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RESEARCH

Organizational response of elderly and homecare sector in Ticino facing the SARS-CoV-2 pandemic outbreak: a case study on Spitex and nursing homes

Santhosh Mannamplackal[1], Evaristo Roncelli[2] and Marco Meneguzzo[1]

[1] Università della Svizzera italiana, CH

[2] Scuola Universitaria Professionale della Svizzera italiana, CH

Corresponding author: Santhosh Mannamplackal (santhosh.mannamplackal@usi.ch)

The ongoing SARS-CoV-2 pandemic is posing colossal pressure on all health systems worldwide. Given the epidemiological features of the virus, the authors aimed at analyzing how the most vulnerable and highly fragmented sector in Ticino reacted from an organizational point of view to a large-scale public health emergency. The present in-depth analysis shed light on two critical aspects: the tardive prioritization of specific strategies aimed at minimizing the risk of infections and, more generally, the lack of coordination between the stakeholders involved. During the first phase of the pandemic outbreak, the priority of the competent authorities was mainly focused to determine the infected people and major efforts were established in strengthening hospital intensive care units. This, however, has placed the elderly and homecare sector in a hazardous position, posing significant inter-and intra-organizational challenges in responding effectively to the unprecedented health emergency.

Keywords: covid-19; elderly; homecare; nursing homes; pandemic response; SARS-CoV-2; Switzerland; Ticino

Die laufende SARS-CoV-2 Pandemie übt weltweit einen massiven Druck auf alle Gesundheitssysteme aus. Angesichts der epidemiologischen Merkmale des Virus analysieren die Autoren, wie der stark fragmentierte Sektor in Tessin auf die grosse Notlage im Bereich der öffentlichen Gesundheit aus organisatorischer Sicht reagiert hat. Die vorliegende Analyse wirft Licht auf zwei kritische Aspekte: eine nachträgliche Priorisierung spezifischer Strategien zur Minimierung des Infektionsrisikos, und ganz allgemein ein Mangel an Koordination zwischen den beteiligten Akteuren. In der ersten Phase des Pandemie-Ausbruchs hatten sich die zuständigen Behörden hauptsächlich auf die Identifizierung von infizierten Menschen konzentriert, und die grössten Anstrengungen wurden in der Stärkung von Intensivstationen in den Spitälern unternommen. Dies hat den Senioren- und Pflege Sektor abseits gestellt, und es hat schwerwiegende inter- und intraorganisatorische Herausforderungen bei der Erreichung einer wirksamen Reaktion auf die beispiellose gesundheitliche Notlage verursacht.

Schlüsselwörter: covid-19; Alten; Heimpflege; Altenheime; Pandemie-Reaktion; SARS-CoV-2; Schweiz; Tessin

La pandémie de SARS-CoV-2 exerce une pression massive sur tous les systèmes de santé du monde. Compte tenu des caractéristiques épidémiologiques du virus, les auteurs ont analysé la manière dont le secteur de la prise en charge des personnes âgées du Tessin, un dès le plus vulnérable et fragmenté, a répondu à l'urgence d'un point de vue organisationnel. La présente analyse met en lumière deux aspects critiques : une hiérarchisation rétrospective des stratégies spécifiques visant à minimiser le risque d'infection et plus en général un manque de coordination

entre les acteurs concernés. Dans la première phase de la pandémie, les autorités compétentes s›étaient principalement concentrées sur la recherche des personnes infectées et les plus grands efforts avaient été déployés pour renforcer les unités de soins intensifs dans les hôpitaux. Cela a laissé le secteur des personnes âgées et des soins à domicile dans une «zone d›ombre» et a créé d›importants défis inter- et intra-organisationnels pour parvenir à une réponse efficace à une urgence sanitaire sans précédent.

Mots-clés: covid-19; âgé; soins à domicile; maisons de soins infirmiers; réponse à la pandémie; SRAS-CoV-2; La Suisse; Tessin

1 Introduction

1.1 Rationale

In early 2020, the "Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)" has rapidly spread throughout the world, and Switzerland was no exception.

As of January 30, 2020, the World Health Organization (WHO) declared the *SARS-CoV-2* as a public health emergency of international concern and, on March 11, 2020, the same institution declared the virus outbreak a pandemic. At the time of writing, the infectious disease caused by SARS-CoV-2, which is the Coronavirus disease 2019 (COVID-19), infected 188 countries and 37.554.022 people. The largest number of confirmed cases was reported in the United States of America and India, that is respectively 7.762.809 and 7.120.538. By October 12, 2020, the US recorded 214.771 deaths, followed by Brazil with 150.488 and India with more than 109.000. (John Hopkins University & Medicine 2020; Worldometer 2020).

In Switzerland, the first reported case was on February 25, 2020, in the southern canton of Ticino, which subsequently led to a rapid surge of the virus in the territory. As of October 12, 2020, the total number of cases in Switzerland was 260.063, and 13.048 in Ticino. The COVID-19 mortality risk in Ticino, especially for people aged 80 years or more (who represent the main service users within the elderly and homecare sector in the canton) was the highest among all age groups; Verity et al. (2020) estimated a death rate of 14.8% for people aged 80^{+}, while the percentage was even higher for people suffering from other pre-existing diseases, such as in particular hypertension and diabetes (Guan et al. 2020).

According to the World Health Organization, approximately 50% of deaths in the first month of the pandemic emerged in nursing homes (WHO Regional Office for Europe 2020); in Ticino, on April 24, 2020, there were 136 COVID-19 related deaths in nursing homes out of a total of 299 (45.5%).

