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Integrated Care for Chronic Diseases – State of the Art

O. Capelli, B. Quattrini, F. Abate, B. Casalgrandi and I. Cacciapuoti

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<http://dx.doi.org/10.5772/63362>

Abstract

Chronic diseases represent a high cost for healthcare systems, for individuals, families, businesses and governments. The World Health Organization (WHO) estimates that an increase of 10% of chronic diseases is associated with a reduction of 0.5% of annual economic growth. Primary care has proven to ensure high levels of efficiency, effectiveness, equity, safety, timely and centrality of the patient achieving better health outcomes and lower costs. The Chronic Care Model (CCM) proposes a proactive approach in assisting the empowerment of patients and their community. The CCM contributes to improving the quality of care and health outcomes and the reduction of inequalities (e.g., ethnicity, social status) too.

The primary care team has the responsibility for coordination of care for patients living in the community. The teamwork integration is a crucial point. The integrated care involves various programs designed to promote coordination within and between health care organisations, with the aim to improve patient care and health outcomes and to boost the overall efficiency of health care systems. Scientific evidence shows that integrated care reduces the use of some resources (hospitalisations, emergency room visits, direct costs) in the management of chronic diseases, such as chronic heart failure, diabetes mellitus and chronic obstructive pulmonary disease. Vice versa, lack of integrated care risks making the care inappropriate, fragmented and/or redundant and at risk of errors. The integration of system activity in chronic disease management, entrusted to the primary care, must be transposed and implemented by all health professionals who follow the patient. Health professionals must organize care by adopting a patient-centred approach, supporting the paths of self-management and ensuring the exchange of information among both professionals and patients themselves and working in a public-health perspective. Continuity of care is one of the fundamental aspects of the integration programmes. Intermediate care and transitional care should assure the multi-professional coordination and cover the connection and the patient's transition between the various areas of assistance, between the hospital and the patient's home. Last but not least, integrated care needs the patient's involvement as an essential tool of the process.

There is growing evidence that effective self-management is critical to optimising health outcomes for people with chronic diseases.

Keywords: Chronic diseases, integrated care, multimorbidity, continuity of care, primary care

1. Introduction

1.1. The epidemic of chronic diseases

In Western countries, the progressive increase in life expectancy in the general population and chronic diseases in the aged population has profoundly changed the scenario of health needs [1].

The World Health Organization (WHO) (2002) defines chronic diseases as "health problems that require an ongoing management over a period of years or decades, and include: diabetes, heart diseases, asthma, chronic respiratory diseases, cancer, HIV/AIDS, dementia, depression and physical disability " [2].

Chronic diseases represent a high cost for health care systems, for individuals, families, businesses and governments. The WHO estimates that an increase of 10% of chronic diseases is associated with a reduction of 0.5% of annual economic growth [3].

Globally, chronic conditions are the main causes of death in Western countries. For example, about two-thirds of the deaths that occurred in 2008 (36 million vs. 57 million) was attributable to chronic non-communicable diseases, including cardiovascular diseases (48% of chronic diseases), cancer (21%), chronic respiratory diseases (12%) and diabetes (3.5%) [3].

In the coming years, the prevalence of chronic diseases is estimated to increase rapidly, both due to the unrestrainable ageing process of the world population and the increased longevity of people with chronic pathologies [3–5]. A growing number of people has two or more diseases, interdependent (co-morbidities) or as co-occurrence of multiple diseases in the same individual (chronic multimorbidity) [1, 3, 6–10]. Multimorbidity is significantly associated with increased mortality and disability and a lower quality of life [9–10]. Its prevalence can be estimated at 20–30% of the general population and it rises from 55% to 98% when considering the elderly or disadvantaged social classes [7–10].

The spread of chronic diseases not only affects countries with a medium-high level of wealth, but also the countries with lower wealth levels [11], as evidenced by more than 80% of deaths from cardiovascular problems or diabetes, and almost 90% of those for chronic obstructive pulmonary disease (COPD), occurring in low- and middle-income countries.

According to the WHO greatest part of the human and social impact caused by chronic diseases could be prevented through transparent actions, efficient and sustainable [3], since a significant

reduction of the impact of chronic diseases will depend more and more from preventive interventions that are going to systematically implement the entire population.

