

Disruptive crisis management: lessons from managing a hospital during the COVID-19 pandemic

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Received 24 February 2021
Revised 2 July 2021
8 September 2021
25 November 2021
20 January 2022
Accepted 15 February 2022

Abstract

Purpose – Healthcare organizations worldwide were badly hit by the “surprise” of the pandemic. Hospitals in particular are trying hard to manage problems it caused, searching for solutions to protect the health of citizens and reorienting operations. The implementation of resilience solutions in the coping phase and the ability to react promptly and redefine activities is essential. Integrating crisis management and resiliency literature, this paper discusses how health organizations were able to cope with adversity during the crisis.

Design/methodology/approach – The research is conducted through a case study of a large Italian hospital, the Gemelli Polyclinic Foundation, which was one of the leading hospitals in the Italian response to the pandemic.

Findings – The case reports actions taken in order to continue functioning and to maintain core activities despite severe adversity. The overall response of the Gemelli was the result of the three types of response: behavioral (effective leadership), cognitive (rapid resource reallocation) and the contextual reinforcement (multiagency network response). The authors highlight how an integrative framework of crisis management and resiliency could be applied to healthcare organizations in the coping phase of the pandemic. The experience of the Gemelli can thus be useful for other hospitals and organizations facing external crises and for overall improvement of crisis management and resilience. Responding to crisis brings the opportunity to make innovations introduced during emergencies structural, and embed them moving forward.

Research limitations/implications – The paper focuses only on the coping phase of the response to the pandemic, whereas building long-term resilience requires understanding how organizations accumulate knowledge from crises and adapt to the “new normal.”

Originality/value – The paper responds to the call for empirical studies to advance knowledge of an integrative framework of crisis management and resiliency theories with reference to complex organizations such as healthcare.

Keywords Crisis management, Healthcare management, Resiliency, Pandemic, COVID-19

Paper type Research paper

Introduction

Epidemics and health crises have a devastating impact on economic and social aspects of society (Rebmann *et al.*, 2009), as well as on health, in terms of personal injury or death. Every



epidemic has its own history and impacts the community differently. But healthcare organizations are probably the most heavily affected because of the substantial increase in demand for their services and the flow of patients seeking a cure, and their ability to effectively provide patient care and respond to myriad healthcare needs of the affected population is often badly compromised. If not properly managed, patient flows can leave individual hospitals unable to cope, and thus affect the entire health system. The effective management of turbulent events such as epidemics is thus a major challenge for healthcare organizations, and the immediate availability of resources is a necessary but not sufficient condition to meet the challenge.

Flexibility of the organization, capability of management and support from institutions are just some of the elements that determine a hospital's success in overcoming an emergency (Kaji and Lewis, 2006; Rebmann *et al.*, 2009; Andreassen and Borch, 2020; Orth and Schuldis, 2020). Organizational resilience, defined as the ability to maintain reliable functioning despite adversity (Meyer, 1982), is essential in times of crisis (Son *et al.*, 2020).

The concept of organizational resilience is becoming increasingly recognized as important because of the number of unforeseen factors which can impact on daily life, and differences in the way surprise manifests in different organizations (Paraskevas, 2006; Cristian, 2018). There is also a need to respond to extreme environmental changes which can threaten organizational survival (Orth and Schuldis, 2020). Although the concept of what constitutes a crisis is subjective and has multifaceted influence on "intricately structured organizations" (Randolph-Seng and Atinc, 2020), we link the COVID-19 crisis for healthcare organizations to the three key components of crisis:

- (1) It threatened high priority values, such as delivering care for all the population indiscriminately;
- (2) Decisions had to be taken in a limited amount of time;
- (3) It was unexpected and unanticipated by healthcare organizations.