The canton of Ticino was the third elderly and homecare sector in temporal order in the world to have to deal with COVID-19 disease (after China and Italy) (Repubblica e Cantone Ticino, 2020c). As a pioneer, the sector had to cope with the situation with a lower amount of information at its disposal and a higher degree of improvisation. This path demonstrated the immediate and unplanned reaction to a pandemic situation. In analyzing the immediate and natural response to the pandemic situation in the elderly and homecare sector in Ticino, the knowledge gained could be helpful, which could include recommendations at how to develop a more effective and efficient response system. The high contagiousness and dissemination of the virus, as well as the large number of asymptomatically infected people, posed a major challenge (Arons et al. 2020): this has inevitably elevated the care of elderly (both in the nursing home and homecare settings) to a strategic and highly sensitive component with respect to the response to SARS-CoV-2 pandemic outbreak within the entire healthcare system of the canton of Ticino.

The main objective of this paper is to describe the organizational response to the SARS-CoV-2 pandemic outbreak of elderly and homecare sector in the canton Ticino between February and May 2020, to include a few pointers for dealing with future potential large-scale public health emergencies. The authors will analyze the decisions taken by the administrators of selected nursing homes and homecare services of public interest, in order to limit the spread of the virus within the organizations and to ensure the quality of care for the users during this critical period of time.

Certain findings from this case study have been already presented within the national research program called Swiss Learning Health System (SLHS). One important goal of SLHS is represented by the development of evidence syntheses in order to strengthen the health system in Switzerland, by turning it in a more responsive system where the scientific evidence is continuously integrated within the system (Boes et al. 2018). The SLHS project is supported by the State Secretariat for Education, Research and Innovation and seven are the academic funding partner institutions involved.

Regional disparities can be seen as a significant advantage in terms of continuous learning. In Switzerland, cantons are responsible for the management of their own health system. Their tasks include the planning of hospitals, nursing homes and homecare services. In addition to that, each canton has to examine and approve authorizations for healthcare professionals, which need to be coordinated and controlled. This allows researchers to exploit the differences generated by the federalist system, in order to to assess the presence of a best-practice that can be implemented in other settings.

1.2 Methodology and structure

The aim of this paper is to discuss the organizational response of elderly and homecare sector in Ticino to the SARS-CoV-2 pandemic outbreak, by presenting a case study.

In order to reach the objective, the authors opted for a qualitative and empirical methodology, that is a case study, which investigates a contemporary phenomenon within a real-life context.

Given the absence of relevant literature on academic databases related to the response of the specific sector to the ongoing pandemic and any other past health emergencies, the paper has been mainly based on institutional guidelines and protocols, and selected media news, which set the basis for structuring and conducting six "on-field" semi-structured interviews with the executive cadres of two nursing homes and two homecare services of public interest, as well as with the coordinator of the Conference of the six non-profit assistance and homecare services of public interest of the canton of Ticino and with a member of the steering committee of the Ticino Society of Geriatric Medicine (STiMeGer).

The discriminating factors in the design of the case study sample were based on two categories. On one hand, the sample characteristics based on which the authors sought to be the most representative for such a pragmatic article: the business size (in terms of users and employees), the ownership, the financing scheme and the geographical position. Based on these characteristics, a second aspect has been taken into consideration for a later stage, specifically the availability factor, which forced the authors to focus only on a limited sample given a situation characterized by high degree of tensions and a scarce availability in participating to the interviews.

The authors are fully aware that, from a scientific point of view, the limited sample could represent major limitations: in particular, the absence within the sample of more operational functions and users. However, it is assumed that all major problems and concerns have been identified in any case by interviews with managers, and that a generalization of the results is still possible due to the choices made based on the characteristics.

The chosen data analysis strategy consisted in the framework analysis, namely using the following "a priori frame" identified by the authors in relation to the research question of the present paper:

- provision of services, collaborations and monitoring aspects;
- human resource management and information flow;
- and logistics.

The paper is divided into three sections. In the first section the authors introduce a theoretical framework, which will allow the reader to have a theoretical contextualization with possible variables that can have an impact on the organizational and managerial response of the sector. In section two, the authors will present the results coming from the interviews and following the theme-based chart presented above: the discussion will be anticipated by a brief introduction to the context that will additionally help the reader to better understand the environment and to get a greater picture of the frameworks in which the interviewed key actors are daily involved. Finally, conclusions will then end the manuscript.

2 Theoretical framework

2.1 Towards a network management approach

Since the Welfare State crisis, the public administration has radically changed, and it had to find new ways to provide public services, given that the environment was becoming even more complex and the citizens' need and expectations were constantly growing; to this end, new governance approaches and models as well as new management tools have been naturally developed over the past 50 years.

During the '80 and early 90s, the New Public Management approach was proposing a context in which the private sector contrasted entirely with the public sector and thereby finding a balance between the redefinition of the government responsibility and the introduction of market logics within the public administration system and highlighting an intra-institutional dimension characterized by a pure consumer

point of view: there was an emphasis oriented towards the market and competition with clear performance indicators and a result-oriented approach. Therefore, for the first time, the public administration oriented its provision of services towards objectives and outputs.

