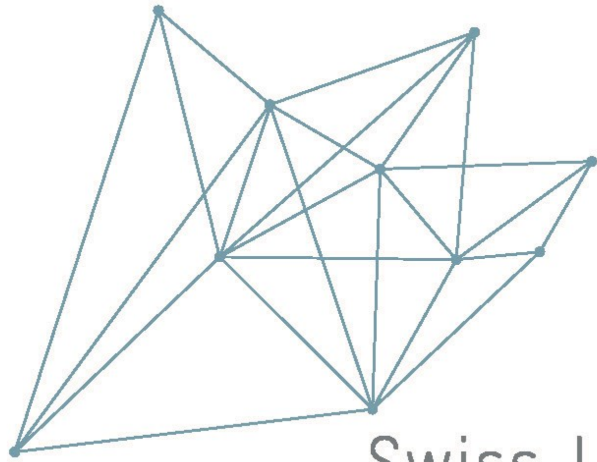

Sectorial and managerial response of nursing homes in Ticino facing the *SARS-CoV-2* pandemic outbreak: a case study

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List of abbreviations

ADiCASI	Association of nursing home directors
COVID-19	Coronavirus disease 2019
LACD	Law on Care and Home Care
LAMal	Federal Health Insurance Act
LAnz	Cantonal law on promotion, coordination and the financing of activities in favor of older people
OMCT	Cantonal order of doctors
SARS-Cov-2	Severe acute respiratory syndrome coronavirus 2
STiMeGer	Ticino Society of Geriatric Medicine
UACD	Office for the Elderly and Home Care
WHO	World Health Organization

Key Messages

The analysis shows some of the positive and some critical aspects that emerged during the recent response of the elderly care sector to the SARS-Cov-2 pandemic. The experience narrated by the interviewees showed that in the very first phase of the pandemic outbreak nursing homes were in a "shady area", with policy priority focused on tracking infected people and strengthening hospital intensive care units. Given the epidemiological features of this virus, it soon became clear that nursing homes are highly vulnerable and deserve special attention. The elderly care sector is a highly decentralized sector and relations with actors in the health care system tend to be more personal than institutional. In addition, facilities for the elderly are places of life, real homes for their residents. These factors mean that the response to situations such as those created by the pandemic cannot be standardized and are highly complex. Among the aspects that need special attention are certainly the increase of cooperation in the system, the enhancement of the nursing profession and institutional communication. This situation must act as a stimulus to promote a learning cycle based on empirical knowledge.

Executive Summary

Due to specificities of each nursing home system, there is a need for studies that take account of local contexts into the response of a global pandemic. In this sense, the present study aims to provide a review of critical issues that have emerged in this first phase of response of the nursing homes system in the Ticino canton to the current pandemic.

The work starts with an overview on the evolution of the SARS-CoV-2 pandemic outbreak from the global level, passing through the Swiss level and reaching the level of the Canton Ticino. The second part presents the considerations that emerged from two case studies. The first case study concerns the nursing home which, in Ticino, was the first to suffer contagion among its residents. The second case study refers to a nursing homes that has so far been spared by the epidemic.

Some useful considerations for stakeholders in the sector emerged. Among them, the need to increase cooperation in the sector, the importance of enhancing the nursing professions and improving communication in the sector. The results presented may become a stimulus to start a process of learning health system based on empirical knowledge and aimed at improving the collaboration between the elderly care system and across the health care system, to improve staff skills and retention and improve institutional communication of the nursing homes system.

Introduction

The objective of this work is to analyze the response to the SARS-CoV-2 pandemic of three nursing homes in the Canton Ticino between February and April 2020. The aim is to describe, from an organizational perspective, the actions taken by the managers of the nursing homes to fight the spread of the virus and to provide recommendations for the nursing homes sector if faced with an ongoing or future health crisis with similar features.

In a first step on 27 April 2020 a literature review was conducted. Three databases were used for the search: Web of Science, PubMed and Medline. Combinations of the following keywords were used for the search: COVID-19 and long-term care, LTC, nursing homes or elderly care. The search provided a total of 30 results, of which 24 were unique and relevant to the topic. The review of the abstracts revealed that the literature focused mainly on the nursing homes sector in the USA and in China. In addition, most of the papers published focused on the epidemiology of the virus or on the weaknesses of the nursing homes sector towards the virus. There is therefore a gap in describing the organizational solutions adopted to fight the SARS-CoV-2 pandemic in the nursing homes sector in the academic literature that our work tries to fill.

Due to the lack of data on the phenomenon and due to the strong impact of the organizational context in the strategy adopted by managers to respond at the emergency we chose, as proposed by Yin (2003), the case study method. Our analysis is based on two case studies, describing the experience of three nursing homes: two run by the “Istituti sociali di Chiasso” and the “Casa Anziani Paganini Rè”, in the Italian-speaking part of Switzerland, the Canton Ticino.

To develop the case studies, four semi-structured interviews were conducted. More precisely two managers were interviews in each nursing home, one manager of the administration area and one of the care area. The interviewees were not provided with any material beforehand. In total the four interviews lasted approximately four hours and were transcribed immediately after the meetings.

The nursing homes “Istituti sociali di Chiasso” were selected because one of its two nursing homes was the first one to have a confirmed case of COVID-19 in Ticino. On the other hand, the “Casa anziani Paganini Rè” was selected because it was one of the nursing homes that, up to June 2020, did not have any detected cases of COVID-19.

In order to triangulate the results of the interviews, available documentation regarding laws regulating the nursing homes sector, recommendations, guidelines and directives for tackling the Corona crisis, as well as press releases from the federal and cantonal authority concerning the nursing homes sector were analyzed. This was done to confirm the order of events and to add additional information on the implementation of new rules that emerged in the selected nursing homes during the crisis.

Despite the case studies focus on just three nursing homes the results are generalizable to the entire nursing homes sector of the Canton of Ticino. In fact, there are many elements of relative homogeneity between the 68 nursing homes operating in Canton Ticino. All nursing homes have a set of guidelines in common, which is provided by federal and cantonal health authorities. These include, for example, the same professional skill-mix that if the degree of dependence of the residents is the same. What makes the case study methodology so suitable in this context is the relationship between relatively homogeneous elements across all nursing homes on the one hand, and the highly registered differentiated COVID-19 contagions rates by the individual nursing homes on the other hand. In fact, this process highlights "the why", "the who", "the when", "the how" – that is, the very elements to which the case studies presented in this document want to respond – have played a decisive role in the response to the coronavirus crisis.

This document is structured as follows: the following section will provide a brief account of the evolution of the global SARS-CoV-2 pandemic, followed by the third section that will focus on the epidemiological evolution at the Swiss level and the fourth section that will specifically focus on the Canton of Ticino. The fifth section will briefly describe the nursing homes sector in Switzerland, followed by a presentation of the sector of elderly homes in Ticino and an introduction to the case studies. In the sixth section, findings of the interviews will be presented, followed by the presentation of possible recommendations for nursing homes managers and public servant responsible for the sector in the seventh section and the final section dedicated to the conclusions of the case studies.

Background on *SARS-CoV-2* pandemic

The first 27 cases of an anomalous pneumonia were reported on December 31, 2019, by the Wuhan Municipal Committee of Health and Healthcare, in the capital of Hubei in China. Seven days later, the Chinese authorities stated that the agent causing the infections came from the Coronaviridae-virus family and, for the very first time, it was named: “new coronavirus (2019-nCoV)”.

The family of the single-stranded RNA viruses includes some already identified agents, such as the Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV, in 2002), and the Middle East Respiratory Syndrome Coronavirus (MERS-CoV, in 2012), which were both transmitted to humans from animals (Cascella et Al., 2020)

As of January 26, 2020, there were already 2033 confirmed cases of 2019-nCoV in mainland China, with 56 registered deaths; within the same time span, other cases started to be reported outside of China, such as in Japan, Republic of Korea and Thailand, and first infections were also detected in Europe. On January 24, 2020, three cases were confirmed in France and four days later three other cases in Italy.

On January 30, the World Health Organization (WHO) declared the “new coronavirus” as a public health emergency of international concern.

As of February 11, 2020, the International Committee on Taxonomy of Viruses changed the first name given by the Chinese authorities to “Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)” and “Coronavirus Infectious Disease (Covid-19)”.

One month later, on March 11, 2020, the WHO officially declared the coronavirus outbreak a pandemic, since more than 118,000 cases in 114 countries were reported; the Covid-19 disease became the fifth documented pandemic in history, after: H1N1, H2N2, H3N2 and the 2019 H1N1 (Liu et al., 2020; WHO, 2020b, 2020c, 2020d, 2020a).

