

The implementation of a Community Health Centre-based primary care model in Italy. The experience of the *Case della Salute* in the Emilia-Romagna Region

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Abstract

Background. The Community Health Centre (CHC) primary care model is a team-based health care delivery model intended to provide comprehensive and continuous medical care to patients within a defined community. The CHC, *Case della Salute* in Italian, model was introduced in the Emilia-Romagna Region in 2010.

Methods. We present updated data on the implementation on the CHC *Case della Salute* primary care model in the Emilia-Romagna Region.

Results. There are 67 operating CHCs in Emilia-Romagna (update March 2015); 26 small (39%), 24 medium (36%) and 17 large (25%). Since 2011 the number of operating CHCs has increased by 60%, reaching 55% of the target planned CHCs (n. = 122). There is, on average, one running CHC per 66.524 inhabitants. 16% of total general practitioners (GPs) and 8.4% of total family paediatricians working in Emilia-Romagna have their practice in CHCs. CHCs offer primary and specialist integrated care, prevention services, health education and social care.

Discussion. Although preliminary results suggest CHCs have fostered primary care's quality and efficiency, more research is needed to assess their impact on improving clinical, social and economic outcomes.

Key words

- Community Health Centres - *Case della Salute*
- primary care
- integrated care
- chronic care model
- patient-centred care

INTRODUCTION

Several on-going socio-demographic patterns are challenging European welfare policies. Among them, three are putting considerable strain on health systems: i) the ageing of the population, ii) the increasing burden of non-communicable diseases (NCDs) and iii) the ongoing economic recession [1].

The ageing of the population and the increasing burden of NCDs' impact on health systems is mediated by changing health profiles, increased demand for health service use, and rising health costs. The ongoing eco-

nomic recession add on this framework by – on one side – reducing resources for public expenditure on health and – on the other side – negatively impacting on individual behavioural risk factors [2].

In this context, the new European health policy framework – *Health 2020* – identifies a primary health care approach as a cornerstone of health systems and a key to address the challenges they are facing [3]. It underlines how strengthening primary healthcare can help to improve the equity, efficiency, effectiveness, and responsiveness of health systems and how primary

care is a key vehicle for delivering health promotion and disease prevention services [4]. Considered to be a hub to link other forms of care, primary care can respond to today's needs by fostering an enabling environment for partnerships to thrive, and encouraging people to participate in new ways in their treatment and take better care of their own health [3, 5].

In line with that, the "Community Health Centre" (CHC) primary care organizational model (also called Medical Home primary care model in some settings) has emerged in recent years. It has been proposed as a potentially successful primary care model to enable European health systems to meet the four "health 2020" identified priority areas for policy action [3]:

1. investing in health through a life-course approach and empowering people;
2. tackling major health challenges of non communicable and communicable diseases;
3. strengthening people-centred health systems, public health capacity and emergency preparedness, surveillance and response;
4. creating resilient communities and supportive environments.

The CHC model is a primary care model that seeks to meet the health care needs of a community and to improve patient and staff experiences, outcomes, safety, and system efficiency [6-9].

Although it is difficult to provide a single definition for the CHC model, the its core principles can be summarized as following: team-based care; patient-centred orientation throughout the life course; enhanced access to care, comprehensiveness of care, care coordination and/or integration across all elements of the health care and welfare systems, quality and safety benchmarking through evidence-based medicine and clinical decision support tools, enhanced care availability after hours [6, 7, 10]; striving to deliver effective quality care while attempting to reduce costs [11-13].

The CHC model – conceptualized for the first time in the United States where it has been progressively consolidated over the last decades in different States and for different providers under the name of Medical Home model [14] – has recently been transferred and implemented in Canada [15] as well in several European countries, including Italy.