Growing interest in the concept of organization resilience has given rise to an increasing number of studies investigating unpredictable events and the ways in which organizations can anticipate and contain them (Bazerman and Watkins, 2004; Williams *et al.*, 2017). The growing need to understand how organizations can manage crises and absorb the various levels of adversity has resulted in studies linking crisis management to resilience (McEntire, 2013; Van Der Vegt *et al.*, 2015; Williams and Shepherd, 2016). The studies are however still low in number, and there is a great need to broaden knowledge in this area (Williams *et al.*, 2017). In addition, the debate on COVID-19 is mainly informed by a policy perspective, while the response of hospitals to the pandemic is still little explored (Fanelli *et al.*, 2020). Nevertheless, in the real world, healthcare organizations worldwide are seeking to manage problems brought by the pandemic, pursuing strategies to protect public health, reorienting operations and strengthening collaboration. Thus, this paper analyzes the strategies implemented by the Agostino Gemelli Polyclinic Foundation (the "Gemelli"), a large Italian hospital in Rome, to minimize the effects of the COVID-19 pandemic. We use the theory of crisis management and resiliency theory to describe the rapid response of the Gemelli with reference to cognitive and behavioral response, and contextual reinforcement. Thanks to the support and cooperation of key stakeholders, effective management and rapid top management response, the Gemelli established new ways of responding to the challenges of the 2020 pandemic. The case study provides powerful insights into scenarios and best practices for the effective management of health organizations facing current or future outbreaks of disease. Furthermore, by integrating the theory of crisis management and the theory of resilience, the paper makes a contribution to crisis management literature, which is

as yet diverse and uncoordinated, and which fails to offer core conclusions in terms of recognizing key problems or paths forward (Bundy *et al.*, 2017).

Managing during unexpected events: crisis as “event” or crisis as “process”

The increasing number of sudden events, terrorist attacks and natural disasters as well as climate change have brought management capacity in cases of disaster and adversity into the spotlight (McGuire and Schneck, 2010). Preparedness, management and recovery from emergency events is essential for governments at all levels (Kettl, 2006; McGuire and Schneck, 2010) to effectively mitigate losses and damage (Huang *et al.*, 2020). Although during the first wave, the debate on COVID-19 was dominated by a policy perspective emphasizing effective contact tracing and government communication (Huang *et al.*, 2020), previous crises, such as Hurricane Katrina and SARS, showed that other aspects are important as well as government. Deficiencies and mismanagement in the healthcare infrastructure response have sometimes been amplified by mismanagement in a single organization (Rodriguez *et al.*, 2007). Indeed, there is a need to identify factors which allow healthcare organizations to promptly and affectively respond to unprecedented events such as pandemics. The case of the Gemelli, presented in this paper, shows how a single organization can make a resilient response, rapidly altering strategy and organizational mechanisms to adapt to unexpected events.

At the level of a single organization, each level is required to reconsider practices, acquire new capabilities and bring in innovative measures to meet the challenges of an environment that has become much more uncertain and volatile. When crisis strikes, many organizations find themselves ill prepared and lacking effective mechanisms to continue operations (VanVactor, 2011). Crisis management is the set of preparatory and response activities aimed at the containment of crisis and its consequences, and overcoming the various threats (Ansell and Boin, 2019). It is essential to lessen the effects of crisis.

Crisis management has been conceptualized as having different stages (Alexander, 2002), before, during and after the event: anticipation, coping and adaptation (Duchek, 2020). Overall, these three stages aim to minimize impact and recover (Khan *et al.*, 2008). In the literature, different approaches and focuses can be identified according to the nature of crisis (Pearson and Clair, 1998) and their impact over time, i.e. whether the effects are short or long term (Mithani and Kocoglu, 2020):

- (1) *Partially unknown events*. These are emergencies that occur with regularity (floods, forest fires in specific areas) (Cunha *et al.*, 2006). For partially unknown events, the literature refers to crisis “as process” (Williams *et al.*, 2017). They require preparedness and rational planning before potential crisis occurs, including emergency prevention, preparation and prior monitoring. The planning needs to be underpinned by information about the type of crisis, information analytics and a high amount of data (Cinnamon *et al.*, 2016). Plans in fact can be developed to match potential scenarios to minimize the effect of crisis or proactively prevent the occurrence of crisis itself (Simpson, 2008) and accumulate learning so as to be better prepared for future (Jacques, 2010). There have been calls for crisis planning to be integrated into organization strategy process (Preble, 1997; Mitroff and Alpaslan, 2003; Pollard and Hotho, 2006) as well as calls for dissemination of crisis plans (Penrose, 2000; Cloudman and Hallahan, 2006). Other researchers note that plans need to be laid to provide an adaptive response to crisis stress, including actions and procedures to be adopted in the case of different types of crisis, to mitigate effects beforehand and to respond to adversity (van Der Veegt *et al.*, 2015). This stream of literature includes a focus on process perspective and the need to understand crisis-fostering environments, and processes of organizational weakening.