Since the first reported cases in Wuhan, Covid-19 has rapidly spread worldwide and, at the time of writing the present document, 188 countries had been affected by the pandemic: 7,817,064 people (John Hopkins University & Medicine, 2020).

The United States of America (USA) and Brazil had the largest number of confirmed cases that is respectively 2,074,749 and 850,514; the third most affected country was Russia (528,267), followed by India (320,922), United Kingdom (295,828), Spain (243,605), Italy (236,651), Peru (220,749) and France (193,746). By June 14, 2020, the United States had recorded a loss of 115,436 people, followed by Brazil and United Kingdom with more than 40,000, Italy with 34,000 and France and Spain with more than 27,000. In terms of infected cases per one million inhabitants, the largest numbers were recorded for Qatar (28,350), San Marino (20,455), Vatican City (14,981), Andorra (11,041) and Bahrain (10,735) (John Hopkins University & Medicine, 2020).

Epidemiological evolution and institutional responses in Switzerland

At the same time of the rapid spread of the virus in the Lombardy region of Italy, the first reported case of *Covid-19* was reported in Switzerland on February 25, 2020 in the Canton Ticino.

After that day, the virus rapidly spread across the whole territory. As of June 15, 2020, the total number of cases were 31,014, while the number of deaths reached 1,938: the Swiss case fatality rate was at 6.25%.

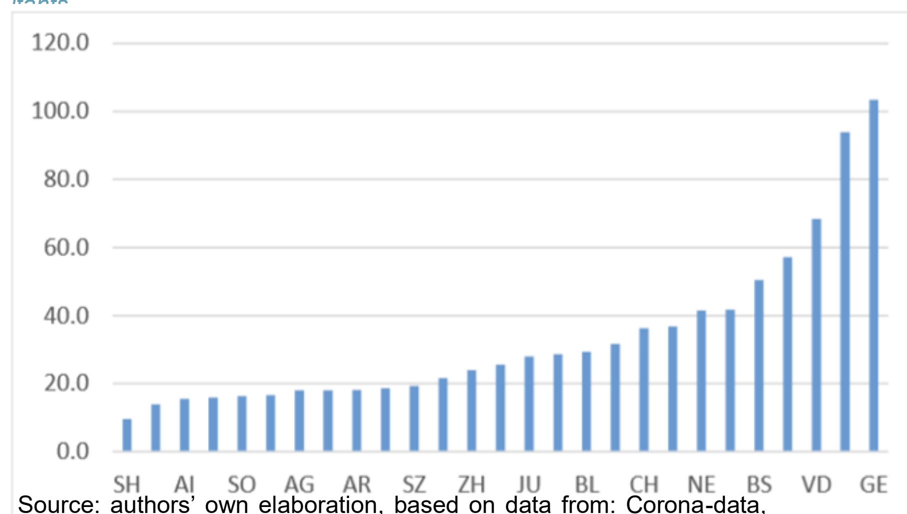
Both in terms of reported infections and fatality cases, the most affected cantons according to the Swiss language regions were Vaud and Geneva (French-speaking region), Zurich (German-speaking region) and Ticino (Italian-speaking region). With regard to the reported cases per canton per 10,000 inhabitants, the most hit cantons were: Geneva (104.29), Ticino (93.87) and Valais (57.16) (as of June 15, 2020).

The median age of people who tested positive was 52 years and for those above 60 years, the major proportion of people infected were males. With regard to fatalities, the median age was 84 years, below which the incidence was quite low. The highest case fatality rates with respect to the people aged 65 years and more were recorded for canton Neuchâtel (0.113) and canton Ticino (0.106) (Corona-data, 2020).

At a macro level, Switzerland recorded a cumulative prevalence of 35.7 per 10,000 inhabitants, the USA peaked at 62.7, while Spain at 51.5 and Italy at 38.3.

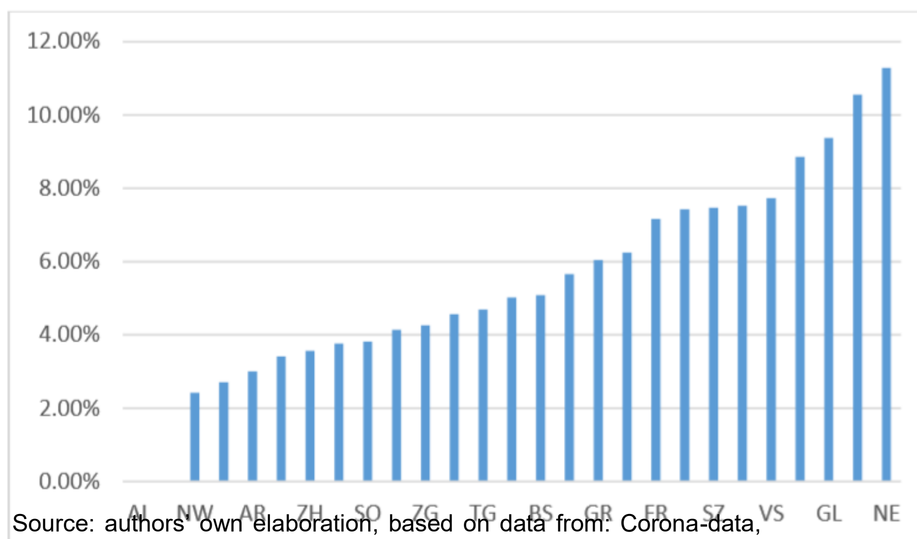
Figure 1 and 2 show some reported figures graphically.

Figure 1: New reported Covid-19 cases in Switzerland over time, per 10,000 inhabitants



Source: authors' own elaboration, based on data from: Corona-data, 2020

Figure 2: Covid-19 case fatality rate in Switzerland



Source: authors' own elaboration, based on data from: Corona-data, 2020

Three days after the detection of the first case in Switzerland, the Federal Council declared the situation as "special", according to article six of the "2016 Legge sulle epidemie" (*Epidemics Act)*. Several measures were progressively implemented, including: a ban on public and private demonstrations with more than 1,000 people, partial closure of customs, limitations on number of people allowed in restaurants and bars, and a ban on front lecture teaching.

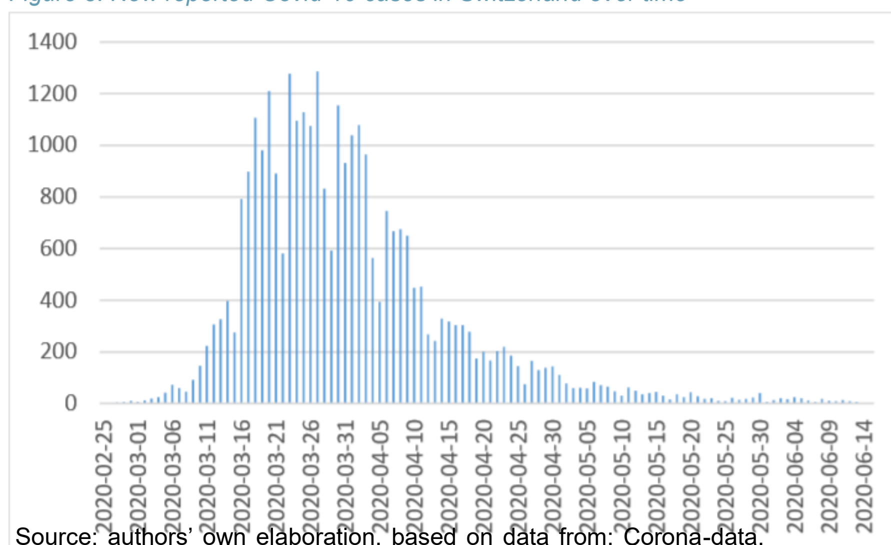
On March 16, 2020, the "extraordinary" situation was declared, in order for the Federal Council to issue even more restrictive measures and guidelines for the public. Among others, a ban on all public and private demonstrations, including sport events, a ban on gatherings of more than five people, as well as an obligation of keeping a social distance of at least two meters were imposed. In addition, hospitals, clinical and medical practices were to remain open but a ban on non-urgent medical procedures and treatments was imposed.

After the declaration of the "extraordinary" situation and, thus, after the first *lockdown* measures had been implemented, the peak of reported cases was reached on March 27, 2020 (1,287 units), while the peak of deaths was recorded some days later, on April 8, 2020.

After these dates, the numbers on new infections, hospitalizations (regular, intensive and ventilated) and deaths started to decrease, and on April 16, 2020, the Federal Council announced the progressive easing of measures in two phases: "phase 1" (from April 27, 2020); and "phase 2", (from May 11, 2020). The phases consisted of the reopening of restaurants, shops, markets as well as reopening of mass sports and competitive and professional sports.