Within the Italian National Health System (Sistema Sanitario Nazionale, SSN) primary care is comprised among the core benefit package of health services to be guaranteed to all citizens ("livelli essenziali di assistenza" or LEA). Regions are responsible for planning, financing, and implementing healthcare services, including primary care. In 2007 the The Italian Ministry of Health identified the implementation of the CHC model as a priority objective to strengthen the Italian primary care system [16]. In this context, a dedicated €10-million fund was allocated to support Regions in the implementation of experimental CHC regional projects. The CHC national fund was included in the 2007 National budgeted law and was accompanied by national CHC guidelines. In the guidelines CHC were defined as "physical places and – at the same time – active and dynamic centres for health and well-being for local com-

Box 1

Community Health Centres' National Guidelines

The Ministry of Health [16] states that Community Health Centres have to:

- guarantee continuity of care and treatment for 24 hours and seven days a week
- ensure a single point of access for citizens to the network of available health and social services
- work in team, following the Districts' Program of Activities (PATD), the Social Plan Zone (PSZ) and the Integrated Plan of Health (IPH)
- promote patients empowerment and citizens' participation
- promote the collaboration between doctors and other healthcare and social professionals
- foster communication strategies [19]
- promote life-course prevention programmes
- strengthen the integration of home care, the hospital and territorial continuity and the social system
- carry out internal and external assessments and evaluations
- promoting health communication at the level of the therapeutic relationship physician / operator / patient, at the level of communication between the structures and level against the citizens and public opinion
- provide opportunities for continuing education for healthcare professionals [20]

munity that collect citizens' demand for healthcare and supply it in the most appropriate way in time and space" (see Box 1) [16]. Several Italian Regions have engaged in the planning and implementation of CHC projects, including Tuscany, Piedmont, Lombardy, Marche, Lazio, Campania and Emilia-Romagna [17]. However, CHC projects vary widely between Regions in terms of means, scope and timing. Only selected Regions – namely Tuscany and Emilia-Romagna – transferred the CHC national guidelines into Regional plans, while other Regions adopted fairly different primary care and chronic care models, some regions being only at an early stage of projects' planning [18].

Objectives

Aim of the current study is to report and analyse the implementation of the CHC model in the Italian Region Emilia-Romagna; recalling key regional legislative steps and operational guidelines and presenting the state of art of the CHC regional project in terms of: number and types of running CHCs, demand and supply of healthcare services and involved personnel.

In addition, we aim at outlining characteristics, strengths and limitations of the Emilia-Romagna CHC model relative to other settings and at proposing a priority research agenda to assess and evaluate the CHC model's effectiveness in improving clinical, economic and social outcomes – and ultimately individuals' and communities health and well-being.

METHODS

We report on the implementation of the CHC project in the Emilia-Romagna Region. We first set the scene describing the Emilia-Romagna study setting in terms of population and organization of Regional healthcare ser-

vices. We then recall the regional legislative steps that enabled the CHC project to be approved and implemented and the regional guidelines that describe the prosed regional CHC model. In a third section we carried out descriptive analysis providing pooled and updated data on:

- the ratio running/planned CHCs by Local Health Authority (LHA) and over time;
- the characteristics of running CHCs;
- the network of healthcare professionals working in the CHCs including: general practitioners, family paediatricians, nurses and other healthcare and non-healthcare personnel;
- access to healthcare (CHC management, health communication and training programmes);
- range of offered healthcare services and social-healthcare related services, including communication and health education programmes.

Data come from the regional CHC project monitoring and evaluation flow that collects – through validated questionnaires – relevant data from each LHA of the Emilia-Romagna Region [21]. Monitoring and evaluation data – whose latest update is available through March 2015 – are usually compiled in an annual report issued in Italian by the Health Department of the Regional Health Authority [22].

RESULTS

Study setting

The Emilia-Romagna Region covers an area of 510 273 km² and represents 7% of the Italian population with a total population of 4 450 508 (as of 16th November 2015), of which the 22% (n. = 989 826) is over sixty-five years of age.

The regional healthcare system is divided into eight Local Health Authorities (LHAs) and 38 Districts, the population distribution by LHA is reported in Figure 1. Romagna is the LHA with the largest population (1 126 039 residents, 25% of the total regional population), followed by the Bologna LHA (20%), the smallest being Imola LHA (3%).

Community Health Centres (Case della Salute) in Emilia-Romagna: regional guidelines

In 2010 the Emilia-Romagna Regional Council of the Regional Health Authority issues the resolution n. 291/2010 containing regional CHC guidelines “Community Health Centres (Case della Salute): regional indications for the construction and functional organization”, a guidance document for LHAs to harmonize the planning, building, organization and management of CHCs across the region [23].