- (2) *Totally unknown events or crisis that unfolds in unforeseen and inconceivable ways* (Dror *et al.*, 2001; Rosenthal *et al.*, 2001). This type of crisis cannot be controlled (Tsoukas, 2005). This stream of literature perceives crisis as “an event” rather than as a process, given the differences in the nature of external threats and the impossibility of mapping all possibilities leading to and preventing a crisis scenario (Clarke, 1999; Ansell and Boin, 2019). It is not always possible to predict or plan for crisis. The novel nature of crisis means there is no single model of response, and that management should rather implement a decision-making process which facilitates adjustment (Jones, 2006) possibly based on modular actions (Norris *et al.*, 2020). Strategy is realized in actions (Simpson, 2008), and as management in crisis often entails “managing under ignorance,” an incremental approach is recommended for adopting strategies. The most effective leadership depends on the type of event (Boundy and Pfaffer, 2015), but in all cases, it is essential to have the capacity to improvise decision-making (Drabek, 1985; Norris *et al.*, 2020), and to scale and mobilize resources across different levels of the organization flexibly, and coordinate techniques effectively. Risk taking is a key aspect of management (Feldman, 2004; Wilding and Paraskevas, 2006) in which crisis management teams need to balance bureaucratic and static models with flexibility (Bigley and Roberts, 2001) and develop new roles (Bechky and Okhuysen, 2011).

In this study we focus on the second stream of literature and consider the COVID-19 pandemic as an unknown event or series of events (Zuckerts *et al.*, 2020). Although a similar pandemic had been widely predicted, the scale of disruption caused by COVID-19 was not, and this places the pandemic clearly in the category of a crisis event. Previous planning turned out to be ineffective, and neither previous experience nor consistent guidance from government agencies were of help when the pandemic struck (Norris *et al.*, 2020).

An integrative framework of crisis management and resiliency

Crisis management and resilience are two aspects of the same challenge – the challenge of adversity. The way in which crisis and crisis management are theorized has significant implications for the conceptualization of the theory of resilience (Williams *et al.*, 2017). Other researchers report that after facing and overcoming a crisis, the activities and relationships experienced during adversity can be a stimulus for reshaping an organization so that it is more prepared to face a future adversity (Duchek, 2020). Crisis response thus should be viewed as a complex system with fuzzy boundaries. The overall ability to cope with the unexpected is closely related to resiliency as the ability to develop and implement solutions (e.g. Reilly, 1993; Jaques, 2007; Dzigbede *et al.*, 2020). Survival and response to unprecedented events have been embedded in human nature since our earliest evolution, and today are reflected in an organization’s ability to survive and adapt to change (Mithani and Kocoglu, 2020). But despite this long-term familiarity, our understanding of organizational survival with regard to life-threatening events is limited (Mithani and Kocoglu, 2020).

The integration of theories of crisis management and resiliency provides new insights on how an organization anticipates and adjusts, and responds to adversity (Williams *et al.*, 2017). The relationship between resilience and emergency has been studied from different perspectives. For example, Boin *et al.*, (2010) highlight why resilience is needed during crises. Other researchers have focused on the causes of emergencies and the consequent resilient approaches that can be adopted (Wise, 2006; Boin and McConnell, 2007). Other researchers have investigated the factors that can hinder or promote resilience during crisis states (Bigley and Roberts, 2001; Buck *et al.*, 2006). In general, however, most studies focus on the policies

that public administrators should adopt to deal with a crisis (Boin and McConnell, 2007). There are relatively few studies integrating the two theories of resiliency and crisis management from the point of view of the single organization (Son *et al.*, 2020) and even fewer on empirical cases.