Figure 3 shows the trend of new reported case per day.

Figure 3: New reported Covid-19 cases in Switzerland over time



Source: authors' own elaboration, based on data from: Corona-data, 2020

Laws and decrees are crucial against infectious diseases, and thus, necessary to ensure the public health protection. In this regard, in Switzerland, the legal basis for the fight against communicable disease are represented by the 2016 Epidemics Act and its related 2016 Ordinance on Epidemics. Both documents govern the field of human being protection and consider all the necessary measures, such as for instance the elaboration of an emergency plan, by defining competences and responsibilities both on the federal and cantonal levels. (Consiglio federale, 2020c, 2020d).

The other legal documents, which relate to the topic, are the following: the 2017 Federal Act on National Economics Supply; the 2015 Ordinance on Coordinated Health Service; and the 2016 Ordinance on the Reporting of Observations of Communicable Diseases (Consiglio federale, 2020d, 2020b).

An additional tool, which has been published in its fifth edition in 2018, is represented by the Swiss Influenza Pandemic Plan. The document has been edited by the Federal Council for the first time in 2004. At that time, Switzerland had been the first country worldwide to adopt a similar plan, which was approved by the competent authorities and experts, and provides recommendations on how to collaborate in an inter-disciplinary way between all the stakeholders, in order to tackle the challenges posed by a flu pandemic. The plan includes strategic plans, main healthcare measures and guidelines on how to manage and coordinate relationships both at the national and international level, by paying particular attention to the following principles: equity, proportionality and the respect of fundamental human rights (Ufficio federale della sanità pubblica, 2020).

At the international level, and given the fact that Switzerland is also a member of the WHO, the country has to respect the 2005 International Health Regulations, which is a document signed by all WHO members and that seeks to guarantee global health (Consiglio federale, 2020e).

In order to better tackle the many challenges faced due to the Covid-19 pandemic within the different sectors, the Swiss Confederation benefited from several professional functions coming from different entities: the Federal Office of Public Health; the Federal Council Coronavirus Crisis Unit; and the State Secretariat for Education, Research and Innovation.

These three entities also set up a science task force, known as the “Swiss National COVID-19 Science Task Force”, including researchers from higher education institutions throughout the country. Aim of the task force is to provide scientific advice to policy makers and administrators by means of policy briefs and reports, to identify relevant research topics and

to provide recommendations on specific measures to foster innovation and tackle the spread of the virus (Consiglio federale, 2020a).

Among others, a dedicated webpage for healthcare professionals has been set up by the federal government, which constantly provides the most recent updates and recommendations on accessibility of facilities, protection measures and the management of sick people and their relatives.

In addition to that, a dedicated federal toll-free number (Infoline Coronavirus) has been implemented.

Epidemiological evolution and institutional responses in Canton Ticino

In Switzerland, cantons are responsible for the management of their own health system. Their tasks include the planning of hospitals, home-care services and nursing homes. In addition to that, each canton has to examine and approve authorizations for healthcare professionals, which need to be coordinated and controlled.

The canton of Ticino has a government structure based on five departments. The department responsible for health is the Health and Social Services Department.

In times of emergency, the so-called “Stato Maggiore Cantonale di Condotta” (Cantonal General Staff of Conduct) is activated under the Population Protection. The entity 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, 2020h).

As stated in the previous section, in Ticino, the first Covid-19 case was reported on February 25, 2020. Already two days before, cantonal authorities had a meeting in the so called "enlarged coordination group" and, on February 26, 2020, the cantonal government introduced (through the official 1033 Resolution) a ban on carnival-related events, hockey championship matches and school trips abroad (Repubblica e Cantone Ticino, 2020g e 2020j.)

From the very beginning, the ultimate objectives of the cantonal strategy against the Covid-19 outbreak consisted in avoiding as many fatalities as possible, and to prevent the collapse of the health system.

During the same day, a cantonal toll-free number (Infoline Coronavirus) was made available to the public for questions related to the topic (Repubblica e Cantone Ticino, 2020c).

As a next measure, the cantonal government decided to assemble medical tents outside the main hospitals to measure temperature, provide disinfectant and masks to incoming people. In addition, the authorities implemented the infrastructure to carry out Covid-19 related laboratory tests directly in Ticino Repubblica e Cantone Ticino, 2020b).

On 28 February, Ticino also imposed the federal containment measures, by prohibiting events with more than 1,000 people (Repubblica e Cantone Ticino, 2020a).

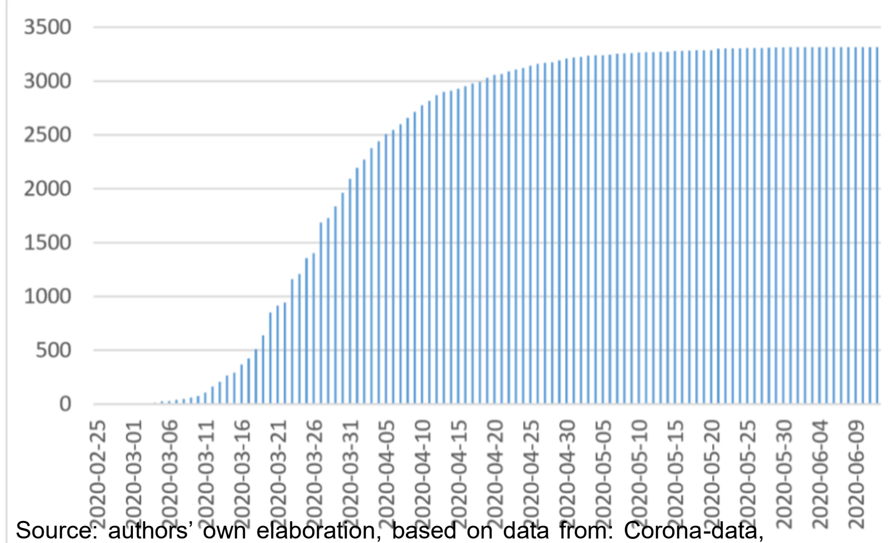
On March 6, 2020, the State Council decided to further restrict the containment measures and set a limit of 150 people who could attend an event. On the same day, two Covid-19 cases were diagnosed in a nursing home in Ticino and it was decided to limit access to these facilities. Just a few days later, a complete ban on visits within assisted living facilities was imposed, due to the sudden development of the spread of the virus (Repubblica e Cantone Ticino, 2020d e 2020f).

While on March 11, 2020, the WHO was declaring the coronavirus outbreak a pandemic, the cantonal government announced the so-called “state of necessity”. By that day, 108 new Covid-19 cases had been diagnosed.

Further restrictive measures, such as for instance the closure of schools and restrictions on economic activities (with the exception of essential services) followed shortly afterwards on March 21, 2020 (Repubblica e Cantone Ticino, 2020, e).

As figure 4 shows, till March 21, 2020, the number of cumulative reported cases was exponential, by growing from 0 to 916 in less than a month and average daily growth rate of 36.16% was recorded.

Figure 4: Number of cumulative reported Covid-19 cases in canton Ticino

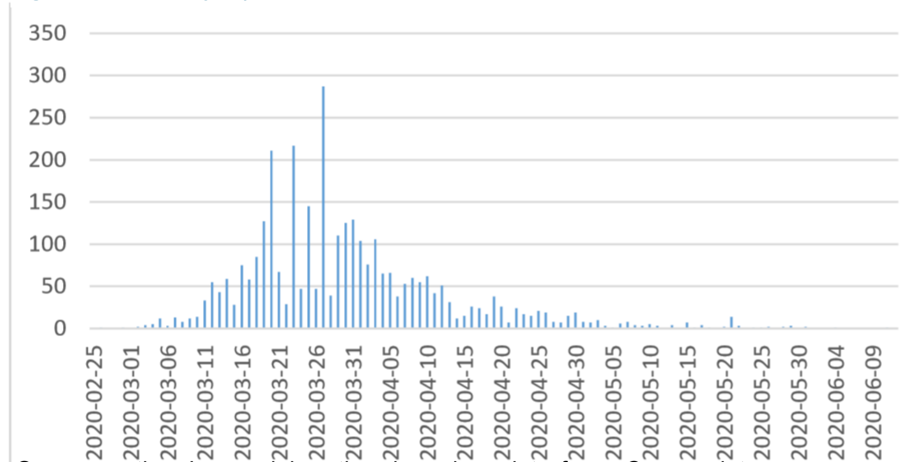


Source: authors' own elaboration, based on data from: Corona-data, 2020

After the first phase, a second phase started officially on April 23, 2020 and it was characterized by the maintenance of containment measures and a progressive alignment of the Ticino measures towards the federal ones (therefore with a slight loosening with respect to the first phase).