These interventions, easily available at low cost and high efficiency, should take into account, among different aspects, also the role of socio-economic inequalities, as the populations most affected by chronic diseases are also those with a greater condition of deprivation. Any policy should have a bio-psycho-social approach to prevent the burden of chronic diseases and should act on the inequalities of the social determinants of health (e.g., income, education, home, services, physical environment) [12].

Among the social determinants of health, health services have a relatively greater impact on the severity of illness (including death) rather than on their social impact. Since the inequalities on the severity of health problems (including disability, death and co-morbidity) are more relevant than inequality in the incidence of health problems, appropriate health services play an essential role in reducing inequalities in health" [13].

According to Margaret Chan, director of the WHO, in the health sector, **primary care** plays a privileged role in contrasting social inequalities in health: "The primary care is the best framework in which to act to ensure that all stakeholders, including the outside of the health sector, examine their impact on health".

The WHO has advocated for a long time an integrated approach in the prevention and the treatment of all chronic diseases. Key points of chronic management are represented by the existence of an efficient system of primary care and the development of the empowerment of patients and their caregivers.

From 2000 to 2010, the WHO has promoted several surveys to evaluate the capacity of prevention and control of chronic diseases in the Member States. The surveys have found that some progress has been made, but not in a uniform way, especially in high-income countries. Many countries are developing strategies, plans and guidelines for the fight against chronic diseases and risk factors.

In 2013, the WHO has proposed a multiannual action plan to be implemented over the period 2013-2020 for the prevention and control of chronic diseases, in particular cardiovascular diseases, cancers, chronic respiratory diseases and diabetes [3].

In the plan are highlighted six strategic objectives (Table 1), and, for each objective, a set of actions are outlined that all Member States and other international partners should achieve. The task of defining the priorities and establish strategic planning must be undertaken by a mixed team of primary care providers and community representatives.

The primary care, both in the report of the WHO (2008) "Primary Health Care: Now More Than Ever" [14] and in the Tallinn Charter, devoted to "Health Systems for Health and Wealth" (2008), [15] has proven to ensure high levels of quality in terms of efficiency, effectiveness, equity, safety, timely and centrality of the patient both at the macro level (policy, funding and regulation) and locally (organization and provision of services), achieving better health outcomes and lower costs.

To raise the priority accorded to the prevention and control of non-communicable diseases in global, regional and national agendas and internationally agreed development goals, through strengthened international cooperation and advocacy.

To strengthen national capacity, leadership, governance, multisectoral action and partnerships to accelerate countries' response for the prevention and control of non-communicable diseases.

To reduce modifiable risk factors for non-communicable diseases and underlying social determinants through the creation of health-promoting environments.

To strengthen and orient health systems to address the prevention and control of non-communicable diseases and the underlying social determinants through people-centred primary health care and universal health coverage.

To promote and support national capacity for high-quality research and development for the prevention and control of non-communicable diseases.

To monitor the trends and determinants of non-communicable diseases and evaluate progress in their prevention and control.

Table 1. WHO's strategic objectives for the prevention and control of chronic diseases (modified from [3])

As defined by time [16, 17] a "community-oriented" primary care is characterised by:

- A systematic assessment of the health needs of the population;
- Identifying community health needs;
- The implementation of systematic measures, with specific population groups involved (e.g., directed to the change in lifestyle or improvement of living conditions);
- Monitoring the impact of these interventions, to test the results achieved regarding population health.

The principles outlined above are the basis of different organisational models for the care of chronic diseases, all of which draw origin from the Chronic Care Model (CCM) developed in the late 90's in California [18, 19]. The model proposes a proactive approach to assisting oriented empowerment of the patient and the community (Figure1), as opposed to a reactive approach, based on the acute event expectation, typical of hospital care.

The CCM is based on six key issues:

1. **community resources:** mobilizing community resources to sustain patients' needs through volunteer groups, self-help groups, etc;
2. **health care organizations:** create a culture, organisation and mechanisms that promote safe and high quality;
3. **self-care:** in chronic diseases the patient becomes an active protagonist of care processes. We need to promote effective self-managed support strategies that include assessment, definition of objectives, plans of action, coping strategies, problem-solving, and follow-up;



Figure 1. Chronic Care Model (reproduced with permission).