In the integrative framework proposed by Duchek (2020), the response from the organization point of view can be seen in terms of the following three capabilities (Lengnick-Hall *et al.*, 2011):

- (1) *Cognitive capabilities* – used to understand environmental developments and make appropriate decisions (Dewald and Bowen, 2010). Developing solutions in the face of crisis is always a combination of sensemaking and acting (Weick and Sutcliffe, 2001; Weick, 2015), which means management must be reactive (Hanson, 2003), dialogue effectively with the organization in order to co-create a shared vision (Mitroff, 2004) and define clear objectives (Bolden, 2011). In the face of extreme adversity, flexibility of decision-making processes is crucial. Rigid decision-making processes, in fact, can aggravate the existing situation, generating even more disruptive outcomes for the organization (Bonanno *et al.*, 2010; Rahmandad and Repenning, 2016; Mithani, 2020). Faced with a crisis, organizations should tap into available resources and make timely decisions ranging between “staying the course” or “freezing” (Mithani, 2020) and deviating from planned routines. The decision-making process needs to include adequate processing of information, clear communication at all levels of the organization, including an effective adaptation to the new relation between leaders and followers (Hinojosa *et al.*, 2020) and the effective flow of information to external stakeholders (Comfort, 2007; Coombs, 2015; Pangarkar, 2016).

Although top management usually has distinct preferences for decision-making styles, these approaches are not mutually exclusive (Cunha *et al.*, 2006). A sound response in fact often takes advantage of different approaches, including improvisation (Tabesh and Vera, 2020).

- (2) *Behavioral capabilities* – an extension of cognitive response and include individuals' actions and solutions in addressing the adverse events (Lengnick-Hall *et al.*, 2011; Weick, 2015; Rahmandad and Repenning, 2016). Behavioral capabilities comprise strategic actions and tactics involved in resilience, as well as specific organizational activities that can facilitate adaptation to external turbulence. As with other aspects of the resilience process, behavioral responses to adversity involve the interaction of several elements at various levels. Behavioral capabilities should ensure that resources are used and necessary actions are taken, in a balance between various actions and structured functional habit (Williams *et al.*, 2017). At times of severe adversity, when decisions must be made promptly and failures can have dramatic consequences, both formal and informal coordination mechanisms are important (Faraj and Xiao, 2006). Redefinition of activities, including effective mobilization of personnel and resources and a well-functioning emergency operations center, is important. At the same time, it is crucial for leaders and managers to adapt, and be willing to recognize the failure of managerial intuition, and change strategy when new data and solutions arise (Norris *et al.*, 2020).

Emergent aspects must be satisfactorily blended with established aspects (Quarantelli, 1997) including coordination tools, to ensure that new roles and tasks work effectively and that decision chains are smooth and rapid, particularly on critical aspects (Comfort, 2007), inside and outside the organization. It is thus necessary to use teams, or task forces, and coordinators (Jones, 2013), and set up networks based on stakeholder collaboration and coordination (Bynander and Nohrstedt, 2019).

- (3) *Contextual reinforcement* – essential to develop consistent responses to crisis, as it provides the setting in which cognitive and behavioral capabilities are enacted and integrated (Lengnick-Hall *et al.*, 2011). Research in this area covers diverse theoretical approaches, but there are few empirical investigations. Some studies find that positive stakeholder relationships can mitigate the potential damage from a crisis and the risk that crisis will disrupt the organization (Kahn *et al.*, 2013; Coombs, 2015).

The uncertain context that characterizes crises generally brings the need to share information, exchange resources and build collaboration with other subjects. Complex problems are best solved through multi-actor collaborations in networks and partnerships that help mobilize valuable resources, spur innovation and build common ownership over joint solutions (Torfing, 2019; Ansell *et al.*, 2020). Organizations should not believe they are an island; they must act as part of a wider network in orchestrating and facilitating joint responses. This involves diverse agents in various functions of an organization, performing one or more crisis response tasks (Paraskevas, 2006; Pangarkar, 2016) in a multi-stakeholder network response (Pramanik *et al.*, 2015), including proper division of labor and delegation of tasks (Quarantelli, 1997) together with decision-making and overall organizational coordination (Day and Schoemaker, 2004).

