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Co-producing and co-assessing a new service solution for enhancing health and social care integration: a participatory research protocol

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Abstract

Background This paper describes a study protocol for co-producing and co-assessing a new sustainable and scalable service solution that enhances health and social integration by involving providers and volunteers delivering services for elderly people in the province of Cremona (Italy), where the elderly population will reach 27% in 2023.

Methods This upcoming study involves mixed-method participatory research and is structured in three study phases and related objectives. First, it will co-produce a new, accessible and sustainable service solution using an iterative design and management method, Plan-Do-Check-Act by involving professionals and volunteers of a heterogeneous group of health, social and third sector organizations located in the city of Cremona (Italy). Second, the study protocol will co-assess the outcomes of the new service solution using a mixed-method approach for measuring the outcomes on: professionals and volunteers (*micro level*) and their health, social and third sector organizations (*meso level*). Third, this study will co-investigate the scalability of the new solution promoting health and social integration in other similar urban areas of the Province of Cremona via the Intervention Scalability Assessment Tool (*macro level*). The data will be collected through the analysis of official documents, websites, policies and participatory workshops.

Discussion This protocol proposes an innovative intervention, a novel participatory approach, and an unexplored scalability assessment tool in the context of health and social care integration. This study aims to support professionals from health and social care service providers and volunteers from third-sector organizations to collaborate and integrate each other's resources. In doing so, the participatory approach will facilitate the co-creation of an effective response to the need of health and social integration, and the development of trustful relationships between health and social care service providers. Moreover, the adoption of Plan-Do-Check-Act and Intervention Scalability Assessment Tool will ensure the quality, scalability and sustainability of the new service solution in other settings.

Keywords Caregiver, Community care, Cocreation, Co-design, Network, Aging, Health policy, Quality improvement, Scalability

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Background

In recent years, the increasing aging population and chronic diseases have created a wide range of needs that are difficult for a single service provider to address [1]. This difficulty is currently sharpened by the shrinking of clinicians, nurses, and other health and social care workers [2]. In Italy, the average number of nurses, physicians, midwives, and healthcare assistants is much lower than average, with only 11 full-time employers per 1000 people. While the number of doctors is still in line with the average of OECD countries (4 practising doctors per 1 000 population), this number is expected to worsen since Italy is the country with the highest rate of doctors aged 55 or older [3]. Within this scenario, a possible solution for care providers is establishing cross-sectoral collaborations by following the guiding principle of integrated care [4].

Health and social care integration aims to develop "joint approaches between health and social care partners that can promote more positive and cost-efficient outcomes" [5]. The organizations joining this collaboration include not only formal health and social providers but also third sector organizations and other informal forms of collective citizenship. The crucial role of these informal actors has started to be emphasized after the COVID-19 pandemic, when the demand for healthcare services increased so dramatically that healthcare systems were forced to rely on external support [6]. From this painful experience, governments have started to establish or reinforce existing networks composed of health, social and third sector organizations that collaborate with each other in caring for citizens, especially the elderly ones. Indeed, elderly people usually share complex and multi-dimensional needs that require the support of several service providers belonging to the health and social sectors [7]. Although the relevance and effectiveness of health and social care integration is not a new practice in developed countries [8], its adoption is limited and discontinuous [9, 10] and remains so even after COVID-19 [11]. There are several factors related to the characteristics of the network, its management and context that can hinder the integration mechanism [12, 13]. The lack of a common professional background, communication, trust, collective interests, leadership and coordination are the most recurrent barriers in the healthcare literature [14]. Health, social and third sector organizations are usually reluctant to create partnerships because they do not know each other or, when they do, they encounter many problems due to great differences in terms of working culture and strategic interests [15].

This study protocol considers *collective co-production* as a viable and effective approach to overcome these barriers and enhance health and social care integration. Collective co-production occurs when "one or more state actors work directly and simultaneously with several lay actors to address one or more related issues" [16]. Recent research has revealed that this approach can have several positive effects on participants [17]. By forcing formal and informal organizations to collaborate toward a common and shared societal issue, collective co-production facilitates the creation of links and trustful relationships between different groups of professionals and volunteers [18]. Moreover, in the medium-long run, it can increase health outcomes, patient satisfaction, service innovation and cost efficiency [19].