4. **The professional team:** the structure of the teamwork (specialists, general practitioners, nurses, educators) must be deeply modified, acting a clear division of activity and distinguishing assistance to acutely ill patients from the planned management of chronically ill patients;
5. **Decision support:** to promote care based on evidence and patient preferences; share guidelines and information with patients to encourage their participation.
6. **The development of computerized information systems,** which support three main functions:
 - a. the pathology record keeping;
 - b. alert system to support the primary care team to follow the guidelines;
 - c. feedback for physicians, to monitor the performance of the team and the care system.

The CCM has been implemented in many countries, becoming an international reference model for the care of chronic conditions [5, 18, 20–34]. According to the available evidence, the CCM contributes improving the quality of care, health outcomes [30, 35] and the reduction of inequalities (e.g., ethnicity, social status) too [36].

2. Management of chronic diseases: integration is needed

The relevant changes in epidemiological profiles of the population, the socio-economic development of communities and family profiles [37], associated with remodelling in the care

hospital network, impose equally significant changes in the way we deliver health and social care, through gripping models in an integrated load, as defined by the CCM. The paradigmatic example is the assistance provided to patients with chronic illnesses or multimorbidity, which require prolonged periods of assistance.

The effectiveness of public health interventions in the area of Primary Health Care is strongly linked to the development policies of the services and care activities that involve a high level of integration, both at the time of detection of needs and programming, both in the design and in services delivery, social interventions and interventions in the health area [38]. The ability to accurately identify the health resources necessary for subjects with multimorbidity and high care burden relies on the accuracy of measurements of risk adjustment that should address the problem in its entirety.

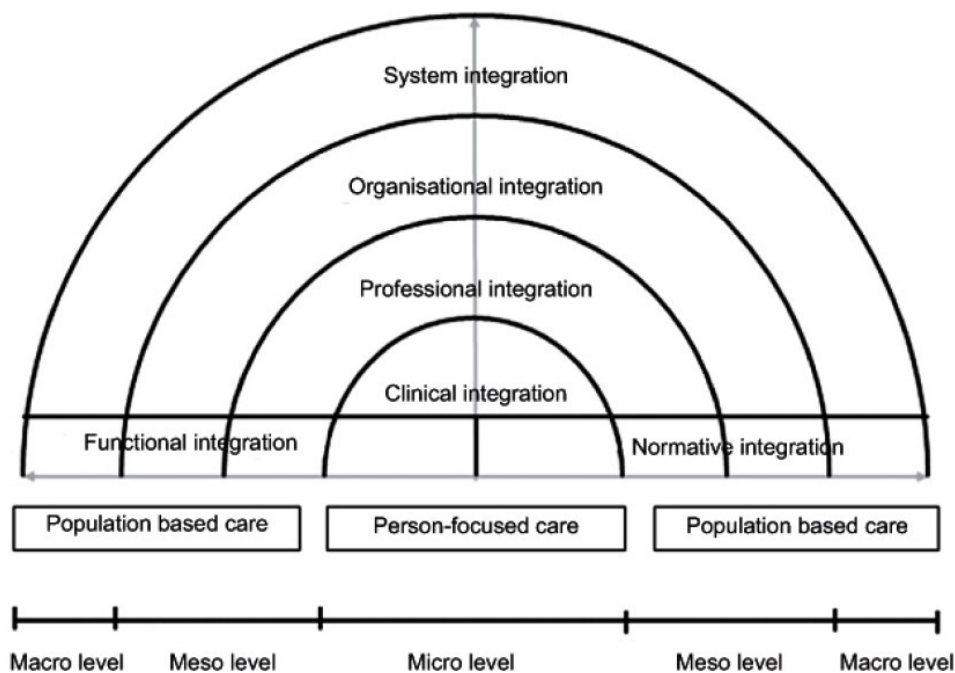


Figure 2. Conceptual framework for integrated care based on the integrative functions of primary care (reproduced with permission from Valentijn et al. [39]).