As can be seen from figure 5 below, the number of new daily reported cases reached its peak by the end of March, the figures started just afterwards to decrease.

Figure 5: New daily reported Covid-19 cases in canton Ticino

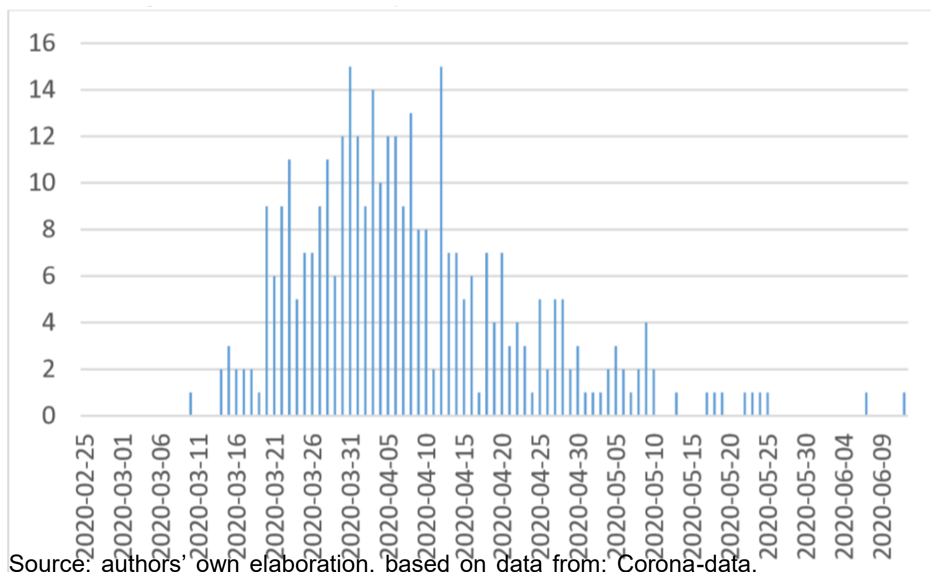


Source: authors' own elaboration, based on data from: Corona-data, 2020

Between April 23, 2020, and June 30, 2020 (the date at which the "state of necessity" was declared to be over), Switzerland entered its third phase. During this period, the authorities progressively loosened the measures, by giving more importance to individual responsibility and focusing on contact tracing, which had been used quite intensively at the beginning of the crisis. In support of the intense communication activity undertaken by the authorities, it is worth mentioning that in the course of over a hundred days, about 160 press releases were published and 37 press conferences were held only in the canton of Ticino.

Figure 6 shows the number of daily deaths due to Covid-19; here, it can be seen that the trend is similar to the one related to the new daily cases, but with a time delay of about one week. The peak of fatalities was reached at the end of March.

Figure 6: Number of daily deaths due to Covid-19 in canton Ticino



Source: authors' own elaboration, based on data from: Corona-data, 2020

As of June 12, 2020, a total of 3,317 reported *Covid-19* cases and 350 deaths were recorded in Ticino since February 25, 2020, when the first case was reported. About 45% of the overall deaths occurred in nursing homes.

Nursing homes sector

The Federal Health Insurance Act (LAMal) contains the elements relevant to the regulation nursing homes sector in Switzerland. The Federal Council defines the list of treatments and services for which the compulsory health insurance has to pay contributions, it regulates the procedure for approval of medical treatment and sets the contributions. On the other hand, the cantons are responsible for the supervision and authorization procedure for nursing homes. To this end, the cantons issue cantonal laws and quality guidelines, manage the lists of nursing homes and grant operating authorizations. The cantonal law on promotion, coordination and the financing of activities in favor of older people (LAnz, article n. 5) states: “In order to ensure an adequate response to different needs and the fair distribution of the offer of activities in favor of the elderly, the Council of State, having heard the Municipalities and the public and private bodies concerned, identifies existing needs and prioritizes interventions to support” (Gran Consiglio della Repubblica e Canton Ticino, 2010).

Brief overview of the nursing homes sector in Switzerland

Historically, nursing homes emerged in Switzerland at the beginning of the 1900s. In this primordial phase nursing homes were conceived as shelters for old people and in particular for lonely and/or poor people. Later, as the number of elderly people in need of care increased, inpatient facilities were transformed into homes similar to small hospitals. From the 1980s onwards, the Swiss nursing homes sector took on a new connotation, approaching the concept of housing and moving away from the hospital concept. The most recent evolution has seen the facilities take the form of residential communities with individual access where each resident has his or her own room and large common areas such as living rooms or the kitchens (Leser, 2015). From the point of view of treatment, on the other hand, the most recent development in terms of positioning within the care offering sees elderly homes taking on a welcoming role for people who have reached the end of their lives, especially people with severe functional limitations caused by dementia, for example (Füglister-Dousse et al., 2015).

In 2019, there were 1,566 nursing homes in Switzerland. Of these, about 31% were publicly owned, about 45% were run by non-profit institutions and the remaining 24% were owned by private and for-profit actors (Ustat, 2018). According to federal statistics, in 2017 nursing homes in Switzerland employed 96,453 full time equivalents. As Table 1 shows, 80% of those employed in the sector are women, 63% of all employees are in care, 27% in technical and hotel services and the remaining 5% are in administration. It is important to note that only 0.13% of the employed people belong to the medical sector; with the exception of health directors, most nursing homes rely on the residents' family doctors.

Table 1: Nursing home staff an overview

Sector	**Male**	**%**	**Female**	**%**	**Total**	**%**
Care	9099	47.17	55455	71.87	64554	66.93
Physicians	64	0.33	62	0.08	126	0.13
Administrative	1455	7.54	3442	4.46	4897	5.08
Technical Services	8672	44.96	18205	23.59	26877	27.87

Total	19290	20.00	77164	80.00	96454	

Source: authors' own elaboration, based on data from: SOMED, 2017

This distribution also has an important impact on the breakdown of costs. Of the 10 billion or so spent annually on the nursing homes sector, 41.5% is spent on care, about 41% on planned activities and daily housekeeping and about 18% refers to other expenses (including administrative costs).

In 2017, 120,000 individual users of nursing homes were registered, of which 34,400 entered during the year. In 2017, the average age of nursing homes residents was 80.4 years for men and 85.4 years for women and the average length of stay was about 2.5 years. For the majority of users, the need for care was between 1 and 3 hours per day. In addition, about 21,300 users had to be hospitalized during 2017 (OFS, 2019). These services were offered by 1,566 institutions, which together provided 99,242 beds and occupied 96,453 full-time jobs with a total expenditure of more than CHF 10 billion per year (OFS, 2019a). In general, there has been a decrease in the use of inpatient services for people over the age of 65 who resided in nursing homes with a change from 6.4% in 2006 to 5.8% in 2013.

Regional differences in the use of elderly care services

It is necessary to underline that at the national level, there are regional differences in the use of formal care or treatment services. The situation can be represented according to the following patterns: i) high use of inpatient facilities, moderate use of home care services; ii) high use of home-care services and moderate use of residential care facilities; iii) average use of both inpatient facilities and home services. The first pattern is prevalent in the following Cantons: Aargau, Basel, Bern, St. Gallen, Schaffausen, Thurgau and Zurich (Ufficio federale di statistica UST, 2018). In this area people enter nursing homes at a younger age and being in better health compared to other patterns presented below. In this case, the proportion of people who use inpatient services without a high need for treatment is relatively high (26.6%). In general, however, the use of formal care remains overall lower than in the rest of Switzerland (Füglister-Dousse et Al., 2015). The second pattern is more prevalent in the Latin cantons and involves people entering nursing homes at an older age and in a worse state of health. At the same time, the number of hours per user at home care services is higher than in the rest of Switzerland. The last pattern characterizes the cantons of central Switzerland and Graubünden. This pattern reflects the characteristics of the other two models with a medical entry into the home at a later age, but with a high number of people in care without the need for treatment that live in a nursing home.

Brief overview of the sector in Ticino

In the Canton of Ticino, the care and assistance of the elderly are regulated by the Law on the promotion, coordination and financing of activities in favor of the elderly (LAnz). The cantonal office responsible for the implementation of the LAnz is the Office for the Elderly and Home Care (UACD) which is under the Social and Health Department. Together with the cantonal doctor's office (as far as the clinical part is concerned), it is in charge of the supervision and control of the sector.