From the second half of the 90s, public administrations started to change the perspectives and the public affairs management began to focus also on transparency, citizens' participation and responsibility and accountability, that is the inter-institutional dimension: the New Public Management approach became then the Public Governance approach. A third approach came into force by the end of the 90s, and it was named Network Management. This approach recalls the multidimensional character of the system in which the public administration activities take place and it highlights the importance of the interaction between the public and private sector, thereby discounting the key aspect of the New Public Management approach: to this end, the interaction between the different actors (and therefore, the mutual dependency) within the system is seen as the best solution in order to contribute to the pursuit of public interests, that is a common objective, which will be reached if a good system governance will be guaranteed by the public sector (Bekke, Kickert & Kooiman 1995; Kooiman & Van Vliet 1993; Minogue 1998).

With this new role, the public administration is therefore called upon to review its function and readdress much of its efforts in managing the day-to-day more complex public networks, starting with the promotion and creation of collaborations, by providing resources and acting as mediator and leader between the partner organizations (Angranoff 2005).

The Public Governance approach, therefore, reassesses all public interventions based not only on economic rationality (efficiency and efficacy of service provision), but also on the the entire system of relationship in which the public administration is involved, i.e. society as a whole: the concept is that citizens' problem cannot be resolved if private subjects do not participate in the definition and implementation of public policies, and therefore the interaction with all actors at various levels of both political and social context is crucial.

A network is more than a simple group of actors. According to Provan & Kenis (2008), a network can be considered as a group of two or more actors (that is, the nodes of the network), which are autonomous, interdependent between each other (through the ties that represent the connection, based on specific relationships) and have a clear and defined structural characteristics and peculiarity. There are the following three main characteristics of a network:

- density: it describes the number of interconnections between the actors, and therefore the degree of fragmentation of the reticular structure;
- centrality of actors: it describes how the actors are interconnected between each other; usually, a highly centralized network is led by a leader or an agency, which have a coordination role and entertain a greater number of relationships;
- existence of cohesive sub-groups: it describes the decentralization degree of a network and it provides therefore information with regard to the presence of multiple and highly inter-connected sub-groups.

These characteristics imply that a successful governance system must be guaranteed wherein the interconnection network is constituted of organized and multi-professional nodes. A good integration is an essential prerequisite to avoid risks related to duplication, dispersal of activities and an inappropriate use of resources. From a pure normative point of view, a network can be defined as a set of autonomous and interdependent nodes, which decide to organize their interdependencies to generate system value: a lack of interdependency management destroys value. In relation to that, Provan & Kenis (2008) defined three ways of governing and coordinating the interconnections (that is, the modality of power distribution and which is related to the balance between contributions and rewards that each node exchanges with the network):

- through a shared governance (participant-governed network): here, any partner has the lead of the network and everyone participate to define both the operational and strategic aspects; in this case, the approach is decentralized and it returns greater flexibility and responsiveness to the network participants;
- through the presence of an administrator (network administrative organization): a third-party receives a mandate to act as a facilitator and/or mediator of the network; here, the approach is more external-oriented and it returns a higher degree of legitimacy, sustainability and efficiency but, given its structure, it could lower the speed of the decision-making progress;

- through the presence of a leader organization (lead organization network): the leader assumes both coordination, management and controlling roles and it has a great influence towards all partners involved; this is a more centralized approach, but it can return criticalities in terms of asymmetrical power.

Public Governance approach recalls a transition process of the public administration from an unitary bureaucracy to a fragmented public services provider, jointly with private and non-profit organizations (Rhodes 1996).

Being able to successfully manage a network is therefore vital for coordinating the activities and stakeholders within all context, particularly within the healthcare sector, which is an environment characterized by the presence of multiple stakeholders with different expectations and backgrounds. As far as health is concerned, indeed, there are several interdependencies that explain the constitution of networks, for instance; resource-based; informative; cognitive; based on the acquisition of inputs and in the care process. In addition to that, there are several advantages: risks-sharing; research and development costs-sharing; economies of scale; access to new markets, resources and managerial competencies; and higher degree of protection and mutual support.

At the macro level, homecare services of public interest ("Servizi di Assistenza e Cura a Domicilio" – SACD) represent a great example of a shared governance network with the presence of cohesive subgroups, in which each of the partner organization cooperates and discuss about the entire strategic and operational network government to achieve the common objective, that is the wellbeing of the users. Alternately, at the micro level (that is, within the district of competence), the SACD plays a central role and the network involved is highly centralized and dense, as a result it has numerous interconnections with municipalities, government and several other non-profit organizations which is able to provide quality care to the final user in the best possible way. Given the peculiarity of the services provided at home, this modality of power distribution ensures a proper degree of flexibility and responsiveness.

With regard to the nursing homes, the setting recalls the "network administrative organization" modality of power distribution. Here, the environment is highly fragmented (there are 68 nursing homes all over the canton of Ticino) and, in order to ensure a certain degree of coordination among the homes, the setting can rely on the support of the association of nursing home directors of the canton of Ticino ("Associazione dei direttori delle Case per anziani della Svizzera italiana" – ADiCASI, which is a third-party institution and which, during the crisis, had a key role in sharing properly the protocols and guidelines coming from the government. Initially, the institution was established as a bearer of interest to the nursing homes directors.

2.2 Intra-organizational response

As presented by Jervis-Tracey (2005) the public sector in recent decades has been influenced by the trends of the private sector that have resulted 'in the shift' from corporatism to post-corporatism. The re-organization of the public sector has been developed to face the rapid and continuous changes within a more competitive environment. Three main changes have been observed, which can be related to the "neo-corporate bureaucratic approach":

- the shift from an organization-centered structure to a network-centered structure;
- the flattening of the organizational structure;
- and the shift toward a more collaborative approach.