The major shortcomings in the management of chronic diseases include:

- Rushed practitioners not following established practice guidelines
- Lack of care coordination
- Lack of active follow-up to ensure the best outcomes
- Patients inadequately trained to manage their illnesses

It is essential to provide an organization that facilitates an integrated vision of health and social interventions. An integrated treatment system (Figure 2) based on the integrative function of primary care [39] includes multiple dimensions of integration, that have a complementary role

on the micro level (clinical integration), meso (professional and organisational integration) and macro (system integration). The functional integration and the normative integration, however, guarantee the connection of all levels of a system.

Principle	Implementation example
1. Comprehensive services across the continuum of care	Integrated health systems are responsible from primary through to tertiary care and closely cooperate with social care organizations
2. Patient focus	Service planning and information management are driven by needs assessments and processes designed to improve patient satisfaction and outcomes
3. Geographic coverage and rostering	The system takes responsibility for a clearly defined population in a geographic area, but people can seek services from other providers if they wish
4. Standardized care delivery through inter-professional teams	Best practice guidelines, clinical care pathways and decision-making tools standardize and enhance quality of care; the use of electronic information systems facilitates effective communication
5. Performance monitoring	Monitoring systems measure care processes and outcomes at different levels and are linked to reward systems to promote the delivery of cost-effective high-quality care
6. Information systems	Computerized information systems allow effective tracking of utilization and outcome data across the continuum of care and serve consumers, payers and providers
7. Organizational culture and leadership	Committed leadership brings different cultures together, promotes the vision and mission of integration, and helps staff to take ownership of the process
8. Physician integration	Physicians are effectively integrated at all levels of the system and play leadership roles in the design, implementation and operation of the health system
9. Governance structure	Governance structures promote integration through representation of stakeholder groups involved in the delivery of healthcare along its continuum, including physicians and the community
10. Financial management	Financing mechanisms allow pooling of funds across services, for example, through global capitation, which pays for all insured health and some social services required by the enrolled population.

Table 2. Ten key principles for successful health systems integration (adapted from [40,44] with permission)

Lack of integration risks to make inappropriate the care processes, fragmented and/or redundant and at risk of errors. Despite a growing interest, to date a universally agreed definition of "integrated care" is still lacking [40]. In the literature, there are more than 180 definitions of terms and concepts relevant to one or more aspects of integration assistance. The integrated care involves a variety of different concepts and programs designed to promote coordination within and between health care organisations, with the aim to improve patient care, health outcomes and to boost the overall efficiency of health care systems. It is important to distinguish between integration and integrated assistance [41]:

- Integrated assistance is an organising principle of granting assistance;
- Integration describes necessary methods, processes and models to reach this kind of supply.

The experience of health care organisations that have achieved high levels of integration highlights the benefits that this kind of work can have for patients and, more generally, for the population [42–43].

A recent meta-review, referring to the ten key principles for evolved integrated systems (Table 2) showed that integrated care programs can improve the outcomes of patient-centred care, the quality of the processes and reduce the use of some health care resources (hospitalizations, emergency room visits, direct costs), in the management of chronic diseases such as chronic heart failure, diabetes mellitus and COPD [40].

3. The pivotal role of the Primary Health Care in an integrated health care system

Both the cited report "Primary Health Care: Now More Than Ever" [14] and the Tallinn Charter, devoted to "Health Systems for Health and Wealth" [15] defined the fundamental role of primary care in ensuring high levels of efficiency, effectiveness, equity, safety, timely and the patient's central role both at the macro level (policy, funding and regulation) and locally (organization and service delivery). More recently (2014) the European Commission, in light of the significant social and political changes mentioned above, decided to redefine the role of primary care, with special attention to the funding systems and referral. According to the panel's experts, Primary Care "... is the provision of universally accessible, integrated person-centred, comprehensive health and community services provided by a team of professionals accountable for addressing a large majority of personal health needs. These services are delivered in a sustained partnership with patients and informal caregivers, in the context of family and community, and play a central role in the overall coordination and continuity of people's care "[45].