The canton financially supports nursing homes, either directly (part of the so-called "residual financing") or indirectly, through other social protection mechanisms (such as supplementary benefits or health insurance subsidies). On the other hand, the cantonal authorities are also responsible for the ten-year cantonal planning of the nursing homes sector, with the last planning period covering the years 2010-2020. In this regard, it is important to note that

the planning process for 2021-2030 is currently in progress and will for the first time ever be merged with the planning on home care services[1].

A key stakeholder of the sector are the municipalities. They provide the majority of public funding for nursing homes and are often directly involved in the management of the institutions. In fact, there are different forms on how municipalities govern a nursing home: (i) nursing homes that are fully integrated within the municipal administration, (ii) autonomous nursing homes, which are owned by municipalities, and (iii) nursing homes that are managed by foundations established by the municipalities, eventually together with other public institutions.

Another important player in the sector is the association of nursing home directors (ADiCASI), which plays an important role in providing common services to the sector and promoting the collaboration among nursing homes. Further, the two university institutions of the canton (University of Lugano, USI and University of applied science of Southern Switzerland, SUPSI) have an important role for the nursing homes sector. In fact, both provide training for future employees, continuous education for staff, as well as applied research services for continuous improvement of quality care or cost efficiency.

The nursing homes sector is financed by activity-based funding, which are assessment and control oriented towards results. This type of financing scheme has been introduced in 2006 to replace a retrospective cost-based system, which was characterized by the total absence of incentives for an efficient resource management. The system recalls the “new public management” logics, hat is a set of management principles which try to “move the public sector closer” to the performance levels of the private one, in terms of both efficiency and efficacy. The new financing system has also fostered the autonomy and entrepreneurship of the nursing homes. In addition, this reform imposed on each nursing home two mandatory organizational key figures: an administrative director and a health director.

Today the services of nursing homes can be divided into three basic components: housekeeping (administration, cleaning, food and infrastructure), professional care and daily activity assistance. The costs associated with housekeeping and daily activity assistance are borne by the user and, when it comes to pricing these services, each nursing home enjoys entrepreneurial freedom. The costs of professional care, on the other hand, are borne by the compulsory health insurance and the canton. The reimbursement of treatment costs is based on the prior attribution of each nursing homes resident to one out of 12 levels of care, defined by the RAI/RUG system[2].

Today in Ticino there are 68 nursing homes, and the sector offers 4,189 beds, which are annually occupied by about 4,200 residents (Ustat, 2018). From an institutional point of view, 55% of the nursing homes are managed by non-profit institutions, 35% are managed directly by municipalities and the remaining 21% are run by for-profit organizations. The median number of beds per nursing home is 66, with the smallest nursing homes having a little more than 20 beds and the largest nursing home has around 160.

The nursing homes system costs around CHF 460 million per year and invests annually around 50 million. These figures mean that the median cost per billed day is CHF 301, with the lowest being around CHF 240 and the highest being around CHF 370. The two main drivers of costs are the care needs of residents and the characteristics (age and years of services) of the staff.

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[1] Home care is based on the Law on Care and Home Care (LACD).

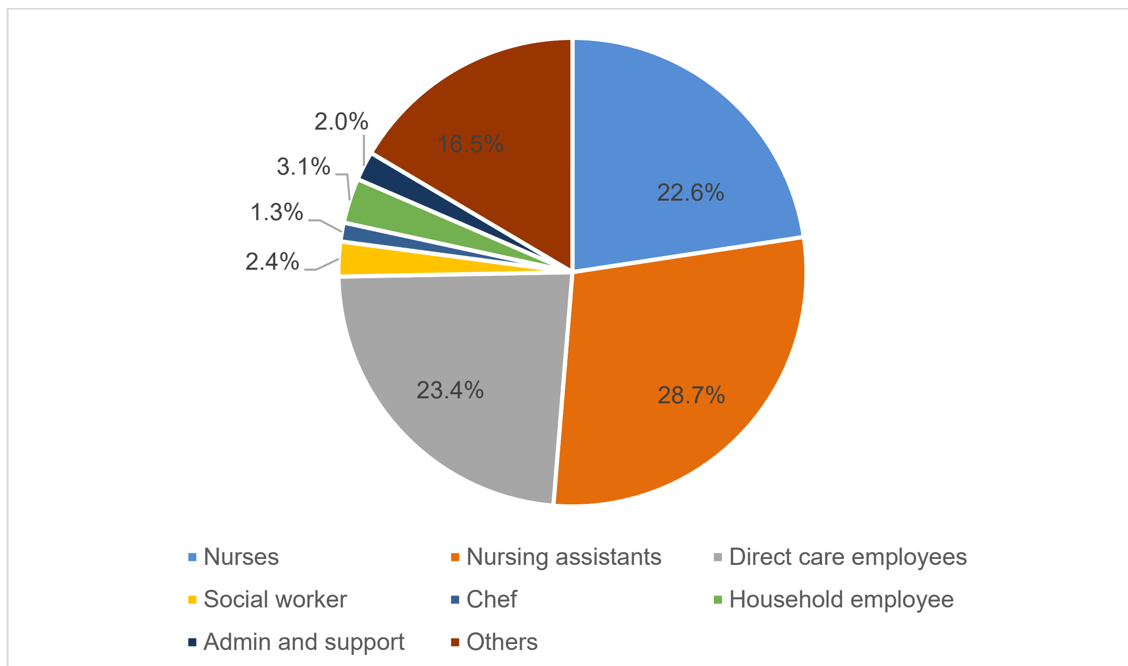
[2] The RAI/RUG is an instrument for care planning based on two components RAI (Resident Assessment Instrument for nursing home residents) and RUG (Resource Utilisation Groups).

The median age of residents is 86.1 years and the median daily care needs are between 130 and 150 minutes, with 55% of elderly people needing between 130 and 190 minutes of care.

As far as the personnel is concerned, the Ticino nursing homes sector currently employs 6,834 people, 5,076 of whom are women. The median age of the staff is 43.8 years, and the median years of service are 4.8; the latter figures are decreasing compared to previous years. Among those employed, about 58% have a Swiss diploma and about 18.5% have a foreign diploma. The remaining 23.5% of the staff has a diploma that is identified as unknown.

As far as employment contracts are concerned, about 72% have a permanent contract, about 21.5% have a short-term type contract and the remaining 6.5% have a contract as a trainee. About 12.5% of employees are middle managers and about 1.5% is part of the board of directors.

Figure 7: Professional categories in the nursing homes sector in Canton Ticino in percent



Source: authors' own elaboration based on data from: SOMED, 2018

Around 75% of the staff is active in care. The remaining 25% are mainly responsible for household, hotel and administration functions. The professional categories are shown in Figure 7.

It is important to note that the composition of the nursing staff (skill-mix) is strictly regulated by the guidelines of the cantonal doctor and depends on the residents' need for care. In addition, salary classes are often fixed by collective agreements that provide salary classes for functions and automatic salary steps for years of service. These two aspects severely limit management's chance to have an impact on the costs.

A new model of care

In recent years, another prominent impulse for change in the nursing homes sector has been provided by the care model designed by the national umbrella organization of institutions for people in need of assistance CURAVIVA (Curaviva, 2016). The model promotes for elderly people autonomy, self-determination and normality of everyday life despite the need for care and assistance, as well as the quality of life in an autonomously configured

living environment, for example giving to residents the possibility to have their own furniture in their room. In order to facilitate this, a direct integration of nursing homes into the local community should be pursued, as well as the integration of home care and nursing homes under the same institutional umbrella. This integration at the local level will allow providing the right mix of care, based on individual preferences and needs.

More info available at: https://www.curaviva.ch/In-evidenza/Il-modello-abitativo-e-di-cure-2030/PUtri/?lang=it

Strategies adopted during the emergency response

Case study: the participants

This section presents, a brief description of the two institutions, which participated in the case study.

Istituti Sociali di Chiasso

The Istituti Sociali di Chiasso (Social Institutions of Chiasso) were initially created by the municipal administration to meet the needs of vulnerable people in the municipality (Comune di Chiasso, 2020). With this in mind, the Istituti Sociali are made up of four services: two nursing homes, a therapeutic day care center and a recreational day care center. In addition to the four services mentioned above, the Istituti Sociali also offers the possibility for elderly and disabled people in the region to use a canteen that offers food at favorable prices. Further, the kitchen of the Istituti Sociali prepares meals, which are distributed to elderly people in the Chiasso area by Pro Senectute.