This has clashed in the healthcare sector with a pre-existing model based on authoritative patterns. In particular, the use of parliamentary law for decision-making and the existence of an approach based on operating procedures have been the two main barriers (Hurley & Linsley 2007). In more general terms, the existing approach in the healthcare sector aims at implementing standardized processes that can guarantee the reduction of heterogeneity in the services provided (Morgan 1989).

Elderly and homecare sector, due to the long-term relationship with users and to the characteristic of the elderly population, has always aimed to develop and implement a less standardized model of care based on the biopsychosocial approach, which has been proposed for the first time in 1977 by George L. Engel and Jon Romano. This approach is considered to be more holistic, because it includes not only the physiological care, but also some psychological and sociological elements (Kanning & Schlicht 2008).

Based on the framework proposed by Hannah et al. (2009), the pandemic crisis is considered as an extreme event for the elderly and homecare sector organizations. Indeed, such situation can implicate important psychological or physical consequences for all members, they can easily become unbearable, and the impact

may exceed the organization's response capacity to contain the spread of the virus within the infrastructures. To this end, and related to the elderly and homecare sector, it is important to recall one typology of response in such context, that is "trauma organization". This type of response to external pressures, typical for the first aid sector and more broadly for acute care, tends to codify standard operating procedures for many routine tasks and establish layers of administrative controls (Hannah et al. 2009). In particular, and given the duration of the event, the organizations affected by an extraordinary situation tend to focus in the maintenance of a high level of vigilance. According to the exposed model, there are two levels of response to a prolonged extreme situation, that is an intra-organizational and an inter-organizational level. If for the inter-organizational level, there is an increase in the density and intensity in the relationships within the already established network, the response at the intra-organizational level involves a higher degree of centrality between actors within the system; more generally, there is a shift to a more physical-centered model of care, since the priority is on the safety of users. This structure is therefore based more on the clinical aspects, also changes the organizational and leadership structure in the organizations.

During the present pandemic crisis, the authors observed the appearance of three key leadership figures within the elderly and homecare sector. The first was the administrative director, who not only exercised the classic role of controller, but was mainly responsible for interacting with the external environment. The second key figure was the health director, who was responsible for bringing an external and competent clinical perspective into the organization. Both roles are always expected to be present in all organizations within the sector because of the explicit requirement by the funding system, and they are much useful to create a coordination system within the two contexts. The third role emerged is the person responsible for the care. This operational role was in charge for adapting and implementing the new guidelines to the local context and the available resources.

In terms of type of leadership, a less participative approach was found if compared to what is used usually within the elderly and homecare sector, as it emerged a need to reduce the possible heterogeneity of adherence to the procedure, due to the high risk of incorrect implementation.

3 Responses to the pandemic outbreak

With regard to the Spitex experiences, the authors proceeded by interviewing following key informants active within the setting: Ms. Marina Santini and Mr. Gabriele Balestra (health and administrative directors of "Associazione Locarnese e Valmaggese di Assistenza e cura a Domicilio" – ALVAD); Ms. Rosaria Sablonier Pezzoli and Mr. Gilles Mueller (health and administrative directors of "Servizio di assistenza e cura a domicilio di interesse pubblico del Luganese" – SCuDo), and Dr. Stefano Gilardi (the coordinator of the Conference of the six non-profit assistance and homecare services of public interest of the canton Ticino).

Related to the nursing homes, the authors proceeded by interviewing following key informants: Mr. Fabio Maestrini, who is the administrative director of the Istituti Sociali di Chiasso and also a member of the steering committee of the association of nursing home directors of the canton of Ticino (ADiCASI), and Dr. William Pertoldi, who is the former medical director of the Istituti Sociali and a member of the steering committee of STiMeGer, the Ticino Society of Geriatric Medicine. Related to the second nursing home called Paganini Rè, the authors interviewed Mrs. Paola Franscini, the administrative director, and Mrs. Paola Frapolli, the nurse responsible for the care within the infrastructure.

3.1 Spitex experiences

3.1.1 Homecare context in Switzerland and Ticino

In Switzerland, assistance and homecare is enshrined in the 1999 Federal Constitution, which assigns the responsibility to each of the 26 cantons. The services are provided by three entities: non-profit organizations (26,7% of the providers), for-profit organizations (21,9% of the providers) and freelance healthcare professionals (51,4% of the providers). According to the latest figures, the entire setting provided employment to 52.574 people, and care to 367.378 users (about 4,3% of the Swiss population); 62% of the total cases regarded long-term care, while about 24,6 regarded housekeeping and social care. More than half of the users who benefited from long-term care were elderly people, and mostly of them were aged 80 years or more (Authors' own elaboration, based on data from: Association Spitex privée Suisse ASPS 2020; Bundesamt für Statistik 2020a, b, c, d; SBK 2020; Spitex Schweiz 2020).

In the canton of Ticino, the services are regulated by the 2010 "Legge sull'assistenza e cura a domicilio" (*Law on assistance and homecare*), and they promote independent living by supplying "*temporary or longlasting, preventive or rehabilitation services*" (Il Consiglio federale 2020) to each single person living in the cantonal territory in need of help due to "*illness, injury, disability, pregnancy, old age and more in general socio-familial difficulties (Article 2, Repubblica e Cantone Ticino 2020a)*". The competent authority

responsible for the homecare is the cantonal office for elderly people and homecare ("Ufficio degli Anziani e delle Cure a Domicilio" – UACD).