This paper describes the study protocol for co-producing and assessing a new sustainable and scalable service solution that enhances health and social integration by involving providers and volunteers delivering services for elderly people. Specifically, the objectives of this study protocol are as follows: (1) co-produce a new, accessible and sustainable service solution that can support professionals and volunteers in providing a comprehensive response to the needs of elderly people and their caregivers; (2) co-assess the effects of the new solution on professionals and volunteers who will join collective co-production (*micro-level*) on the organizations involved (*meso-level*); and (3) co-investigate the scalability of the new solution in other similar urban areas (*macro-level*). In doing so, this study will involve a heterogeneous subgroup of health, social and third sector organizations that deliver care for elderly people and their caregivers in the province of Cremona (Italy). This focus will allow us to clarify the boundaries of the research and identify a reasonable subset of care providers. We chose this setting because the need for an innovative and effective solution to the health and social care fragmentation is very high. Indeed, the Italian government has recently attempted to strengthen health and social care integration at the community level by valuing the role of third-sector organizations with a new national reform [20]. However, the Lombardy region (where Cremona is located) has implemented integration in only 19 out of 70 cases since the launch of the new reform [21]. In addition, Cremona is one of the provinces of Lombardy with the highest percentage of elderly people (27% of elderly people over 65 years old) and, thus, one of the provinces with the highest priority of integrating health and social care services [22].

This research will provide policy-makers with a new possible service approach for promoting the integration of health and social care services by valuing the dialogue, inclusion and creation of trustful relationships between formal and informal entities that are involved in caring for elderly people. Moreover, this study will contribute to addressing the open health priorities by suggesting a new possible solution for enhancing health and social care integration [23]. Finally, it will address open gaps in the academic literature. First, it will reveal to what extent

collective co-production can create innovative, sustainable and scalable service solutions, especially in the healthcare sector, where its adoption is widespread but its effects are largely taken for granted [19, 24–27]. Second, it will explore the effectiveness of Plan-Do-Check-Act, whose success is still under-investigated [28]. Last, it will apply an innovative tool for assessing the scalability and sustainability of the new intervention in similar settings, opening new avenues for future research on this new tool's suitability [29].

Methods

This upcoming study is a mixed-method participatory study structured in three study phases and related objectives, centering on heterogeneous subgroups of health, social and third sector organizations that provide care for elderly people and their caregivers in the province of Cremona (Italy).

Phase 1: co-production of the new, accessible and sustainable service solution

Objective

This first phase aims at co-producing a new, accessible and sustainable service solution. This is addressed through an iterative design and management method, the Plan-Do-Check-Act (PDCA) [30, 31], by involving professionals and volunteers of a heterogeneous group of health, social and third sector organizations located in the city of Cremona (Italy). At the end of this phase, the new service solution will be launched, and the pilot will start.

Design and data collection

The PDCA method is organized into four steps: plan, do, check, and act. The first step (i.e., *plan*) aims to draft a possible service solution that can support organizations in enhancing health and social care integration. Following the double-diamond model [32], two workshops involving local volunteers, health and social professionals will be organized and structured into two main subphases. In the first subphase, researchers will collect and prioritize the difficulties that participants will face in assessing elderly individuals and their caregivers' needs. In the second subphase, participants will be asked to ideate possible service solutions by referring to the most urgent difficulties that will be pinpointed in the first phase and select the most promising one. In the *Do* step, the draft service solution that will emerge from the first two workshops will be prototyped by the research team. Then, in the *Check* step, two other workshops involving professionals and volunteers will be organized to review the service prototype and increase its effectiveness. As for the previous workshops, these two workshops will also be arranged into two subphases following the double-diamond model [32]. In the first subphase of the workshops, we, acting as researchers, will present the prototype to all the professionals and volunteers who join the previous two workshops and will ask them feedback and opinions about its innovativeness, accessibility and sustainability. In the second subphase, we will encourage professionals and volunteers to ideate possible changes and improvements that can enhance the innovativeness, accessibility and sustainability of the new service prototype. In the last step (i.e., *Act*), the changes and improvements will be applied to the service prototype, finalizing its implementation. Following the iterative logic of the PDCA method, two other cycles will be implemented in the following year for assessing and improving the first pilot and for evaluating its scalability to other similar territories, as reported in the following paragraphs.

The first cycle of the PDCA method that will be implemented for finalizing the new service solution is synthesized in the Fig. 1.

Recruitment

The snowballing technique will be used to recruit volunteers and health and social professionals involved in delivering services to elderly people and their caregivers in the city of Cremona. In particular, we will start to involve the third sector, healthcare and social organizations and institutions that have strong collaboration experience in the sector within the city of Cremona, where the pilot will be launched. The initial set of actors involved are reported in Table 1. Then, we will ask this initial set of actors to involve other organizations and institutions that might be interested in the research project. The process will stop when the new organizations and institutions invite actors who are already part of the study. For each organization that will be interested and available in joining the study, two representatives will be invited to join the plan and check steps.