Casa Soave, which was opened in 1981, is a medicalized home for the elderly located in the center of Chiasso, a small city in the far South of Switzerland, just across the border from Italy. Today the nursing home has 45 single rooms, which allow residents to personalize their rooms by surrounding themselves with personal belongings. The range of services offered includes daily hygienic care, nursing care, medication, physiotherapy as well as pedicure and hairdressing services.

The second nursing home is Casa Giardino, which is also located in the center of Chiasso. It opened in 1993 and has today 82 single rooms of which one is for temporary stays. On the second floor of the facility, a specific department has been created for elderly people suffering from cognitive disorders.

Both homes are a few meters from each other, separated only by a public park. From an institutional point of view the two nursing homes are administered directly by the municipal administration under the social department headed by the deputy mayor Roberta Pantani Tettamanti. The operational management is entrusted to the administrative director Fabio Maestrini, while the medical management to the health director Dr. William Pertoldi.

The two nursing homes are recognized and financed by the canton through a service contract.

Casa anziani Paganini Rè

The nursing home Paganini Rè was created in 1918 thanks to the generosity of Mrs. Flora Paganini Rè, who established it as the new Foundation of the Pio Ricovero Paganini Rè for the Invalids of Bellinzona, the capitol of the canton of Ticino (Fondazione Paganini Rè, 2020). Today the facility accommodates 97 people, of whom over 70% are citizens of Bellinzona. It employs about one hundred people with a full-time equivalent of about 70. The employees also receive support in their working activities from the Sisters of the Adoration of the Blessed Sacrament. The home is located in the center of Bellinzona. The organization and the building are managed by three departments, one for each floor.

The home is managed by a foundation, which is managed by two bodies: the foundation board and the management office. The foundation board is composed of three members and is elected by the Apostolic Administrator of Canton Ticino. Current members are Loris Joppini (president), Giacomo Jurietti and Don Carlo Scorti.

From an operational point of view, the directorate is led by an administrative director, Mrs. Paola Franscini and a health director, Dr. Valentino Lepori. The directors are supported by five heads of services, who are each responsible for one of the following areas: administration, care, rehabilitation-animation, hotel, catering, plus external consultants.

The nursing home has no contract with the canton for recurrent subsidies, but it benefits from a contract concerning LAMAL costs. However, it benefits from contributions from the city of Bellinzona and several municipalities, whose citizens are living in the institution.

Interviewees

The following section summarizes what emerged from the interviews. Overall, the authors interviewed four people. One of the administrative management and one of the medical direction of each nursing home. The interviews were semi-structured, and each interview lasted about an hour. Interviews were recorded, transcribed and then analyzed.

At the Istituti Sociali di Chiasso, the authors interviewed Mr. Fabio Maestrini, the administrative director who is also currently member of the steering committee of “ADICASI”, and Dr. William Pertoldi, the former medical director who is also currently member of the steering committee of STiMeGer, the Ticino Society of Geriatric Medicine.

At the nursing home Paganini Re, Mrs. Paola Franscini, the administrative director and Mrs. Paola Frapolli, the nurse responsible for care were interviewed.

The interviews solely focused on the situation related to the Covid-19 emergency and in particular on the following topics: provision of services; human resource management; information flow; and logistics (personal protective equipment procurement and management of space in the facility). In addition, interviewees were given the opportunity to discuss the regrets, lessons learned and future prospects.

Provision of services

With regard to provision of services both institutions stated that they had to radically change their services after the coronavirus outbreak, moving from being “a home” to being “a hospital”. In particular, all respondents agreed that the most radical change was the closure to visitors. In fact, in recent decades, nursing homes have made important efforts to open up to the community, and today volunteers and family members play an important role in relieving professional caregivers in their daily job. Further, the cantonal directives on the coronavirus have also reduced the number of services offered. In fact, services considered non-essential, such as hairdressing, were suspended in the most acute phase and recreational activities were heavily transformed.

In addition, to safeguard the health of their residents 75% of the nursing homes of Ticino have created a special COVID department within them (Repubblica e Cantone Ticino, 2020i). Representatives of the two nursing homes felt that this was a positive move, although many residents of the nursing homes did not take it positively. For example, the fact that residents had to temporarily change their rooms was not appreciated.

The managers of the Istituti Sociali di Chiasso, believed that the proposal to create a special COVID hospital for the elderly was unsuitable, as many elderly people have cognitive deficits, and it would have been very difficult to move them. In addition, elderly homes have specific skills (for example for accompanying people with dementia) that care-focused institutions, like hospitals, are hardly able to offer.

Since the closure to external visits, both facilities had implemented a video call system to ensure contact between residents and family members. The approach was different between the two nursing homes. For example, one of the nursing homes decided to have an occupational in the room with the resident during the video calls. In this nursing home it was found that many details of the relationship between users and family members are usually unknown to the staff of the nursing home and this is often a cause of misunderstandings between staff and residents.

In this regard the two administrative directors said that one of the most complicated things was managing communication with the residents' relatives. Both agreed that having a key figure, such as an administrative director responsible for communication with families of residents was a critical success factor. In addition, they both felt that the cantonal guidelines and the communication of the institutions made it possible to limit complaints from family members, because thesendocuments provided an external justification for the new rules.

With regard to the employees' safety, the facility managers believe that there were no considerable problems. In fact, protection tools such disinfectant, gloves and masks were easy to find and the nursing homes had no problems in complying with the requirements of the cantonal doctor's office. One director stated during the interview that the friendship with suppliers was more useful in acquiring the necessary supplies than the official channels.

With regard to wearing protective facemasks while working with residents, it was reported that this is more complicated than everybody might have imagined. In fact, the interactions between staff and residents had become more complicated and artificial. With regard to the very first days of the virus spread in the Canton Ticino, it is interesting to note that the staff undergoing the regular flu vaccine was initially not obliged to use the masks when they were in the presence of resident. This, according to one of the interviewees, may have facilitated the entry of the virus into the nursing homes.

In order to control the spread of the virus within the nursing homes, the strategy had been to control daily any appearance of symptoms, even of those that were not directly related to COVID-19. In case of suspicion, residents were tested. During April, the amount of testing was also increased to assess the possible presence of outbreaks and asymptomatic residents. With regard to testing, interviewees reported that during February, March and April they felt pressure by the authorities not to "waste" swabs.

All interviewees believed that costs related to COVID-19 have not been an issue. In fact, the reassurances and measures taken by the Office for the Elderly and Home Care (UACD) were considered to be a sufficient guarantee.

Another aspect that has not been perceived as a problem was that of new admissions. During the period in question only one of the two facilities admitted a new resident, following the recommendations issued by the cantonal doctor and the association of nursing home directors (ADiCASI). Among the recommendations on new admissions, the most controversial aspect was that of preventive isolation (the new resident had to stay in his room for 14 days without having contact with other people). The same procedure was recommended in the case of the appearance of suspicious signs/symptoms in a resident awaiting the outcome of a nose-pharyngeal smear or in the case of a Coronavirus-positive resident in nursing homes without a COVID-19 department. In these cases, the resident could not leave his/her room even if wearing a facemask. The four interviewees pointed out that this measure was justifiable from a safety point of view, but at the same time it is also invasive and has a negative impact on the residents' mental health.

Collaborations

In Ticino, in order to promote unified action in the sector and to overcome its institutional fragmentation (a high number of largely independent nursing homes), the cantonal government immediately set up a "nursing homes working group" at the Cantonal General Staff of Conduct[3].

In this sense, a very important initial role was played by STiMeGer, the Ticino Society of Geriatric Medicine. In fact, proactively, some members of the STiMeGer reached cantonal doctor's office and advised the authorities on the possible consequences of the coronavirus in nursing homes.

In light of the many actors in the nursing homes sector, the authorities decided to centralize the communication in order to avoid fragmentation. In fact, all the information from cantonal or federal authorities directed toward nursing homes was collected by ADiCASI and forwarded to each nursing home’s administrative director. Therefore, this association has had a coordination role between the nursing homes sector and the cantonal authorities. In addition, all the nursing homes were supported by two external medical advisors provided by the authorities to decide whether and when to hospitalize an infected resident.

As far as inter-organizational collaborations in the nursing homes sector are concerned, both nursing homes stated that there was little collaboration and, if so, it was rather based on personal friendships than on institutional arrangements. The same dynamic of selective collaboration applies to between the nursing homes and other health care institutions, such as hospitals. The main collaboration that was mentioned by the interviewees was the one with the civilian service, which both nursing homes made use of to allow contact between family members and residents.