Each of the six districts operates a non-profit organization, which has the status as a private-law association of public interest (SACD), as well as for-profit organizations and freelance healthcare professionals.

In 2018, according to the most recent data, about 66% of the final users in Ticino were elderly people (aged 65 years or more): over the last 15 years, it is relevant to cite that nursing care grew by 152% as well as basic health care by 46%, both in terms of hours provided. The surge in the services confirms how home visits are becoming important within the healthcare sector, as a result of the rapid discharges from health institutions (Authors' own elaboration, based on data from: Ufficio di statistica – DFE 2020a, b).

Assistance and homecare services work closely with a very dense network of actors involved in territorial authorities of aids, such as transport services, meals on wheels services, day care centers and more in general support services.

3.1.2 Response to the pandemic outbreak

Provision of services

Between February and March, 2020, SACDs, for-profit organizations and freelance healthcare professionals recorded a significant drop in service hours: according to the study participants, the main reason was the fear of infections coming from the final users, as the healthcare workers were seen as the main vector of the pathogen, especially among Italian employees coming from the Lombardy region, one of the most affected part of Italy. To this effect, the management of both services indicated that family members in particular, came into their support, by dealing mostly with "basic health care", for instance, administering medications, providing massages and wearing and removing elastic stockings. However, the replacement of healthcare workers by the family has not been viewed positively by the health professionals, as this could have led to unbalance in the pathologically complex users: therefore, a massive awareness-raising campaign has been launched, in order for the users and the families to support the treatments more regularly.

With regard to the management of visits, all precautions were taken based on the institutional guidelines: individual protection measures were provided to everyone and the organizations were treating all users as potentially infected. A specific state of health evaluation has been implemented, for instance, a telephonic triage before visiting personally the patients.

Collaborations

The collaborations within the healthcare network and between the different actors worked well, according to the medical directors of ALVAD and SCuDo.

With regard to the extra-sectorial collaboration, it is worth noting that, for example, ALVAD played an important role in taking care of some cancer patients at home in order for the EOC Locarno hospital "La Carità" (COVID-19-Center for the canton Ticino) to free up beds for COVID-19 patients.

Concerning the intra-sectorial collaboration, the services highlighted the quick response from volunteering organizations and municipalities, which took over the additional demand of help due to the acute phase of the crisis.

In the national sphere, and given the position of Mr. Balestra as vice president, the canton has played an important role in sharing the experiences and best-practices with other Swiss cantons and within the steering committee of the umbrella association for the non-profit organizations.

Monitoring

According to the administrative directors, the UACD (at the cantonal level) has requested that a "state of necessity monitoring" be performed twice a week, (initially twice a week and later on less often), where each organization had to communicate its general condition about the provision of services as well as few more information about its employees, users' health status and the supply situation. Instead, at the federal level any integrated monitoring system has been established.

Human resources management and information flow

Generally speaking, both managements stated that all employees demonstrated a great comprehension and professionalism with regard to the delicate situation they were all living. Apart from that, the directors had to deal with the panic that initially affected some workers, especially those from Italy, who frequently claimed that they were not adequately protected during shifts, because their healthcare colleagues in Italy stated that directives in terms of personal protective measures were different from what the Swiss institutions had indicated. Psychological support services has been offered by an external contractor and this has been

effective, as all workers could have the chance to express their emotions and uneasiness even anonymously due to the unusual situation, causing mostly stress and distress. At the cantonal level, the government implemented a toll-free number for the whole population.

To ensure the continuity of care and the sustainability of the service as a whole, the organizations permitted employees to work with all the necessary personal protective measures they were tested positive, but had no symptoms attributable to COVID-19: this choice was in line with the federal guidelines, but in contrast with the cantonal ones. As the directors stated, if the cantonal guideline was applied, probably, the entire cantonal health system might have collapsed, given the important shortage of nursing staff that is already impacting since years on the Swiss healthcare system. By the end of May, 2020, ALVAD and SCuDo registered only five positive-tested employees.

With regard to the information flow between the cantonal government and the homecare organizations, and in light of the many actors involved within the setting, it is interesting to cite that the competent authority did not officially decide to centralize the communication: this has surely led at the very beginning of the pandemic outbreak to some problems, since any service has officially taken the lead in coordinating the sharing of directives and information coming from the authority. Each organization was required to process the documents received from the cantonal institution internally and forward them in a synthetized form to the heads of the équipes, who were responsible in sharing the information with the healthcare workers. Just few weeks after the first case in Ticino was reported, the Cantonal Medical Office appointed referral services for each of the three typologies of actors within the setting, namely: ALVAD (for SACDs), Swiss Professional Association of Nurses (SBK-ASI, for the freelance healthcare professionals) and InterNursing (for private organizations).

At the national level, "Spitex Schweiz – Aide et soins a domicile Suisse" played an important role, by sharing regularly a "Frequently Asked Questions" document based on experiences to all its members.

Logistics

- Personal protective equipment: by both services, according to the medical directors, the quantity of stockpiled personal protective equipment was less than the recommended amount by the Swiss Influenza Pandemic Plan, that is a storage of 125 masks/each full-time unit of personnel and three months in autonomy of glows. However, the managements stated that there has been never a shortage. To ensure an equal distribution of the equipment among all organizations, the Cantonal Pharmacist Office officially appointed ALVAD as the reference for the supply within the setting only by the end of April 2020, since the beginning of the crisis there were organizations which faced difficulties in procuring and always have the right quantity of material to safeguard the continuity of care, given the heavy demand within the market and logistics reason due to the restrictions at the customs.
- Headquarter: both managements opted to not compel their administrative staff to operate from home, as they were reluctant to express a perception that the situation appeared extremely hazardous. Due to the high capacity in both departments, both organizations often ensured social distance between the spaces, enabling regular performance of all office activities.