The essential key concepts for the development of primary care, concern:

- **the community**, defined as a unit of a population that resides in a geographically defined territory, on which it has political and social responsibilities with everyday social interactions that cover all (or almost) the activities of daily living;
- **the role of patients**, with particular attention to the objectives defined by the patient regarding quantity and quality of life, and involvement in decisions about care (Shared Decision Making);
- **the role of informal caregivers** (e.g., family, friends, volunteers), to be interpreted as complementary, and not just as an extra that ensures the more formal (institutional) support;

- **an answer to most health problems**, which includes the full range of interventions, from the promotion of health care at the end of life, and that is related to the health sector as well as to the social sphere;
- **the integrated team work and the network of professionals** (including general practitioners, nurses, and social workers) who carry out their activities at a primary care centre or community hospital; this facilitates the work processes and inter-professional cooperation;
- **care coordination** with a central role given to the general practitioner;
- the enhancement of **the role of nurses** and other health professionals.

The primary care team, therefore, has the responsibility for coordination of care for patients living in the community. The Primary Health Care represents the privileged place to evaluate the patient's needs and oversee the paths of chronic patients, offering a proactive and personalised centre of services in integration and continuity with the offer of social policies. The identification, as early as possible, of individuals affected by or at increased risk of non-communicable chronic diseases and their subsequent take-over by the health care system is essential to reduce the risk of disability and mortality.

4. Population Health Management for chronic diseases

A population health approach focuses on improving the health status of the population. The action is directed at the health of an entire population, or subpopulation, rather than individuals. Focusing on the health of populations also necessitates the reduction in inequalities in health status between population groups.

As an approach, population health focuses on the interrelated conditions and factors that influence the health of populations over the life course, identifies systematic variations in their patterns of occurrence, and applies the resulting knowledge to develop and implement policies and actions to improve the health and well-being of those populations. [46, 47]

The Population Health Management approach represents, therefore, a cornerstone of the literature on chronic diseases and aims to maintain the population in good health by responding to the needs of individual patients both in terms of prevention and of treatment of chronic conditions through the identification of the target population based on health need, stratification by severity and assessment of take-over patterns (Figure 3).

To date, the Population Health Management [48] is a perspective, and not an exhaustive model, and that identifies a path of change articulated on six pillars:

1. Patient Population Identification
2. Health Assessment
3. Risk Stratification
4. Engagement

5. Patient-Centred Interventions

6. Impact Evaluation

Its purpose is the differentiation of the people affected or at risk of chronic diseases in sub-populations (sub-target) identified by complex care (disease staging) about the stage of development of the disease, the existence or absence of complications, specific requirements related to the coexistence of other diseases.

This differentiation results essential to define the most effective strategies and specific interventions tailored to the patients and to "customise" the care and treatment plan (Figure 4), respecting the patient's central role and his choices in the care pathway. It is also an essential prerequisite for efficiency by reducing the inappropriate interventions.