One of the strategic choices made by both nursing homes concerns the access of external doctors to the facilities. The directors of the “Istituti Sociali di Chiasso” initially imposed a ban on outside doctors, while the canton's guidelines were still unclear in this respect. On the other side, the administrative director of the nursing homes Paganini Rè called resident’s doctors asking to avoid visits at nursing home Paganini Re. Generally speaking, there were no problems in February and March and the residents' doctors were helpful. In April, ADiCASI informed the facilities about the cantonal order of doctors' (OMCT) request to guarantee access to external doctors to nursing homes, but despite this, visits by external doctors remained very limited. According to all interlocutors, the absence of external doctors has made it possible to have a single line on management (avoiding the need of coordination) for care within the facilities, particularly with regard to the use of test pads.

Monitoring

The daily monitoring that was required by the cantonal authorities (Cantonal doctor's office and Division of Public Health of the Department of Sociality and Healthcare) consisted of three parts:

1. ADiCASI requested daily information on available staff in order to organize support in the event of staff shortages, which had to be submitted via an online form.
2. The Cantonal General Staff of Conduct requested daily information on the number

[3] The Cantonal General Staff of Conduct is is established by the Regulation on the protection of the population (RProtPop). Its Chief is the Commander of the Cantonal Police (or his substitute). The other members are representatives of the Ticino Cantonal Federation of Fire Corps, the Ticino Cantonal Federation of Ambulance Services, the Cantonal Civil Protection Service, technical services and the Department of Institutions. The task is to conduct operations in case of an emergency situation of cantonal interest.

of cases, the number of people recovered, and the number of deaths related to COVID-19.

3. Further, the cantonal doctor requested every three days detailed information on the health status of nursing homes residents, possible symptoms and test results, using an excel file. On the basis of the data transmitted, the Cantonal doctor's office assessed the presence of any outbreaks in the nursing homes.

Nursing homes stated that the requests did not cause excessive additional work as they were already collecting the required data for internal use when the rule came into force. With regard to the use and assessment of these data by the authorities, both nursing homes had some concerns. In fact, they cited some cases where some nursing homes were placed on an alleged blacklist as possible COVID-19 epicenters without that the nursing homes were informed.

Human resources management and information flow

One of the most debated issues in the media during the COVID-19 outbreak was the dependence of the health system in the canton of Ticino on people living in Italy. In fact, there was a time during the crisis when there was a fear that the borders would be completely closed or that the Italian authorities would oblige its health workers residing in Italy, to serve in Italian healthcare facilities. However, in the case of the two institutions represented in this case study, this did not seem to be a big issue to be concerned with. The interviewees from Paganini Rè stated that they only had one person living in Italy, who had however a Swiss passport. After the decision of the authorities to cover accommodation costs for hotel stays, the employee himself decided to use this opportunity to reduce the journey from Italy to Switzerland, which had become unsustainable. With regard to the “istituti sociali di Chiasso”, which has more Italian employees, the director said that they were ready to host frontier workers if necessary. However, this opportunity was only used by a few to avoid the road route. Moreover, it emerged that through indirect and personal contacts with the Italian authorities’ nursing homes managers were constantly updated on the evolution of the situation, which greatly reduced uncertainty. Both nursing homes agreed that dealing with employees of the nursing homes sector living in Italy was where the cantonal authorities had the greatest difficulty in providing clear answers.

Opinions on employees' fears of the virus differed between the two institutions. According to Paganini Rè, their employees were afraid to bring the virus inside nursing home. This generated a certain anxiety among the employees who repeatedly asked if what they were doing was correct. In contrast, the directors from “istituti sociali di Chiasso”, believe that the employees' main fear was to bring the virus into their own home. The two directors hypothesized that staff living in Italy was subject to different media images and used them as a reference, which created more fear than staff that was exposed to the Swiss media only. In this regard, the administrative director of the “istituti sociali di Chiasso” reported that in the hours immediately after the first case was reported in the cantonal media, he received a series of phone calls from employees announcing that they felt sick. As a result, the management was forced to take measures to check the actual state of health of their employees. According to two directors, there is a need, on one hand, to improve the health literacy of employees so they can better assess the information coming from the media and, on the other hand, to set up training that is specific to pandemics, using techniques that are in use for other possible emergencies (e.g., fires). In any case in the event of absences related to COVID-19, the cantonal authorities reassured each nursing home that there would be no impact on the service contract between each nursing home and the canton. Therefore, both nursing homes were not worried about this specific issue.

In an attempt to counteract the anxiety developed by the staff working in nursing homes, the cantonal authorities decided to provide a psychological service, which all interviewees considered to be useful. In particular, they felt that this service offer provided a safe space for employees to express their fears without the judgement of their superiors.

According to the interviewees, work shift management was not overly complicated, as the staff was used to working in shifts and similar situations related to influenza pandemics. In general, there was a great deal of willingness and flexibility on the part of the staff, and personal situations could be taken into account when assigning shifts. From an operational point of view, it emerged that nursing home Paganini Rè created in response of the COVID-19 a dual planning, i.e., normal and emergency planning. In this way the staff was prepared to the situation. This was only possible due to the fact that the institution had more time to prepare than compared to other institutions that were affected earlier by the coronavirus.

Interviewees unanimously stated that there was a major change in the decision-making process during the crisis period. All said that for years they had been trying to develop a horizontal management model based on employee feedback but during the crisis they chose to verticalize management. In both nursing homes there was a small coordination group composed of the administrative director, the medical director and the care manager, to which, depending on the needs, the sector managers (hotel sector manager, recreational activities manager, etc.) were added. In the case of both nursing homes organizational information was sent from ADiCASI to the administrative director who summarized it and shared it with the coordination groups. The nursing homes administrative directors shared the information with their staff during daily meetings. Some aspects were identified as crucial in the communication process. The first was the importance of oral communication. Although the new working procedures were always provided in written form, oral communication made it possible to control the level of understanding and to develop a common interpretation of controversial passages. The second important aspect was related to employees' trust in management. Some new working procedures imposed by the guidelines cannot be discuss as usual in a participative way. In this regard, one of the most critical aspects was the continuous updating of the guidelines, because some new working procedures were sometimes contradicting previous ones. In this sense the aspect that facilitated trust was the constant presence of the health director (Dr. Valentino Lepori), which ensured the staff that someone they trust and with the right set of competencies was checking the implementation of the new working procedures. The third important aspect was the need for a "do with" strategy, where a nurse took on the task of showing and carrying out what was prescribed as new working procedures for the first time with the staff. This made it possible to correct any problems and to avoid the directives being perceived by the employees as something imposed by those who actually have no knowledge of daily work.

Among the positive changes recorded by both nursing homes during this crisis was an increase in teamwork and the overcoming of certain emotional barriers between employees. Interviewees believed that staff felt like not needing to wear an emotional mask (lying about their feelings to look professional), but that they were to express all their emotions. According to nursing homes administrative directors, this has made work easier. In general, one aspect that is usually underestimated in crisis situation is the collaboration between management and ownership. Nursing homes respectively felt the trust of the foundation board of Paganini Rè and of the Municipality for Istituti Sociali di Chiasso. The administrative director of the Istituti Sociali di Chiasso pointed out how the specific skills developed in preventing infections spreads at the nursing homes have been useful to the entire municipal administration, for example in the school sector.

Logistics

Personal safety equipment procurement

In Ticino, unlike in other countries, nursing homes have not suffered from a lack of personal safety equipment. On 22 January, the cantonal administration informed the nursing homes of the need to find personal safety equipment. The supply activities were then redirected to the Office of the Cantonal Pharmacist, which in turn is supplied by the army pharmacy, which is responsible for the procurement and stockpiling of medical equipment under the National Pandemic Plan (Dipartimento federale della difesa, della protezione della popolazione e dello sport, 2020).

In the case of swabs, however, as in other countries, the cantonal guidelines suggested that priority should be given to people with serious symptoms being taken to a hospital. In the nursing homes sector swabs were carried out on nursing homes residents only if necessary. In Ticino, as of 24 April 2020, 817 out of 4,185 nursing home residents had been tested and of these 441 were positive (Repubblica e Cantone Ticino, 2020i). The decision whether or not to test a resident was left to the health directorates of the nursing homes with a few exceptions (in which there was suspicion of internal transmission) that were imposed by cantonal doctor's office, and in only few occasions all the residents of a nursing home in Ticino were tested simultaneously. The same applies to staff, where 169 out of 5,500 persons had been tested as of 24 April.

Buildings

Among the major challenges faced by both nursing homes was the creation of a specific COVID-19 department. As far as this specific department was concerned, it was suggested by ADiCASI to create an antechamber to prepare protective equipment before entering the department itself. According to the ADiCASI directive, in these departments all material had to be delivered through the non-contact principle. In addition, the staff dedicated to the COVID-19 department had to avoid any contact with other colleagues.