Lessons learned, regrets and future prospects

The interviews highlighted a significant communication problem not only between the different actors involved within the homecare context, but also between typologies of organizations, due to lack of a clear coordination structure.

However, and despite the fears, the study participants noted overall a positive working environment, which has been further reinforced by the response of the community through gestures of great solidarity: this represented surely a great psychological support to each health worker.

According to the managements, a negative point has been represented by the media communication strategy, which has been defined as counterproductive with disproportionate impact on the whole population; on the other hand positive feedbacks came with regard to the communication strategy of the cantonal institutions.

In view of the features and the dynamics that characterizes this setting, and the experiences gathered from the interviewees, more visibility and the need of a redefinition of the field of action of the SACD have been claimed, since only little visibility to the services and their important role has been given and, according to the coordinator of the SACDs' network, many important effects caused by the containment measures have been underestimated: during the acute phase of the pandemic outbreak, the services were the only

"institutional arm" to still have the chance to visit citizens at their own domicile and many healthcare workers have denounced signals of an increased domestic violence. Therefore, in the future, it is imperative to increase the collaboration between the services, municipal social services and the regional protection authority in order to better mitigate these effects, which are only visible when the proximity to the territory is guaranteed. To this end, it would be desirable an even more integrated proximity socio-medical system, in which the many public and private actors could share a common platform and communicate better, with the lead assigned to a network manager, who can then act as reference point for the entire network system.

3.2 Nursing homes experiences

3.2.1 Nursing home context in Switzerland and Ticino

From a historical point of view, nursing homes first arose in Switzerland at the beginning of the 1900s. Initially, these settings were perceived as shelters for elderly and, in particular, for lonely and/or poor people. Since 80's, nursing homes acquired a new connotation. In fact, these infrastructures started to move away from the hospital concept towards housing paradigm (Leser 2015).

In Switzerland, nursing homes are regulated by the Federal Health Insurance Act (LAMal). The cantons are responsible for the supervision and authorization procedure of nursing homes; to this end, cantonal authorities issued cantonal laws and quality guidelines, managed the lists of nursing homes and granted for operating authorizations.

Nowadays, there are 1.566 nursing homes for about 120.000 residents on the Swiss territory. The setting is run by: 31% publicly owned nursing homes; 45% of non-profit nursing homes; and the remaining 24% private and for-profit nursing homes (Ustat 2018). Every year more or less 34.400 new residents enter in a nursing home. The residents are 80.4 years old on average for men, and 85.4 years for women, and they require care for about two hours on average per day. The average length of stay is around 2.5 years (OFS 2019). In Ticino there are 68 infrastructures, and the setting offers 4.189 beds, which are annually occupied by about 4.200 residents (Ustat 2018). The nursing home context costs around CHF 460 million per year and invests annually around 50 million. The setting employs 6.834 people, 5.076 of whom are women. The median age of staff is 43,8 years and the median years of service are 4,8.

3.2.2 Response to the pandemic outbreak

Provision of services

The authors found that nursing homes had to change their offer due to the COVID-19 pandemic. The philosophy of care implemented by the participants in recent decades has sought to transform nursing homes from being a hospital to being a "home". All respondents, reported between February and May 2020, focused on an increase in health service provision and a reduction for other services. The most significant shift was the suspension of visits from outsiders (visitors, volunteers, family members, ...), which were previously considered as a relief since they were providing a huge help in relieving from part of care work from the professional staff. A second additional factor is the cancellation of services defined as "non-essential," such as hairdressing or part of the recreational activities.

In order to maintain a certain degree of residents' social life, nursing homes have introduced video calling systems for the first time. Two different approaches to video calls have been identified during the interviews. In one case, residents were left alone during the calls, while in the other an occupational therapist was always present to supervise. According to the interviewees, the presence of an occupational therapist during the video calls permitted to discover some relevant details about residents' relationship with their families, allowing the standard of care to be improved.

Collaborations

In the canton of Ticino, the context of nursing homes is very fragmented, due to the high number of independent infrastructures. Because of this situation, a working group, specific for nursing homes, has been established at level of the Cantonal General Staff of Conduct;[1] this group decided to entrust some tasks to ADiCASI. Specifically, between March and June, 2020, the association of nursing home directors of the canton of Ticino was in charge for the communication between the cantonal authorities and the infrastructures.

[1] The general staff of conduct consists of several partners involved by the State Council and it is led by the police commander. Its tasks consist of supporting the cantonal executive level in making decisions, planning and implementing measures, in coordination with partners across the whole territory (Repubblica e Cantone Ticino, 2020b).

A further coordination measure proposed by the cantonal authorities was the establishment of two medical advisors to support nursing homes in the decision of residents' hospitalization due to COVID-19.

The authors did not detect any other forms of inter-organizational collaboration implemented by the cantonal authorities. However, they observed spontaneous collaboration that were only based on personal relationship between interviewees and other actors in the area, such for instance doctors in COVID-19-hospitals.

Monitoring

In the canton of Ticino, the public authorities requested to each nursing homes to collect the following data:

- ADiCASI requested via an online form to collect daily data on available staff. This information was needed to in order to organize support in the event of staff shortages.
- The Cantonal General Staff of Conduct requested daily data collection on: the number of residents infected, the number of people recovered to a hospital, and the number of deaths related to COVID-19.
- The cantonal doctor requested to collect every three days detailed data on the health status of nursing homes residents, possible symptoms of each resident and COVID-19 test results.