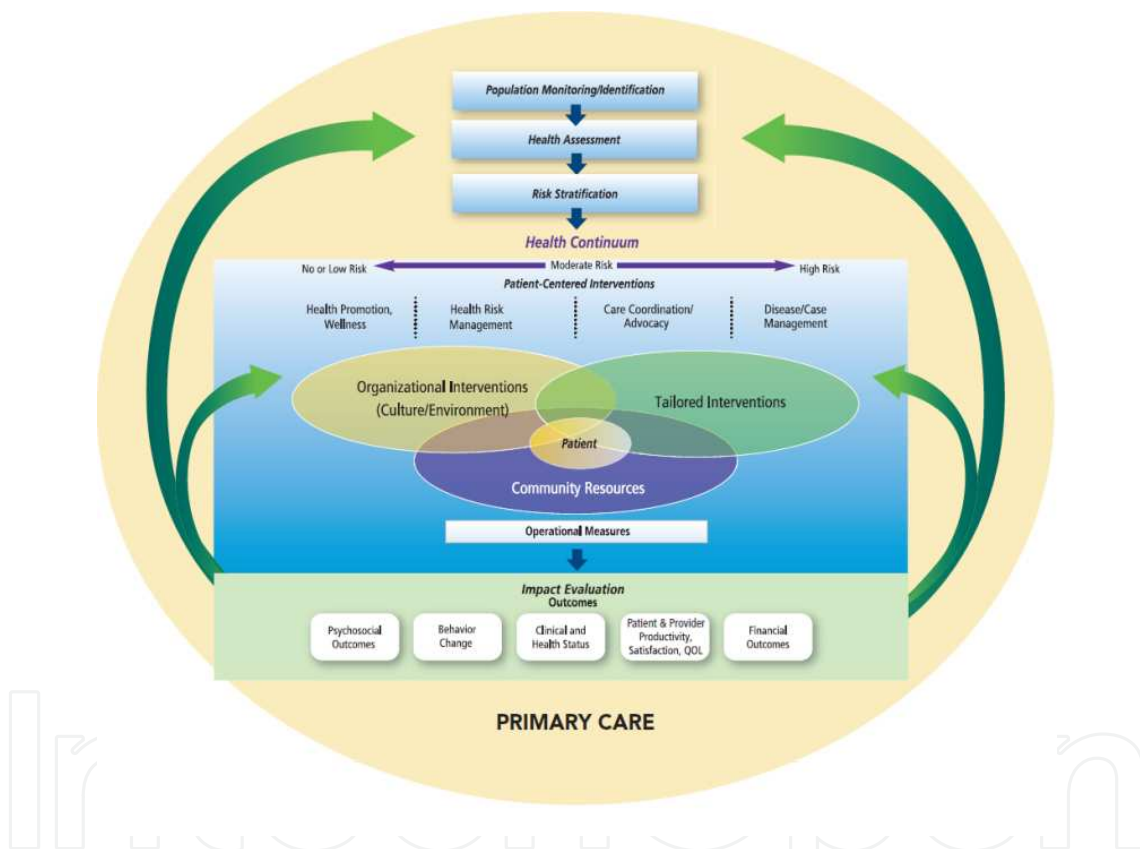


Figure 3. Population Health Conceptual framework (adapted with permission from [48]).

5. The competence of health workers involved in integrated care

The primary need to offer to patients clear and authoritative professional reference points along the care path can be resolved only by the conscious implementation of explicit management strategies shared by the various health professional and supported at the institutional level.

The integration of system activity in chronic disease management, entrusted to the primary care, however, must be transposed and implemented by all health professionals who follow the patient. The WHO has identified five fundamental competencies that health professionals need to apply for the treatment of chronic conditions (Table 3). [49]

Its purpose is the differentiation of the people affected or at risk of chronic diseases in sub-populations (sub-target) identified by complex care (disease staging) about the stage of development of the disease, the existence or absence of complications, specific requirements related to the coexistence of other diseases.

1. Patient-centred care

- Interviewing and communicating effectively
 - Assisting changes in health-related behaviours
 - Supporting self-management
 - Using a proactive approach
-

2. Partnering

- Partnering with patients
 - Partnering with other providers
 - Partnering with communities
-

3. Quality improvement

- Measuring care delivery and outcomes
 - Learning and adapting to change
 - Translating evidence into practice
-

4. Information and communication technology

- Designing and using patient registries
 - Using computer technologies
 - Communicating with partners
-

5. Public health perspective

- Providing population-based care
 - Systems thinking
 - Working across the care continuum
 - Working in primary health care-led systems
-

Table 3. Core competencies of the personnel assigned to take charge of patients with chronic diseases (adapted from [49])

This differentiation results essential to define the most effective strategies and specific interventions tailored to the patients and to "customise" the care and treatment plan (Figure

4), respecting the patient's central role and his choices in the care pathway. It is also an essential prerequisite for efficiency by reducing inappropriate interventions [48].