Resiliency in the healthcare sector

Healthcare organizations are those which are under the strongest external pressure when disasters occur because of the big flows of patients and the safety related issues they face (Maunder, 2004; Fanelli *et al.*, 2020). When a pandemic strikes, they need to absorb, respond and recover from an internal and external set of unprecedented inputs effectively, and at the same time maintain and expand their ongoing clinical activity (Rodriguez and Aguirre, 2006), adapting rapidly to new requirements (Bourrier *et al.*, 2019).

Recent research has put forward a framework to integrate the fragmented research on organizational responses to extreme threats (Mithani, 2020), but the freeze-flight-fight-fright response framework is not appropriate to healthcare organizations. Their mission and the sector in which they operate means they do not fit into the framework. Healthcare organizations cannot afford to opt out of a state of hypervigilance; they need to re-adapt rapidly to respond patients' need for quality care and they are unable to leave the market.

COVID-19 surprised healthcare organizations in terms of issues (the pandemic itself) and process (redefinition of hospital strategy). The pandemic falls into the category of events causing "loss of meaning," which provide a shock for organizations and force them to make a fundamental re-analysis of their assumptions and habitual behaviors (Liu *et al.*, 2018).

It forced hospitals to develop a resilient attitude in order to survive. Hospital activity during the crisis was redefined to ensure safety for workers, through various clinical pathways, while at the same time the continuity of essential medical services had to be ensured (Persoff *et al.*, 2018). The severe and uncontrolled environmental phenomenon of COVID-19 necessitated the re-determination of management practice. Its impacts on the structure of healthcare organizations included the following:

- (1) Reconsideration and modification of logistics. Responses in terms of decisions concern both therapeutic and managerial pathways, and are closely linked to clinical solutions (Demiroz and Kapucu, 2012).
- (2) Redefinition of factors which build short and medium term financial equilibrium between cost and revenue (Aguirre *et al.*, 2005).
- (3) Re-determination of management in its operational contents in relation to the new strategy. Every crisis is unique, and management was required to lead along paths

not normally traveled (Van Santen *et al.*, 2009). It was required to identify new roles and responsibilities in order to meet new operational needs in a new situation (Drabek and McEntire, 2003; Boin and McConnell, 2007; Wang *et al.*, 2009).

Although there exist various research studies on crisis management and resilience, the organizational practices currently followed are still largely unmapped and are mainly discussed on the basis of opinions or general considerations rather than empirical studies or concrete examples (Williams *et al.*, 2017; Duchek, 2020).

In response to this gap, we apply the organizational response to the adversity framework developed by Williams *et al.* (2017). We focus on the key “coping phase,” which is after “anticipation” and before “adaptation” in the resiliency process. We apply the framework to the concrete example of the Gemelli, a healthcare organization facing the crisis of COVID-19. The research seeks to identify conditions under which a complex organization, such as healthcare organization, can develop effective solutions in the short run in response to unprecedented situations. Identifying the conditions for developing a resilient response during crisis is important for the single healthcare organization, potentially exposed to threats which cannot always be identified, and to unexpected types of crisis. In the literature of crisis management these are termed “crisis as events.” Healthcare organizations were required to continue their usual activities for non-COVID-19 patients at the same time as responding effectively to the crisis. It was fundamental for overall society to avoid the risk of further outbreaks as well as for the survival of the single organization for them to “bounce back” with rapid response and innovative solutions. The actions undertaken by the Gemelli and its adjustment to new needs are thus discussed with reference to types of response to major disturbance, classified as cognitive, behavioral and contextual reinforcement (Williams *et al.*, 2017). We thus seek to answer the following question: *How did healthcare organizations implement a resilient response during the COVID-19 crisis in the coping phase?*

The COVID-19 pandemic in Italy

Scientific studies including pronouncements from the World Health Organization sounded plentiful warnings to governments and policymakers around the world (Webby and Webster, 2003; Mills *et al.*, 2004) of the possibility of a serious outbreak of influenza resulting from virus mutation. But the advice to put into place specific plans for pandemics, and test organizational readiness (Stöhr, 2014; Jester *et al.*, 2018), and the occurrence of other global pandemics during the last century (e.g. 1918, 1957, 1968 and 2008) (Nicholson *et al.*, 1998; Maunder *et al.*, 2008) were not sufficient to prevent the COVID-19 pandemic of 2020 with its devastating effects on society. COVID-19 was in fact the most serious pandemic to strike countries all over the world since the early 20th century. Appearing in Wuhan, China, toward the end of 2019, it spread rapidly worldwide, moving from east to west. After first striking China, South Korea and Iran, the virus struck Europe, particularly Italy and Spain, and then the United States and Latin America.