Among the more complicated aspects was the management of entries by people or material. On the one hand, there were relatives who entered on permission to visit a loved one close to death. On the other hand, technical support personnel, such as technicians for the lift or coffee machine were supposed to enter. In both cases the outsiders had to be instructed, provided with protective equipment, and followed by staff of the nursing home. Every surface touched had to be disinfected. This process and the need to transport all supplies of the nursing homes unloaded the deliverer outside of the respective building (after disinfecting all the supply), caused considerable additional work for the staff (usually supplies are delivered inside the nursing home).

In addition, both nursing homes highlighted the importance of having a private garden where residents were able go out for walks during the lockdown. The nursing homes administrative and medical directors feel that the possibility of going outside helped the residents to suffer less of the isolation and this should be taken into consideration when building a new nursing homes to be able to offer this possibility during a future pandemic.

Self-reflections and lessons learned

All interviewees considered the presence of the media to be excessive and overall reporting was perceived as mostly negative. This has put pressure, particularly on the health sector, and which may have, according to the interlocutors, increased work to protect themselves from possible problems rather than focusing on the quality of services.

The media pressure was aggravated by the fact that some nursing homes in Ticino had to lead, due to fact that nursing homes had infections already in February, the fight against the virus. In fact, the cantonal guideline was not ready when the nursing home had the first infections. The administrative and medical directors of these nursing homes felt a sense of abandonment by the cantonal authorities during the first days after the infections. In addition, one of the interviewees reported that on several occasions there were no immediate answers to specific requests, but the authorities had to wait for a more in-depth examination before giving an answer to a specific issue.

Another issue that emerged was the absence of official benchmarks with other nursing homes or other actors in the sector. The interviewees had to create an informal comparison based on personal relationship with other directors. The interviewees believed that this informal exchange of information made it possible to adopt solutions that otherwise would not have emerged. From a practical point of view, the comparisons were therefore not institutionalized but sought through personal knowledge.

Among the lessons learned was that during times of crisis there is an increased need for the continuous presence of the health director and geriatric doctors to be available. In addition, good collaboration between the figures of the administrative director and that of the health director is considered to be an important factor.

In addition, at the nursing home Paganini Rè it was found that during the period without visits and without internal recreational activities the elderly were generally calmer, slept better and needed less medication. This raised some internal reflections if the residents were not too stimulated and stressed.

Regrets and future prospects

Two main fears emerged in the interviews. The first one was that a prolonged closure to the outside world could eventually turn nursing homes back into exclusive places of care, namely hospitals. The second concern was the attention to residents, because with prolonged closure some negative dynamics emerged. For example, the management of one nursing home found that some residents were still in their nightgowns during the afternoon. The request to wear the nightgowns came directly from the resident who, given the absence of visits, did not see the need to change her or his clothes. In this sense the fear was that residents without visits would have less incentives to maintain certain positive habits for themselves.

According to the interviewees, media pressure also has an effect on the work of the cantonal doctor. In fact, it can be seen that over time directives were becoming more bureaucratic and left less room for maneuver for nursing homes. The assumption was that this phenomenon was caused by public criticism towards the cantonal doctor's office and towards nursing homes.

The interviewees noted that it was difficult to manage a compartmentalized home and therefore the containment of the virus within the nursing homes was also complex. With this in mind, nurses with wider competencies could act as leaders, and it would be important to recruit or identify people with the right characteristics to play this role in times of crisis.

The medical director of the Istituti Sociali di Chiasso was concerned that in the event of a second spike in the number of cases, some areas of Switzerland would be less affected, which might lead to excessively bland rules. In the worst affected areas if the Canton is not able to set more restrictive rules, this would put nursing homes sector residents at risk.

In general, all interviewees agreed that the role of nursing homes as a key institution to cope with possible pandemics needs to be reviewed. The general impression was that at

the institutional level and from a communication perspective, priority had been given to the hospital sector and care, rather than to the containment and protection of the most fragile parts of the population. Among the major doubts raised by the administrative director of nursing home Paganini Rè, is the one that in the next few years many might critically reflect on whether to enter a nursing home or whether to suggest to a loved one to enter in a nursing home.

Recommendations

In light of the interviews and the experiences and dynamics that were experienced by the directors of the nursing homes, the authors identified following recommendations to increase the capacity of response in front of a new pandemic in the nursing homes sector:

Recommendation	Rationale
1. When renovating or constructing the buildings, it will be necessary to provide space for specific departments (such as a COVID-19 department) and to create departments that can be isolated from other parts of the nursing home.	The nursing homes selected made the best use of available space and tried to separate the flow of people or material in the best way possible. Rehabilitating ex-post an unsuitable space is much more complicated than having a space already designed to be adapted to pandemic situations.
2. There should be moments of exchange and discussion between management figures.	During a pandemic crisis, despite the overburdening workload, it is necessary to provide moments of exchange and mutual learning as solutions that have emerged in some institutions can be of great help to others.
3. The psychological support of staff and family members must be strengthened.	In situations of high stress such as those caused by COVID-19 it is important to have a safe space from a psychological point of view where you can express your problems and share your difficulties. From this point of view, the activation of a psychological service makes it possible to prevent situations from degenerating. In this sense these services could be inserted as an integral part of the pandemic response.
4. The role of the health director needs to be strengthened and it is necessary to ensure that in the event of a crisis he/she has time for the elderly home.	There are no doctors inside the nursing homes. Residents' doctors often have no geriatric skills. In the event of a pandemic, it is necessary to have a coordinated response and reduce medical fragmentation. External doctors can be a vehicle for the virus to enter the facilities. In addition, care staff can benefit from working with the health director.
5. A greater attractiveness and visibility of nursing professions is urgently required.	The SARS-CoV-2 pandemic outbreak has undoubtedly revealed worldwide how important the nursing staff is, in order to ensure adequate healthcare. According to the Swiss Professional Association of Nurses (SBK– ASI), by 2030 in Switzerland, there will be a lack of about 65,000 nurses. Today, Switzerland

	already needs 11,000 nurses and almost 50% of the workers will quit the job over a period of a few years. Canton Ticino experienced firsthand the fear of potentially finding itself ”without sufficient staff”, if Italy would have decided to close the borders. It is therefore important to find strategies that would increase the attractiveness of the profession, so that nurses have both better working conditions and more time to take care of their patients, and therefore to decrease the staff turnover.
6. Periodic trials of the pandemic plan	Specific skills for an exceptional period are difficult to assimilate by staff due to lack of training moments. In particular, the correct use of protective devices and health literacy can be improved through recurring exercises. As with fire safety tests, it is conceivable to think of targeted and recurrent exercises that allow for maintaining or developing an adequate response.

Conclusions

The aim of this work was to describe the organizational solutions adopted to fight the SARS-CoV-2 pandemic in the nursing homes sector during the first five months of the SARS-CoV-2 pandemic in the nursing homes sector of Canton Ticino.

The study identifies some main weakness that need to be addressed by the policymakers. In particular the need to favor best-practices sharing, the need to have a benchmark on which to orient one's response to a pandemic situation and the need to improve the retention of professionals, including psychological support, and to improve the specific skills of staff, also through periodic exercises, as well as the development of better institutional communication with third parties (media and family) represent a good basis for future reflections.

Situations such as those caused by a pandemic present a complex challenge, also because until a few years ago they were a rare exception. With the intensification of the frequency of these phenomena it becomes focal to keep an accurate track of what has been faced and the solutions adopted.

These recurrent appearances of this kind of situations on a global scale oblige all co-involved actors to review their response systems at the local level. In this sense, given the strong heterogeneity of contexts, it is impossible to find a univocal solution, but it is necessary to develop a system that allows to learn from time to time and to refine solutions at local level.

The study presents some major limitations. In fact, the research is based on a small number of interviews. In particular the absence of operational figures and users (or their families) could have provided another perspective showing more operational problems. In any case we can still assume that the biggest problem encountered by the operational figures were reported to the managers and have been detected through interviews. Another major concern is the representativeness of the three nursing homes in the nursing home sector of Canton Ticino. This can limit the ability to generalize the results, but due to characteristics of the chosen nursing homes this should not be a problem.

Disclosures

Ethical issues

Not applicable.

Competing interest

The authors declare that they have no competing interest.

Authors' contribution

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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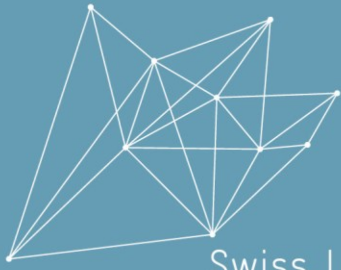
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