	1	2	3	4	5	6
	Patient Population Identification	Health Assessment	Risk Stratification	Engagement	Patient-centered Interventions	Impact Evaluation
Level V	Clinician receives real-time, patient & population specific data at point of care	Clinician auto-notified of new or conflicting info requiring resolution	Valid tools auto-stratify patients & population across all clinicians; gaps flagged for action	"Medical home"; clinician monitors, optimizes care plan & care team across all settings	Clinician/Patient collaborative care plan; 1°, 2°, 3° prevention focus; coordinated team	Real-time feedback; outcomes meet & exceed patient, peer, population goals
Level IV	Patient information available from all clinicians - ID, risks, condition control	Patient health, values, preferences assessed; clinician receives info for consideration	Stratification lists available based on claims, HA, labs, screening info	Clinician engages with patient in "medical home," coordinates across connected settings	Clinician aware of & responds to patient needs/preferences focus on 1°, 2°, 3° prevention	Clinician receives patient outcome info; performance goals set in peer organization
Level III	Clinician registry – key diagnoses, tests, Hx, and condition control	Clinician evaluates health risks based on year-over-year comparing assessments	New health risks identified through health assessments and via registry lists	Clinician engages with patient focusing on both past and newly identified risks	Clinician focuses on 1°, 2°, 3° prevention; strategies for risks identified	Clinician unaware of patient outcome unless directly involved in care
Level II	Clinician has patient list with diagnoses	Clinician asks patients for baseline health assessment; assesses patient at the visit	Risk based on "frequent flier" status & clinician lists with diagnoses	Clinician engages with patient episodically at patient presentation	Intervention based on current patient need and known health risk(s)	Clinician unaware of patient outcome unless directly involved in care
Level I	Clinician identifies patient through direct interaction and hard-copy records	Clinician assesses patient at the visit	Clinician aware of high-risk patients based on "frequent flier" status	Clinician engages with patient episodically at patient presentation	Intervention based on current patient need and known health risk(s)	Clinician unaware of patient outcome unless directly involved in care

Figure 4. Population Health Conceptual framework (adapted with permission from [48]).

These skills, consistent with the provisions of the CCM organisational models, supplement those already acquired, such as the practice of care based on the evidence or attention to professional ethics.

Health professionals must organise care by adopting a patient-centred approach, supporting the paths of self-management and ensuring the exchange of information among both professionals and patients themselves and working in a public-health perspective.

6. Continuity of care in an integrated care system

The fragmentation of health care is one of the major risks to which the patient with multimorbidity is exposed [50]. If a unified vision of the health problem is lacking, there will frequently be a repetition of the traits of the common cure's path to more than one diseases, favouring a bureaucratic and economic burden.

Several studies have attempted to measure the continuity of cares in certain health professional areas (in particular, Mental Health and Family Medicine) or in certain categories of special need of complementing patients (basically, children and patients with chronic diseases).

The concept of continuity of care, as one of the fundamental aspects of the integration of care, has been studied thoroughly by Freeman [51] and Haggerty [52]. Although these studies did not achieve a unified definition and all-inclusive "continuity," a multidimensional classification of possible types of continuity of care in six logical categories has now been proposed:

1. Experienced continuity, defined as a set of relationships between the patient and one or more professionals coordinates from the health problem.
2. Continuity of information, based on the need of information exchange of the patient's clinical data.
3. Longitudinal continuity, the traditional definition of what constitutes the interpersonal relationship between the patient and one or more professionals who follow him/her over time.
4. Cross-boundary and continuity team, focused on the communication between professionals.
5. Flexible continuity, defined as the set of traders' efforts to make the flexible treatment process depending on the emergency
6. Interpersonal or relational continuity, defined as the set of interpersonal relations that exist not only between the patient and health professionals, but also among professionals who interact with the healing process.

This multi-dimensional definition [51] underpins some aspects of care continuity of relations among health professionals (medical and non-medical) who participate in the process of care for a particular patient and work together to exchange information about the health conditions of the patient [53]. This particular aspect of continuity, analysed by Freeman and Shepperd in a distinct way but complementary in the last three points of their multidimensional definition (i.e., cross boundary and continuity team, flexible continuity and interpersonal or relational continuity), is defined by the term "integration of care".

The concept of continuity has found development in other areas characterised by the need for integration of care and the information exchange between patient and one or more professionals: the family medicine, and in particular the paediatrician [54, 55], nursing care, especially in-home care, and care of people with chronic conditions [56, 57].

The potential benefits, traditionally ascribed by the literature to continuity of care, are essentially two [58, 59]:

- a. **A greater satisfaction of the users of the system**, through the enhancement of interpersonal relationships structured in a way that are able to make more challenging the work for medical professionals and can increase the sense of care perceived by patients;
- b. **A greater efficiency in the processes of care**, through a growing rationalisation of the treatment path (and, therefore, less risk of unnecessary duplication of benefits), lower transaction costs and lower information asymmetry.