Italy was the first European country to be seriously affected by the virus, and soon overtook China both in number of deaths (March 19) and number of positive patients (March 27). The number of positive cases increased dramatically in the first phase (March–April) and again in the second phase (October–December). Eight months after “patient zero” was admitted to Codogno hospital (Lombardy) on February 18, 2020, the total number of people testing positive reached 1,888,144.

The Italian government thus almost immediately brought in severe restrictions on movement and lockdowns with the aim of “flattening the curve” of the number of patients requiring hospitalization at the same time (Onder *et al.*, 2020). From the first week of March,

COVID-19 spread into all Italian regions, and the whole of Italy was classified as a “red zone.” Since the first outbreak, all regions of Italy have experienced ongoing restrictions on individual mobility, business, tourism and sports activities and on any form of public gathering. But despite these measures, the impact of COVID-19 on Italian healthcare organizations and the Italian National Health Service (NHS) has been devastating (Mannelli, 2020; Pisano *et al.*, 2020). Due to the shortage of skilled clinicians, many health workers have been repurposed to intensive care, infectious disease and respiratory medicine units (WHO, 2020). The central government was in fact forced to ban all non-urgent and deferrable activities in hospitals (Ministry of Health Circular No. 7422 of March 16, 2020).

The main issues that affected Italian hospitals during the peak of the pandemic were the shortage of intensive care unit beds, the shortage of personal protective equipment, limited availability of swabs and monitoring tools, and lack of coordination between the different players in the system (Fanelli *et al.*, 2020). However, despite these problems, some hospitals were able to respond effectively to the crisis. One of these was the Gemelli, which defined strategies that enabled it to better manage the crisis, to ensure safety of its staff and limit the impact of contagion on them. Whether an organization moves into chronic crisis or whether it can resolve the crisis and return to semi-normal depends on the path taken before the point of critical instability is reached. In other words, it depends on how the organization deals with the crisis at its early stages, and on its crisis preparedness levels.

Method

In discussing the case of a hospital during the COVID-19 pandemic and describing adaptive capacity response of an organization to crisis, it is necessary to acknowledge the complexity of the crisis, rather than play it down (Langley and Tsoukas, 2012). Indeed, our knowledge of crisis remains fallible, and requires constant adjustment and calibration (Gilpin and Murphy, 2008; Ansell and Boin, 2019). Understanding of complex situations and procedures requires constant adaptation. Our research uses case study methodology, as it is widely considered suitable for interpreting change in strategic directions and complex situations in an empirical field of which there is limited knowledge (Feagin *et al.*, 1991; Yin, 2017). It is also one of the most widely used methodologies to bridge the gap between theory and practice (Piekkari *et al.*, 2009). The case is discussed with a synergistic positioning to theory, which helps to capitalize on and accumulate existing knowledge, allowing researchers to describe a phenomenon in greater detail (Ridder *et al.*, 2014).

The Gemelli was chosen for the case study as it is a center of national excellence in Italy in terms of health research and quality of care, and because it is one of the reference hospitals for the national management of COVID-19 patients. Although many hospitals were in serious difficulty managing the crisis (Fanelli *et al.*, 2020), the Gemelli put in place many strategic measures. These in fact provided longer term responses to various problems raised by the crisis, including safe pathways for non-COVID-19 patients, management of COVID-19 patient flows, and monitoring of infection rates, etc.

The time frame of the analysis of the COVID-19 epidemic is between February 22, 2020 and May 25, 2020. This period was chosen as it comprised the first wave, which took all the health organizations by surprise. On February 21, around 20 cases were identified in Italy, and the next day the government imposed lockdown on the worst affected areas. On February 24, the Gemelli issued the first internal document on procedures to reduce the risk of infection (“Comunicazioni in tema di rischio infettivo da Coronavirus COVID19”). On May 25, in line with the national Italian government easing of restrictive measures, the local authority, the Lazio Region, re-opened outpatient and specialist non-urgent and deferrable activities in hospitals.