As stated in the Regional Guidelines, CHCs implementation is a regional health priority: CHCs are intended as centres able to provide citizens with social and health care to comprehensively meet all their health needs.

In the regional plan CHCs are intended as reference points for community’s members to guide them through social and health services as well as healthcare providers of emergency and outpatients services to manage chronic conditions that can be handled without referral to hospital care [23].

In particular, these regional guidelines [23] state that CHCs have to:

- provide citizens with a unique access point to healthcare;

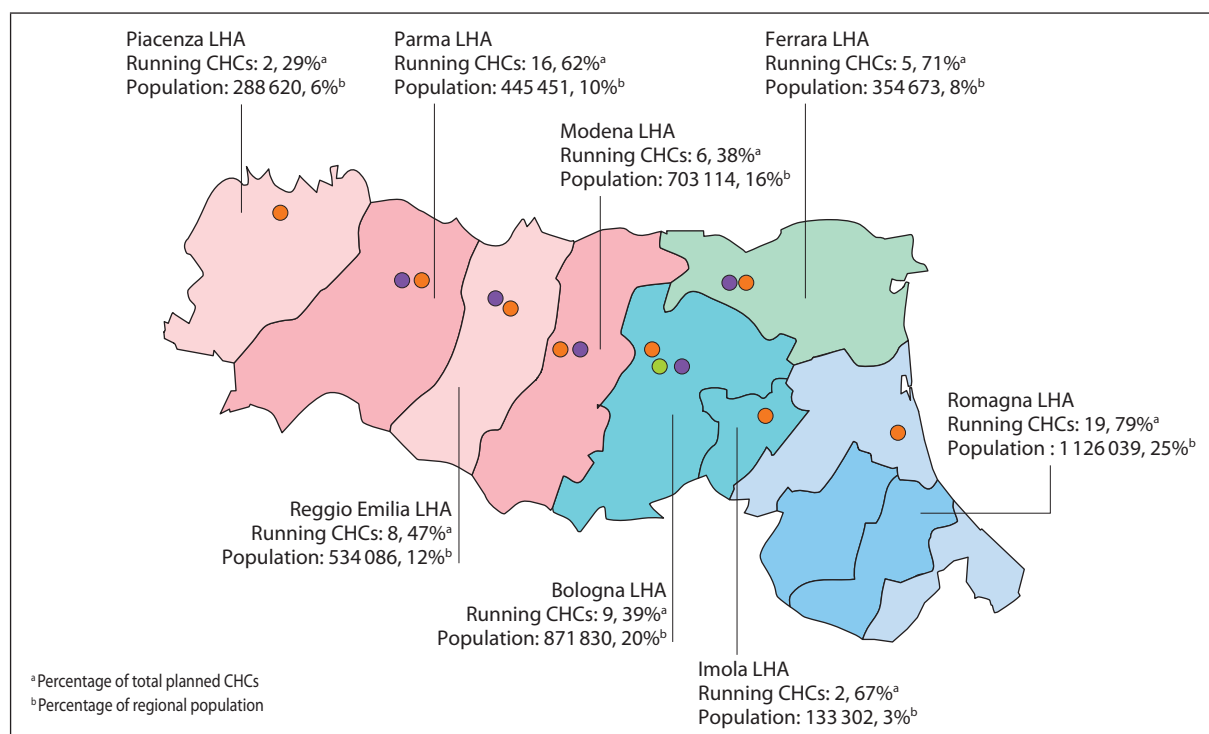


Figure 1

Distribution of total population and Community Health Centres (Case della Salute) in Emilia-Romagna by Local Health Authority.

- guarantee access to care 24 hours a day, 7 days a week;
- organize, integrate and coordinate care and health communication to patients;
- strengthen the integration between hospitals and community care;
- improve integrated care pathways for mental health;
- develop prevention programmes targeting individuals, specific subgroups and the general population [24];
- promote citizens' and patients' empowerment;
- offer training and continuing education to healthcare professionals.

CHCs are managed by the Primary Care Department of the Local Health Authorities (LHAs). Each CHC provides social and healthcare services within the area defined by the different Primary Care Units (PCUs).

