 77	
Name	Whole, coordinated and safe pathways in the municipalities
Country	Norway

Programme 78	
Name	National Program for Diabetes
Country	Portugal

Programme 79	
Name	Not available for publication
Country	Slovenia

Programme 80	
Name	Electronic Balanced Scorecard for Patients with Multiple Chronic Conditions.
Country	Spain

Programme 81	
Name	Estrategia de Calidad de los Cuidados de Atención Primaria
Country	Spain

Programme 82	
Name	Programa de Atención al Mayor Polimedicado.
Country	Spain

Programme 83	
Name	Continuidad de cuidados tras un alta hospitalaria
Country	Spain

Programme 84	
Name	Programa integral de atención geriátrica. Unidad de atención a las residencies geriátricas
Country	Spain

Programme 85	
Name	An integrated care procedure for patients with chronic illnesses
Country	Spain

Programme 86	
Name	Programa de Atención al Paciente Crónico y Polimedicado
Country	Spain

Programme 87	
Name	Electronic Health Record System (AP-Madrid): e-Protocols designed for the management of patients with chronic conditions
Country	Spain

Programme 88	
Name	Marco Referencial de la Continuidad de Cuidados en el Servicio Madrileño de Salud
Country	Spain

Programme 89	
Name	Estrategia de Atención a Pacientes con Enfermedades Crónicas en la Comunidad de Madrid
Country	Spain

Programme 90	
Name	Estratificación de la población de acuerdo a su nivel de riesgo.
Country	Spain

Programme 91	
Name	Receta Electrónica
Country	Spain

Programme 91	
Name	Strategy for chronic care in Valencia - Estrategia para la atención a pacientes crónicos en la Comunitat
Country	Spain

Programme 93	
Name	Care of the chronically state of clinical complexity and advanced disease (PCC and MACA) -Programa d'Int
Country	Spain

Programme 94	
Name	HORUS - Historia Clínica en Atención Primaria y Especializada
Country	Spain

Programme 95	
Name	Samordning för Linnea - lokala team med samordningsansvar i Kronobergs län
Country	Sweden

Programme 96	
Name	ViSam modellen
Country	Sweden

Programme 97	
Name	Not available for publication
Country	Sweden

Programme 98	
Name	Not available for publication
Country	Sweden

Programme 99	
Name	Äldres Bästa projekt äldrelots
Country	Sweden

Programme 100	
Name	Patients complexes
Country	Switzerland

Programme 101	
Name	Well Connected: Integrated Care Programme for Worcestershire
Country	UK