We make use of multiple sources to document the strategy and actions of the Gemelli:

- (1) Three internal performance management reports (March, April and May) and a summary report on the activity of the COVID-19 emergency unit (March 16–May 31, 2020);
- (2) Management control platforms (SAS) which provide data on number of positive cases, Intensive Care Units (ICUs) bed occupied, number of treated patients etc., accessed weekly March 8–May 30;
- (3) Three guideline and network contract documents issued by the Region (Ordinanza No. Z00003 of 06/03/2020; Ordinanza No. Z00009 of 17/03/2020) and four contracts and attachments relating to the use of the Marriott Hotel;
- (4) Eight clinical board meeting minutes and internal protocols and guidelines (March–May 2020);
- (5) Eleven official internal communications (e.g. Setting up the Crisis Unit);
- (6) Gemelli Foundation website, social media channels accessed weekly March 8–May 30.

In order to triangulate the data from the documentation, interviews were conducted with the following key internal informants:

- (1) Head Clinical Director and Administrative Director;
- (2) Managing staff: Head of the COVID-19 Project and Coordinator of the Task Force, Head of Management Control, Head of Information.

Each interview lasted approximately 20 min and was based on open ended questions on the management of the crisis. Interviewees were asked to comment on the documents and talk about the data flow management system. Interview data were coded using a manual open coding process. The research uses a conventional approach to content analysis, aiming to fully describe the phenomenon from different points of view, where existing theory on the topic is limited (Hsieh and Shannon, 2005). The process of coding was inductive, which is appropriate when theory in the field is limited (Hsieh and Shannon, 2005), avoiding preconceived categories and allowing them to emerge from the data (Kondracki *et al.*, 2002).

Based on the procedure proposed by Thomas (2006) two independent researchers coded all the information from interviews and from documents into a set of themes and categories. Transcripts and documents were read several times in order to condense raw textual data into a brief, summary format which includes type of actions implemented and the reasons, actors involved, and how the decision/strategy was taken, implemented and communicated. This process was used to develop categories, which were then conceptualized and linked to three main categories of the resilient response (Williams *et al.*, 2017): cognitive, behavioral and contextual reinforcement, as summarized in Table 1.

The documents listed above were also used to identify the main actions implemented, described in chronological order in Table 1 and summarized in the five pillars discussed in the Results Section with reference to Mitroff's (2004) crisis typologies. All the documents analyzed were drafted after the COVID-19 crisis and thus relate to the "coping phase" of the emergency.

This variety of data and collection methods, combined with the continuous data validation process, allowed us to triangulate the data and reduce potential errors and evaluation bias (Bowen, 2009).

Type of response	Action	Theme	Criteria
Cognitive	Decision making process	Centralization	Centralized processes entail decisions made by top levels of management, including in compliance with national and regional regulations, which allow low levels of discretion to operators
		Delegation	Top management levels provide guidelines and delegate middle management and single operators to translate these into action
	Coordination tools	Formal	Implementation of protocols and guidelines aimed at standardizing procedures Creation of new roles with specific job description
		Informal	Creation of informal network of professional exchange of best practices which facilitate adjustment
Behavioral	Strategic actions and tactics	Scalability	Rapid activation/deactivation, opening/closing, redefinition of specific areas/ services according to the ongoing requirements of patients and the environment, including the mobilization of resources and the creation of specific wards
		Modular	Setting up the response “modules” or units which can be implemented without affecting the ongoing activity of the organization
Contextual reinforcement	Network	Collaboration with regional authorities Collaboration with private partners	Action taken to provide a comprehensive response within the hub and spoke system Multidisciplinary channels and strategic alliances providing services to the community and accessing limited resources

Table 1.
Categories, theme and actions emerged from documents

The Gemelli and COVID-19: the context

The Gemelli is one of the Italian national centers of excellence for teaching, research, and patient care. It was founded in Rome on July 10, 1964, and took on the legal form of a Not-for-Profit Foundation from August 1, 2015.