The following key features are identified for CHCs in the Emilia-Romagna Region:

- guidance and orientation to available social and health services;
- outpatient healthcare emergency managements;
- diagnostic pathways that can be handled without hospital referral;
- management of chronic conditions through primary and specialist care integration;
- health prevention and promotion.

CHC services are integrated within the regional healthcare system network that includes hospital care, specialist care, mental care and public health.

CHC Regional guidelines also provide indications for CHC construction so that their structural characteristics are in line with the functions and services they have to provide [25]. In particular, each CHC has: i) a public/welcome area, ii) a clinical area for healthcare supply; and iii) a staff area.

Three types of CHC are identified: large, medium and small differing by size and range of social and healthcare supply. The decision of which type of CHC to implement is taken on the basis of the local area characteristics, the density and characteristics of the PCU resident population.

Small Community Health Centres provide primary care services: ambulatory nursing and medical primary care, guarantee access to care 12 hours a day, specialized outpatient clinics and social assistance.

Medium Community Health Centres complement services offered in small CHCs with medical group care, paediatric and obstetric care and emergency medical service. They also offer blood samples service, ultrasound diagnostic service, specialist outpatient care, homecare service coordination, primary prevention services, including vaccines. Medium CHCs have staff meeting rooms.

Large Community Health Centres complement services offered in small and medium CHCs with X-ray diagnostic services, rehabilitation care, family counselling, mental and addiction care, secondary prevention services, including screening. Large CHCs have staff meeting rooms as well as conference rooms to host health education programmes for the general population.

Planning and implementation

There are 67 running CHCs in Emilia-Romagna (update March 2015), of which 26 small (39%), 24 medium (36%) and 17 large (25%). The number of running CHCs increased from 42 in 2011, to 49 in 2012, 55 in 2013 and 63 in 2014 reaching in 2015 55% of total planned CHCs ($n = 122$). The percentage (%) distribution of total regional and running Community Health Centres by Local Health Authority is reported in Figure 2; the highest share of planned CHCs is in the Parma (21%), Romagna (19%) and Bologna (19%) LHAs, this figures being only partially mirrored by the percentage distribution of running CHCs.

The number of running CHCs by CHC type (Table 1) and by LHA is reported in Figure 1, both in absolute values and as percentage (%) of total planned. The highest number of running CHCs are in the Romagna ($n = 19$) and in the Parma ($n = 16$) LHAs, which also are among the ones with the largest share of large type CHCs (31,6% and 31,3%, respectively). When consid-

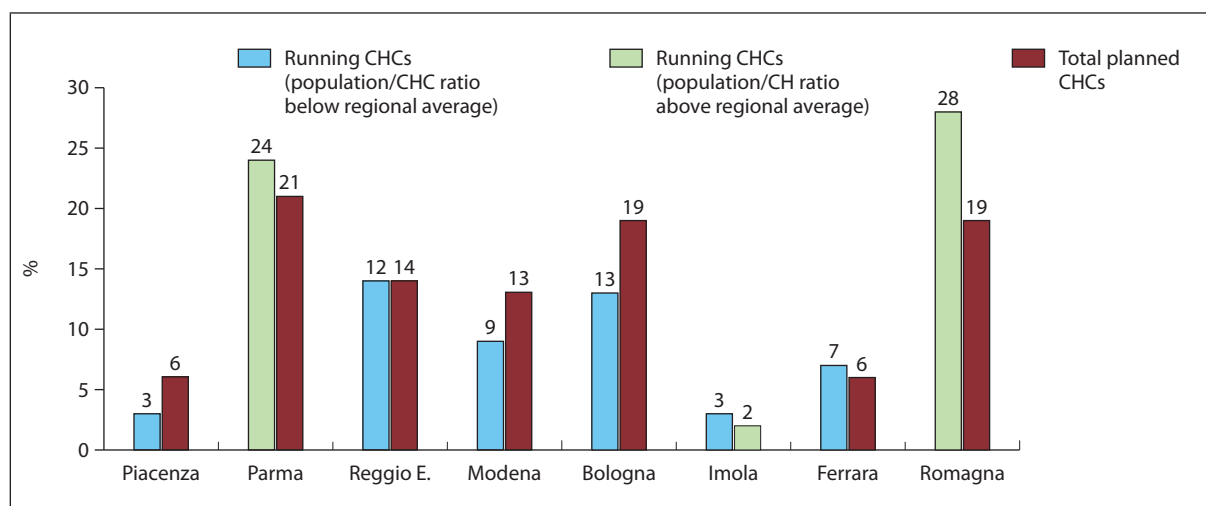


Figure 2
Percentage (%) distribution of total regional planned and running Community Health Centres (*Case della Salute*) by Local Health Authority.