Human resources management and information flow

Between March and April, the availability of health workers residing in Italy was the most discussed topic in the local media in Ticino. There was a possibility that Italy would decide to precept its nursing workers, leaving canton Ticino in a difficult position.

According to the study participants, the media played an important role in the attitude of the staff. To overcome this problem, the study participants believe it is necessary to improve the health literacy of all staff. According to the participants, a tool that was particularly useful to deal with the anxiety situation developed by the staff is the psychological support provided by the cantonal authorities.

Among the possible strategies to be adopted in the future to improve staff preparation for situations such as the one caused by COVID-19, is the creation of periodic specific pandemic training.

In general, none of the interviewed managers reported work shift concerns. Although the authors were not able to fully detect employees' perspective (as mentioned in section 1.2), this result can be surely explained by the following factors. Firstly, in the nursing home context, the staff is accustomed to working shifts. Secondly, one of the two participants had no cases of COVID-19 during the analysis period. This drastically reduced the impact of the pandemic on the nursing home. Due to this situation, the participant had time to establish a dual shift planning (version 1 routine vs. version 2 emergency). This system has the clear advantage of allowing staff to report all possible scenarios to their family circle and to reduce uncertainty. Thirdly, with the other participant, the strong presence of cross-border commuters played an ambivalent role. On one hand there was the fear of border blockades, while on the other hand, since the rules were stricter (e.g. blockade of non-essential economic activities and blockade of travel outside the commune of residence) in Italy, frontier workers with children could depend on the assistance of their family network, which at that stage was "free" from other activities. Fourth, all participants reported flexibility on the part of the staff. Since the nursing homes operate with different teams (floor teams) and each team consists of young adults (without family responsibilities), they were able to serve as a buffer for people with family needs. The cover was facilitated by the absence of social activities. In addition, before resorting to overtime of full-time employees, the reduced work rates of some employees could be used to cover the needs. In general, this encouraged all participants to prioritize the needs of parents or people in need of treatment. Indeed, participants reported that they were able to determine each employee's individual condition and find a negotiable solution for each situation.

Instead, great changes have been reported regarding the managerial approach. All participants stated that in recent years they have tried to implement a horizontal decision-making model. The health emergency has imposed a vertical decision-making model. The nursing homes participating in the study created a coordination group composed by the administrative director, the medical director and the care manager, and depending on the needs, the sector managers (hotel sector manager, recreational activities manager, etc.).

The typical information flow was as follows:

1) ADiCASI send the new information to the administrative director;
2) the administrative director summarized the new information and shared it with the coordination group;
3) the administrative directors shared the information with their staff during daily meetings.

The participants identified some crucial aspects for the success of this communication process:

- The importance of oral communication:
  new working procedures were often provided in written form, but oral communication made it possible to control the level of understanding and to develop a common interpretation of controversial passages.
- The importance of employees' trust in the managers:
  the continued attendance of the health director, who is a professional recognized in ensuring the right set of competencies to review the implementation of the own working procedures, encouraged the development of a sense of trust, which assisted in avoiding or mitigating implementation errors.
- The importance of a "do with" strategy:
  the implementation process of new working procedures was improved when nurses undertook the task of exhibiting and executing what was prescribed by the staff for the first time. This procedure allowed problems to be resolved and the directives to be avoided by the employees as being seen by those unaware of their daily activities.

Logistics

- Personal protective equipment: in Ticino, the Office of the Cantonal Pharmacist, in coordination with army pharmacy, oversaw the avoidance of personal safety equipment shortages. On 22 January, the cantonal administration informed the nursing homes for the need to find on the market personal safety equipment. Study participants stated that there was no shortage of personal safety equipment in the nursing home context in Ticino. In contrast, swabs, as in other countries, had to be rationed. According to the cantonal guidelines, people with severe symptoms to be taken to the hospital should be given priority. In the nursing home setting, swabs were carried out on nursing homes residents only if necessary.
- Buildings: the space management was one of the most complicated aspects faced by the participants. The creation of a specific COVID-19 department, as mandated by the cantonal authorities, was complicated by the fact that there was limited space available for any change of intended use. Today nursing homes facilities are too rigid to allow the necessary flexibility to readapt spaces and support adaptation in the care process in case of a pandemic.

Another complicated aspect was the management of incoming resources, people or material, because they could carry the virus into the nursing home. The outsiders had to be briefed, outfitted with protective equipment, and accompanied by staff during their stay at the nursing home. Every surface touched by external people had to be disinfected. Furthermore, the workers disinfected all supplies outside the nursing homes. Both these processes caused considerable additional work for the staff.

Lessons learned, regrets and future prospects

Study participants found that the media pressure was too high, and the portrayal of nursing homes' was too negative. In fact, in the canton of Ticino, there have been several parliamentary acts denouncing problems in the management of the pandemic within some nursing homes. In relation to that, the explicit demands of the involved political parties were:

- the resignation of the political authority involved in the management of the nursing homes;
- the dismissal of the directors of nursing homes involved;
- a request to the judiciary to open criminal proceedings against the nursing homes for culpable homicide;
- the resignation of the Cantonal Medical Officer.

Because of these pressures, the participants expressed that their priority shifted from "avoiding contagions by safeguarding the quality of life of residents" to "avoiding contagions at all costs".