7. Intermediate care for chronic diseases management

The concept of "intermediate care", born in England in 2000 in the National Beds Enquiry, has entered the lexicon of the European Health Policy. Over the years, in the literature, the delicate

issue of integration between hospital and territory has been developed primarily with two perspectives:

1. The intermediate care, which covers all the intermediate areas of intervention between the hospital and the patient's home and that qualifies itself for multi-professional coordination [60–61];
2. The transitional care that concerns the manner of connection and the patient's transition between the various areas of assistance [62–65].

The intermediate cares, therefore, consist of an area of integrated services, both health and social, residential and domiciliary services, delivered in the context of primary care, where the care plan is actively agreed among health and social care professionals, patients and caregivers and where the patient's self-management is a primary goal. These services primarily aim to maximise the recovery of autonomy while keeping the patient as much as possible to his/her home and are provided by a multi-dimensional assessment of the patient, which supports an integrated and individualised plan of prevention and nursing. They are mainly intended for chronic patients and multi-morbidity. The care of the person with chronic conditions does not have by its very nature a result of healing, the concept of care, in fact, extends itself to interventions that allow a better living with the disease and the best residual function possible. Intermediate care can offer support to patients both in residential structures defined community hospital and at home, but it is still a limited service in time (no more than six weeks). The focus of these services is primarily rehabilitation, but with special attention also to the therapeutic management and self-education, ensuring continuity and coordination of the different services (health, social, etc.) and community resources.

8. The importance of self-management in the chronic diseases' integrated care

Self-management is the ability of the individual to manage the symptoms, the treatments, the life style changes and the psychosocial, cultural and spiritual consequences of the states of health [66]. Self-management is crucial in people with chronic diseases because the patient will be primarily responsible for their care throughout the course of the disease [67]. The orientation to the centrality of the assisted and self-determination presupposes a welfare approach and an organisation that considers the patient and his family, not only as active protagonists of the care processes, but also as subjects that need to be supported and oriented in the acquisition of skills necessary for the management and control of the disease(s).

The self-management of chronic disease has been recognized as a critical component of health cares for a long time; there is growing evidence that effective self-management is essential for optimising health outcomes for people with chronic diseases [68–82].

Patient education is focused on the patient's knowledge about his pathology in making the right decisions about his/her health and not just decisions about the disease, how the disease affects his/her role in working life, couple or social life, etc. [83].

In both European (e.g., Denmark, France, England, Sweden) and non-European (e.g., Australia, Canada, the United States) countries, structured programmes of **self-management of chronicity** have been implemented. Among others, there is the model of the Stanford University in California (Stanford chronic disease self-management program) also adopted in Australia (CDSMP), Canada and Europe.

The **Stanford Chronic Disease Self-Management Program** is a workshop, organised once a week, two and a half hours, for six weeks, in senior centres, libraries, churches and hospitals and attended jointly by people with different chronic conditions. Themes covered include:

- Techniques to deal with problems such as frustration, fatigue, pain and isolation
- Exercises to maintain and improve strength, flexibility and perseverance
- Appropriate use of medications
- Communicate effectively with family, friends, and caregivers
- Nutrition
- Evaluation of new treatments.

The workshops are run by two qualified leaders, with chronic diseases, one or both of whom are not health professionals [84].

9. Conclusions

The world of chronicity is an area in constant growth that involves a significant use of resources, requiring the guarantee of continuity of care for extended periods of time and a high multi-professional integration, both longitudinal (between hospital and territory) and transversal over the territory itself (between primary care and social services). The support of residential services (Hospice, community hospital, nursing home) is critical since they often are not sufficiently designed and developed even in the most advanced countries [85, 86].

The current "effective" treatments improve the prognosis, particularly in high-risk patients. The risk of survivors becomes increasingly higher with each new episode of exacerbation; the progression of the disease itself further increases this risk, with the need for new and more complex treatments, generating a "spiral" that only close with the patient's death [87].

Goals of care in patients with chronic illness, then not being able to be turned to healing, should be directed to the stabilisation as long as possible or to the improvement of their clinical conditions and their functional status, focusing on prevention of disabilities and maintaining the quality of life [88].

To achieve this, a high quality level of multi-professional and integrated care pathways is needed [89] in order to enable a long-term assistance of these chronic patients in their own homes with active participation of both the patients themselves and their caregivers, ensuring continuity of care and the best integration of social and health interventions [89–91].

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