Table 1

Distribution of Community Health Centres (Case della Salute) by Local Health Authority and by type

Local Health Authority	Population	CHC Type			Total CHCs (%) ^b	Population/CHC
		Small (%) ^a	Medium (%) ^a	Large (%) ^a		
Piacenza	288 620	1 (50)	1 (50)	-	2 (3)	144 310
Parma	445 451	6 (37.5)	5 (3.3)	5 (31.3)	16 (23.9)	27 841
Reggio Emilia	534 086	7 (87.5)	1 (12.5)	-	8 (11.9)	66 761
Modena	703 114	4 (66.7)	1 (16.7)	1 (16.7)	6 (9)	117 186
Bologna	871 830	2 (22.2)	6 (66.7)	1 (11.1)	9 (13.4)	96 870
Imola	133 302	1 (50)	1 (50)	-	2 (3)	66 651
Ferrara	354 673	1 (20)	-	4 (80)	5 (7.5)	70 935
Romagna	1 126 039	4 (21.1)	9 (47.4)	6 (31.6)	19 (28.4)	59 265
Emilia-Romagna	4 457 115	26 (38.8)	24 (35.8)	17 (25.4)	67	66 524

^a % of total LHU CHCs; ^b % of total regional CHCs.

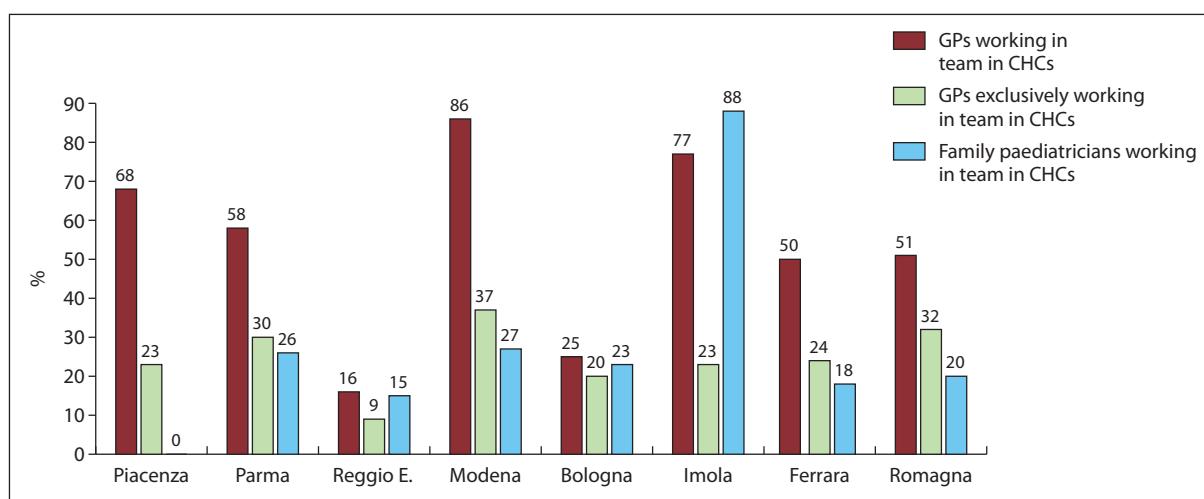
ering the ratio population/CHC, overall in the region there are 66 524 residents per CHC with the highest value in the Piacenza LHA (14 4310 inhabitants per CHC) and the lowest in Parma LHA (27 841 inhabitants per CHC). All LHAs have at least a small type CHC, while three LHAs do not have any large type CHC (Piacenza, Reggio Emilia and Imola). 58 CHCs are located in municipalities with less than 50 000 residents; while 9 CHCs are located in towns with more than 50 000 inhabitants (Parma, Reggio Emilia, Bologna and Ferrara). In most cases the CHCs' catchment area corresponds to the PCU area.