Furthermore, the participants expressed their point of view about the guidelines issued by the Cantonal Medical Office. According to them, the focus of the guidelines issued by the cantonal authorities shifted over time from protecting residents and safeguarding their quality of life to a reporting exercise to keep track of activities in case of legal problems, and they have led to a huge and disproportionate bureaucratic burden.

The two main lessons learned by the study participants are:

- during the crisis, the continued involvement of the health director and geriatric doctors contributed to effectively enforce the new working procedures;
- a good collaboration between the figures of the administrative director and that of the health director is an important factor of success for implementing the new working procedures.

Regarding the future, some fears emerged. A prolonged closure to the outside visitors could eventually turn nursing homes back into exclusive places of care, resulting in a reduction of the quality of life for the residents. The second fear was the limitations in residents life stimuli, because with prolonged closure the negative dynamics between staff and residents emerged. For example, participants discovered that due to the absence of external visitors, some residents expressed a desire not to change their clothes (e.g., from pajamas to day clothes) or to comb their hair. The staff did not contrast this trend, even though it was considered incorrect (by the staff themselves) and due to the isolation from the outside world, certain types of collusion formed between residents and staff.

4 Conclusions

The present paper sought to investigate how elderly and homecare sector in Ticino faced the SARS-CoV-2 pandemic outbreak, by conducting a case study.

The theoretical framework illustrated in section two and the experiences gathered by the authors during the interviews underscored the importance of two elements.

At the micro level, the need of always guaranteeing the two main pillars of the organizational collaboration, that is a structured division of labour and the coordination of activities within the organization, by providing both a feedback (formal and informal communication) and a programming mechanism (related to the processes, outputs and competences). To this respect, it has been fundamental the central role played by the executive cadres in managing all the crucial phases of the emergency, by ensuring the correct execution of all processes and maintaining the communication channels within and outside the organization at work.

Whereas, at the macro level, the multidimensional character of the system, in which the many actors involved have an increasingly number of frequent interactions, suggests that it is vital to guarantee a good governance. Being within a network is not a choice, but rather a condition in which the stakeholders are based in: the only choice left for the actors is about choosing "if" and "how" to manage the interdependencies between them. Based also on the COVID-19 experience, a good healthcare network governance has yet to be defined, because the finale outcome is not only based on the actions of a single actor, but rather from a joint action.

The Ticino's experiences have reported that while, the nursing homes network ADiCASI played the role of facilitator, mediator and leader in managing and sharing all the necessary protocols and directives coming from the cantonal government (as a result, tensions between the actors have remained relatively low), within the homecare setting, no entity has formally taken the lead, and this has fostered misunderstandings and greater concerns between the actors.

In a system where both public and private sector interact and cooperate for a superior objective, it is therefore essential that the Public Administration play an active role within the network, by participating proactively in the definition of strategies and in the operational management and control.

Given the peculiarity of the context, the pandemic outbreak on the elderly and homecare sector in Ticino has highlighted the need of structuring and implementing a more shared governance network with the presence of cohesive sub-groups (each for a single district of competence), where a high degree of formalization of procedures is maintained (that is a coding of activities through official rules and standard procedures) and the coordination of each subgroup is left for a network manager, who act as a point of contact inside the network.

In addition to that and, among the elements to be considered to improve the response capacity of the system, the authors strongly suggest to take into consideration the following points:

- a higher degree of integration within the proximity healthcare network; as the authors showed in section 2.1, a discrete degree of integration within a dense network is needed to avoid multiple risks, such for instance duplication, dispersal of activities and an inappropriate use of resources. The healthcare system, which is characterized by a high number of interconnections between actors

with different expectations and degrees of centralization/decentralization, has to ensure a good system governance, in order to better coordinate the participation process of the stakeholders in the policy building for generating higher levels of value. The final outcome depends on how the system is managed, and the COVID-19 pandemic outbreak has clearly shown some limits. Future cantonal health policies should therefore pay special attention to improve the overall system governance;

- as the authors indicate in section 2.2, the elderly and homecare sector tends to respond to a pandemic crisis like first aid sector. The main difference is that while the first aid sector is used to develop a codified standard and a series of operating procedures for many routine tasks through the daily activity, elderly and homecare sector is not used to it. In order to deal better with future large-scale public health emergencies, the authors strongly suggest to implement periodic practical exercises aiming at simulating crisis situation. This way, it is possible to develop a proper code of conduct and to define a set of procedures that are fundamental to manage an extraordinary situation. In addition to that, it is also strongly recommended to elaborate a joint crisis-management plan: to this end, it will be crucial to guarantee a high degree of stakeholders' engagement, so that each of them will be able to share their own experiences gained during the SARS-CoV-2 pandemic outbreak.

The health crisis has showed important criticalities, and it has further highlighted important structural problems within the cantonal health system, which probably have been neglected in the past: for instance, both contexts have clearly demonstrated, due to a chronicle shortage of highly skilled staff (lack of reserves during emergencies) and a high retention rate, the need to improve the desirability of the nursing profession. During the pandemic outbreak, the canton of Ticino expressed serious concerns.

Finally, given the strong limitation of the present study due to the limited sample (both in terms of number of study participants, and types of professional categories), and in light of a greater robustness in the results and conclusions, the authors invite researchers to extend such analysis for other cantons.

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Competing Interests

The authors have no competing interests to declare.

Author Contributions

All persons listed as authors have contributed to the design and writing of the present study, and they reviewed and approved the final manuscript.

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