Data analysis

The four workshops of the Plan and Check steps will be recorded and transcribed verbatim. These data will be triangulated with the meeting memos that will be carried out within the research team and the personal notes of researchers who will attend the whole PDCA cycle. To address the first research aim, two independent researchers will carry out the analysis deductively to evaluate the level of innovativeness and sustainability of the new service solution. In doing so, researchers will code the textual information through NVivo 12 software by referring to predefined dimensions. To assess the level of innovativeness, researchers will adopt the four dimensions suggested by Snyder et al. (2016): degree of change, type of change, newness, and means of provision [33]. Instead, the assessment of the level of sustainability will

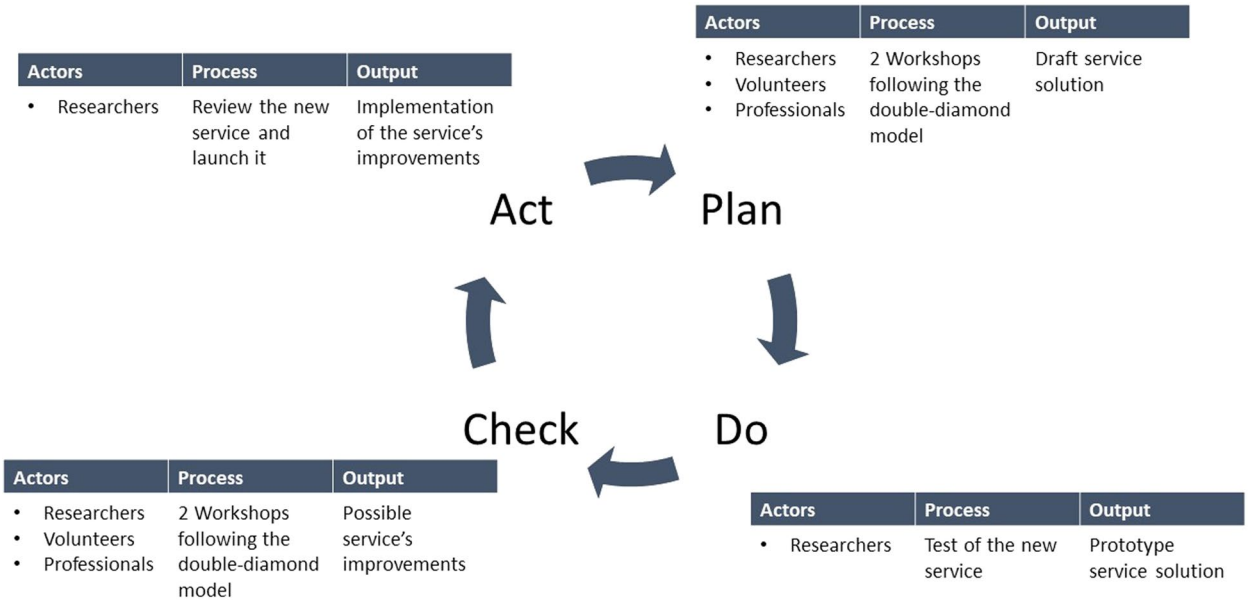

Fig. 1 PDCA cycle for co-producing and co-assessing a new service solution

Table 1 The initial set of actors invited to join the research project

Sector	Name of the actors	Reason for involvement
Third-sector	• Centro di Servizio per il Volontariato Lombardia SUD • Forum del Terzo Settore Cremona, Cremona e Casalasco	Are third-sector organizations that provide services and coordinate all the other third-sector organizations of the city of Cremona
Healthcare	• Azienda Socio-Sanitaria Territoriale di Cremona • Agenzia di Tutela della Salute Valpadana	Are the two public healthcare organization of the city of Cremona
Social	• Municipality of Cremona • Consorzio Sol.Co • Cremona Solidale	While Municipality of Cremona is the only public municipality delivering public social care services, the other two are important private entities that deliver health and social care services in the city of Cremona

be assessed through the framework Moore et al. (2017), which identifies five dimensions: the moment at which the new service is launched, the duration of the service, the level of individual behavior change, the level of change in the service and individual behavior, and benefits over time for individuals and the service network [34]. The results of the coding will be compared between the two researchers and with the other sources of information. Any inconsistency will be discussed and addressed by the research team who joined the PDCA cycle [35].