Access to care, workforce, management and healthcare supply

16% (n. = 483) of total regional general practitioners (GPs, n. = 3048) and 8.4% (n. = 52) of total regional family paediatricians (n. = 620) work in team in CHCs. Among GPs working in team in CHCs 55% (n. = 267) work exclusively in CHC. *Figure 3* reports the percentage (%) of GPs and family paediatricians working in

team in CHCs over total GPs and family paediatricians working in CHCs' catchment areas by Local Health Authority. With regard to GPs the highest percentage is in Modena LHA (86%), followed by Imola LHA (77%). When only considering the share of GPs exclusively working in CHCs, percentages are lower, the highest being Modena LHA (37%), followed by Romagna LHA (32%) and Parma LHA (30%). With regard to family paediatricians: in the Imola LHA 88% work in team in CHCs, this percentage not exceeding 30% in any of the others LHAs.

Table 2 summarizes the availability of specialist care in Emilia-Romagna CHCs; the more largely available specialist services are Cardiology, available in the 81% of running CHCs, Ophthalmology (76%), Dermatology (61%) and Otolaryngology (51%). In terms of prevention, vaccination centres are available in 68% (n. = 46) of CHCs, while screening services are provided in 61% of CHCs (n. = 41) for cervical cancer screening, in 25% (n. = 17) for breast cancer screening and in 48% (n. = 32) CHCs for colon cancer screening.

**Figure 3**

Percentage (%) of general practitioners (GPs) and family paediatricians working in team in CHCs, over total GPs and family paediatricians working in CHCs' catchment areas, by Local Health Authority.

Table 2
Availability of specialist care in Emilia-Romagna Community Health Centres in Italy*

	N. of CHCs	(%)
Cardiology	54	81
Ophthalmology	51	76
Dermatology	41	61
Otolaryngology	34	51
Diabetology	28	42
Obstetrics and gynecology	28	42
Physiatric and physical medicine	27	40
Dentistry	25	37
Orthopedics	24	36
Urology	21	31
Neurology	19	28
Surgery	14	21
Endocrinology	14	21
Psychiatry	14	21
Pneumology	10	15

*The table only reports medical specialties available in 10 or more CHCs, for a comprehensive list please refer to Report Emilia-Romagna [22].

In more than half of CHCs (64%, n. = 43) work between 1 and 5 nurses (this only taking into consideration nurses exclusively working in CHCs). Overall in the region, 93 midwives work exclusively in 54 (81%) CHCs; other 1398 non-medical professionals work exclusively in CHCs. Most of the CHCs (94%) provide continuous access to healthcare care from Monday to Friday; in ten CHCs (15%) access is from Monday to Saturday.

Survey data reports that 85% (n. = 57) of CHCs have a coordinator; in the majority of cases he/she being a manager physician of the Primary care Department or and manager nurse. 35 CHCs (52%) have a coordinator of the nursing care, in addition to the general coordinator.

86% of CHCs (n. = 58) has an information/reception point in the public area, managed by CHC's staff in the majority of cases (66%) or volunteers' associations or both. The information/reception point is the reference point for a number of different functions: reference point and meeting place for users; a meeting point for staff, interface between the staff and visitors. The majority of CHCs (82%, n. = 55) implement communication strategies and programmes targeting the general population using printed materials, traditional and new media, but also organizing seminars, meetings and workshops targeting the community and involving local authorities. In 31 CHCs (56%) multilingual information materials are available. 82% of CHCs reports to have activated training activities and continuous education initiatives for healthcare and non-healthcare professionals focusing on team-based and group care.

DISCUSSION

We present updated data on the implementation of the CHC primary care model in the Emilia-Romagna

Region. Since the CHC project was approved by the Regional Council in 2010, 67 CHCs have been put in place in the Region (update march 2015), this corresponding to 55% of the 122 planned CHCs. The percentage of running CHCs on total planned ones is highest in the Romagna LHA (83%) and lowest in the Piacenza one (29%). The number of running CHCs has increased by – on average – 12 % per year in the period 2011-2015. At the regional level, on average, there are 66 524 inhabitants per CHC (not taking into account CHC type), this ratio being highest in the Piacenza LHA where there are 144 310 people per CHC and lowest in Parma LHA that has one running CHC per 27 841 population. Of the 67 running CHCs, 23% are large, 28% are medium and 49% are small. Overall, 45% of total GPs and 23% of total family paediatricians working in Emilia-Romagna have their practice in CHCs, although – within GPs – only half of them work exclusively in CHCs.

Several different CHC model definitions have been proposed. When implemented – CHCs' functions, features and characteristics might also vary widely by setting, by health systems, by social and political context and by resources availability. CHCs projects are being implemented also in other Italian regions: in Tuscany a CHC project was approved by the Regional Council in 2012, which transposed national guidelines into regional ones and planned the activation of 120 CHCs (32 are currently running) [25, 26]. In Piedmont after an initial endorsement of a CHC project, the region is focusing on primary care centres – established in renewed, already existing health facilities – where services are integrated with specialist care. In Lombardy the CreG (Chronic Related Group), is a project in which the GPs' teams work applying the chronic care model. Other regions including Marche, Lazio and Campania are transferring Emilia-Romagna's CHC-based best practices as they are planning to implement CHCs in the near future [18].

Evidence on CHC model implementation is also available from selected European countries. In France CHCs were introduced in 2007 with the aim of improving primary care quality and efficiency. As of 2012 there are 235 operating CHCs and about 450 planned to be established [27, 28]. The majority of them (80%) are located in rural areas (80%). At the country level, 2650 health professionals work in CHCs, including 750 physicians [27]. In the UK, since 2000 primary care group practices – with an average catchment area of 330 000 population – are integrated into the networks of Primary Care (Primary Care Trust, PCT). At the country level, 80% of primary care is provided through team-based action in which great responsibility is transferred to nurses [27]. In Belgium, CHC model have been implemented fairly recently: in 2008, there were 99 CHCs in the country, covering 188 787 patients, this corresponding to 1.5% of the total population. CHCs in Belgium group together multidisciplinary professionals: GPs, nurses, social assistants, physiotherapists and psychologists [29]. A recent study conducted in Belgium compared the quality of care offered by CHCs with care offered by traditional individual practices.

This study concluded that CHCs were more likely than individual practitioners to adhere to evidence-based clinical practice guidelines, prescription were reported to be more appropriate in CHCs, influenza-vaccination coverage for target groups to be higher and, diabetes follow-up showed better clinical outcomes [30].

Our study has both strengths and limitations. To our knowledge is the first study to present the Italian CHC primary care model and assess its implementation using comprehensive and updated regional data. However, we acknowledge that we limit our analysis to a descriptive approach without comparing the Emilia-Romagna model with other regional models. In addition, the available data are still incomplete and do not allow to derive a comprehensive and detailed picture of the social, clinical and preventive services supplied in CHCs. Not only it would have been interesting to present data on the characteristics of the population accessing CHCs in Emilia-Romagna, their social determinants and health needs, but also on the impact that the CHC model has on improving patients' health and social status, healthcare experience and health behaviours.

CONCLUSION

Considerable political will and operational efforts have been devoted in recent years to promote the CHC primary care model in the Emilia-Romagna Region. As a result of this, the number of operating CHCs has progressively increased since 2011 as well as the range and availability of healthcare and social services supplied, the share of healthcare and non-healthcare personnel involved, the offer of health education programmes,

training activities and communication campaigns. Preliminary results suggest that CHCs are a successful and innovative model to provide evidence-based care, to foster primary care's quality and efficiency and to reduce healthcare direct and indirect costs [31]. As the CHCs-based primary care model is consolidating in Emilia-Romagna, more research is needed to assess its impact on improving clinical and economical outcomes, patients' empowerment and healthcare workers knowledge and performance [32-34]. In particular, it would be interesting to assess how preventive services, including immunization, are provided in the context of CHCs [35-38] as well as the availability and effectiveness of health promotion and health education intervention targeting at risk subgroups of the population, including migrants [39-40]. A renewed multidisciplinary collaboration, between Regional Authorities, Local Health Authorities, Universities and other research institutions, could fruitfully pursue such a priority objective in the months to come. This would provide solid evidence needed to inform the planning, implementation and evaluation of best practices and efficient healthcare services.

Conflict of interest statement

There are no potential conflicts of interest or any financial or personal relationships with other people or organizations that could inappropriately bias conduct and findings of this study.

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