Phase 2: co-assessment of the new service solution at the micro and meso levels

Objective

The second phase aims at co-assessing the outcomes of the new service solution using a mixed-method approach. The framework of Beirão et al. (2016) will be used as a guideline for identifying the main dimensions of outcomes [36]. In particular, we will measure outcomes for professionals and volunteers (at the *micro level*) and for their health, social and third sector organizations that will be involved in Phase 1 (at the *meso level*).

Design and data collection

At the *micro level*, we will assess professional viability through a survey involving volunteers and health and social care professionals who will experience the new service pilot. The survey assesses to what extent (*i*) the capacity to inform elderly people and their caregivers about the care service offering and (*ii*) the level of knowledge about the care service offering of professionals and volunteers have changed over time. The first dimension gathers the expected level of appropriate information given by professionals about the existing service offering (i.e., efficiency), while the second dimension assesses the expected level of accuracy provided by professionals when informing elderly individuals and their caregivers about the existing service offering (i.e., effectiveness) [36]. Each dimension will be assessed through three ad hoc survey questions. We will submit the survey before the involvement of volunteers and professionals in the service pilot (T0) and after the conclusion of the pilot on the same sample (T1). The survey is anonymous because

identifying the identity of the respondent will not be possible.

At the *meso level*, we will assess the level of organizational viability using a survey and workshops involving two representatives for each health, social and third sector organization that will join the pilot [36]. The survey assesses to what extent (*i*) the number of collaborations and (*ii*) the level of integration between organizations have changed over time. Both dimensions will be investigated by using the Collaboration Scale [37]. The first dimension will assess the organizations' capacity to strengthen and enlarge their network (i.e., effectiveness), while the second dimension measures the increased organizations' resource usage thanks to the optimization of resources within the network (i.e., efficiency) [36]. We will submit the survey before the involvement of health, social and third sector organizations in the service pilot (T0) and after the conclusion of the service pilot (T1) on the same group of organizations' representatives. The survey was anonymous, as no data about the organization or the respondent were collected. Once the results of the two surveys (micro and meso levels) are systematized (T2), we will organize participatory workshops to present and discuss the results of the survey at the micro and meso levels involving at least two representatives of all the health, social and third sector organizations that will be involved in the pilot. The workshops will be structured into two main sections. The first section aims to collect participants' views on the survey results. The second section aims to assess other dimensions (e.g., cost efficiency and organization management) and possible improvements for improving the success of the new solution in the future.

Recruitment

The survey at the *micro level* will involve the volunteers, health and social care professionals of the organizations that join the pilot. Instead, the survey and workshops at the *meso level* will target at least two representatives for each organization that will join the pilot.

Data analysis

The descriptive statistics of the survey and the quantitative data about the new service will be obtained. The results of this analysis at the micro- and meso-levels will be presented and discussed during the workshops. The workshops will be recorded and transcribed verbatim. The transcripts will be coded by two independent researchers using an abductive approach and NVivo v.12 software [38]. More precisely, the two researchers will start applying the existing theoretical framework of Beirão et al. (2016) to transcripts, highlighting any issues related to the framework's capacity to explain the empirical observations. The emerging 'deviating observations' will be explained and discussed through 'the creative iterative process of theory matching' that aims at refining and mixing the prior theoretical framework with other theories [39]. The results of the coding analysis will be compared and discussed within the research group.

Phase 3: analysis of the scalability of the new solution in other similar contexts (macro level)

Objective

The third and last phase aims at co-investigating the scalability of the new solution promoting health and social care integration in the Province of Cremona (*macro level*), which shares similar services and providers of the city of Cremona. The assessment of the pilot scalability will be carried out using the Intervention Scalability Assessment Tool (ISAT) [29].

Design and data collection

Following the ISAT, we will adopt a two-step approach. First, we will gather information about two potentially similar municipalities in the province of Cremona, using data and information from open databases (e.g., Istat.it, Dati.gov.it, and Datiopen.it), websites, balance sheets, and local policies. For the two contexts, we will fill the first section of the ISAT by stating (i) the level of health and social care integration of the context, (ii) the objectives, methods and activities of the new service solution in the new context, (iii) the potential influence of the local government, industry and other players on the new service solution, (iv) the level of evidence of the new service solution's effectiveness, and (v) the potential costs and benefits in the new context [29].

Then, we will involve the actors of the two target contexts for discussing and assessing the scalability of the new service solution. In particular, we plan to invite the references of the main third sector, healthcare, and social organizations to a participatory workshop (one for each target context). During the first part of the workshop, we, acting as researchers, will present the preliminary assessment carried out through the first section of the ISAT. During the second part of the workshop, we will open a discussion, encouraging participants to provide their opinions on the new service solution and its applicability in their context. This step is fundamental to complete the assessment of new service solution by using a macro perspective (macro level). In particular, we will collect information about (i) possible changes that will be necessary for implementing the new service solution, (ii) the level of possible acceptability of the new solution, (iii) the resources and infrastructures needed for delivering the new solution, and (iv) the level of sustainability of the new solution in the medium-long run [29].

Recruitment

In each workshop, we will invite the references of the main third sector, healthcare, and social organizations that are located in the two target contexts. To do so, we will choose the organizations with the greatest number of professionals/volunteers and the greatest presence in the target contexts.

Data analysis

The workshops will be recorded and transcribed verbatim. The transcripts and the documents will be coded by two independent researchers to collect all the information needed to complete the ISAT. Thus, the coding approach adopts a deductive approach that uses the dimensions and subdimensions of the coding matrix and the domains and subdomains of the ISAT [38]. The two assessments of the scalability of the new solution in the two target contexts will be shared with the workshop participants for final validation.

Discussion

This study protocol outlines a possible approach to the existing challenges that service providers and third-sector organizations are facing when integrating health and social care services [40]. By conducting a *participatory approach*, the design and implementation of the new service will take into account the needs and preferences of the professionals and volunteers of the health, social, and third-sector organizations that will be involved. This will help researchers in designing an effective, acceptable and user-friendly solution that will be capable of supporting professionals and volunteers in assessing elderly individuals' and caregivers' needs and addressing them to the most suitable services [41, 42]. Moreover, workshops will create occasions for interactions between representatives of different organizations [43]. This will raise the awareness of each other's organizations and will facilitate the establishment of trustful relationships, which are the fundamental ingredients for facilitating health and social care integration [44]. The adoption of *mixed-methods* will support researchers in dealing with the complexity of involving several actors in different phases of the service life cycle [45]. While qualitative methods (e.g., participatory workshops) will provide useful insights from service providers' representatives, quantitative methods (e.g., surveys) will help researchers reach a large number of users of the new service solution. Furthermore, the *PDCA approach* will ensure good quality of the new service solution, as it fosters a culture of continuous improvement thanks to periodic moments of planning and reviews [46]. The involvement of volunteers and professionals from different organizations in the PDCA will make these periodic moments even more effective, as participants will provide inefficiencies and corrective actions using multidisciplinary perspectives [47]. In addition, the *ISAT tool* will guarantee an objective and effective assessment of the scalability of the new service solution in other similar urban contexts. Finally, the output of this study, i.e., the new service solution, will provide a relevant practical contribution by bridging the gap between fragmented service offerings and the necessity of providing a comprehensive response to elderly people and their caregivers' needs.

The innovativeness of this study protocol is guaranteed by three main aspects. First, it adopts a participatory approach in the design, assessment and scalability of the new service solution. The involvement of professionals and volunteers is usually limited to only one phase of the service life cycle [17]. Second, this study investigates the relationships between the PDCA approach and the effectiveness of the new service solution. Although the PDCA approach has been widely studied and applied in the healthcare literature, the relationship between PDCA and its effectiveness in the healthcare system is still unexplored [28]. Third, the adoption of the ISAT will be, to the best of our knowledge, the first attempt to adopt this innovative tool and thus test its suitability and usability in the healthcare context [29].

In conclusion, this study will provide a new approach and an effective and scalable service solution that can help health and social organizations in tackling the issue of health and social care integration, especially in countries with public healthcare systems (e.g., Italy), where the level of integration is still ineffective [48]. Moreover, it will help to explore the effects of PDCA and ISAT on the health and social care system, whose benefits have been taken for granted. Finally, it will encourage future studies to involve citizens and providers in the last phases of the service-cycle, which are usually under-explored.

Abbreviations

PDCA method	Plan-Do-Check-Act method
ISAT	Intervention Scalability Assessment Tool

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Authors' contributions

Conceptualization, GG, CM; methodology EG, MS, SM, AM and MP; writing—original draft preparation, EG—review and editing, GG, CM, SM, AM, MS. All authors have read and agreed to the published version of the manuscript.

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Availability of data and materials
No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate
The research protocol was approved by the Ethical Committee of the Università Cattolica del Sacro Cuore on the 20th of June 2024, reference n. 100/24.

Consent for publication
No applicable.

Competing interests
The authors declare no competing interests.

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