The organization has over 5,000 employees (1,030 doctors, 2,106 nurses and 686 administrative staff) and more than 1,500 beds, of which 130 are in ICU. The Gemelli is organized on a departmental structure. Altogether it has 7 Departments, 19 clinical areas and 239 operating units (divided into 85 UOC – complex operating units, 112 UOS – simple operating units and 42 UOSA – simple area operating units). A large number of elective operations are carried out and it has approximately 100,000 hospitalizations per year.

The Gemelli was asked to take part in the NHS drive even though it is a private hospital, and its skills and resources played a key role in the ongoing health emergency. While ensuring a high level of care for patients, it was also required to redefine its strategy and decisional process, in accordance with this new mission. On March 13, 2020, the CEO announced the creation of the “Columbus” a new hospital for COVID-19 patients and suspected cases, in support of the Lazio Regional hub at the Spallanzani Hospital. The Gemelli also put in place a management plan coordinated with various local partners, devising and implementing a continuity care project to follow patients after the acute phase of COVID-19. The main actions implemented by the Polyclinic are shown in [Table 2](#).

Table 2.
Steps/actions in the
fight against COVID-19

February 24, 2020	First Crisis Unit at the Gemelli Polyclinic. Creation of specific departments for COVID-19 patients
March 6, 2020	Columbus COVID2 hospital announced
March 16, 2020	Columbus COVID2 hospital opens with the first 21 intensive care beds and 28 inpatient units in isolation. The transfer of the first COVID-19 patients hospitalized in protected areas begins to the Gemelli polyclinic
March 31, 2020	COVID2 hospital is completed and Columbus hospital is opened at full capacity (59 intensive care beds and 100 beds in single rooms)
April 2, 2020	The Marriott hotel offers 162 beds for post-acute low-intensity care patients awaiting negative COVID-19 test results
April 27, 2020	In Italy, 151 doctors had died of COVID-19, according to national federation of surgeons and dentists figures. At the Gemelli 34 staff of a total 5,000 tested positive
May 4, 2020	The beds at the Gemelli for COVID patients were confined to 2 “infected wards.” All positive patients admitted directly to the Columbus.

Results

The Gemelli, along with other healthcare organizations, was severely hit by the COVID-19 pandemic, and was forced to react effectively in order to survive. At the first stage of the emergency in Italy, at the beginning of March, the level of management complexity for healthcare organizations was high.

Italian hospitals were forced to redefine their strategy for two main reasons. One was the need to guarantee a “safe path” for non-COVID-19 patients while providing service for the high number of COVID-19 patients requiring hospitalization and access to intensive care. In the period February 22–May 25, 2020 in the Lazio Region, the number of people testing positive was 7,643 and the number of deaths was 688. The second reason was that national and regional authorities ordered a halt to usual hospital activities, except for urgent and oncological cases. It was thus crucial to redefine role and activities for the clinicians not directly involved in COVID-19 cases, such as Oculists and Orthopaedic surgeons. Using the occupancy rate as a proxy of structural changes of Gemelli, there was in fact a reduction of 35% in admittances to hospital and 30% of beds were occupied by COVID-19 patients in this period. More than half of the activities of the hospital required structural redefinition.

The response thus involved not only maintaining normal functioning, “business as usual,” despite disruptions, but also developing innovative solutions to advance organizational process and capabilities in the new field of developing operational and strategic resilience capabilities (Duchek, 2020).

The COVID-19 emergency response needed to be rapid in order to match supply of services to the increase in demand. The Gemelli, as a multi-specialist hospital structure and regional hub for specialist areas such as oncology, cardiac surgery and neurosurgery was required to create conditions of maximum safety for its ongoing activities. Because knowledge of the virus was limited, the response of the Gemelli followed an incremental approach (Simpson, 2008). This is shown in the documents issued in the three months of the first wave which reveal the mobilization of existing resources and rapid reorganization of resources to reduce stressors to the system and bring in novel solutions to changing conditions (Bechky and Okhuysen, 2011). Thus, specific temporary responsibilities were assigned both for the management of the new COVID-19 unit and the COVID-19 specialist courses at the Gemelli (March 16–July 31, with the possibility of extension), for example:

Head of the COVID; the Project and coordinator of the Activation Task Force; Health Director of the COVID II Presidium, COVID II Intensive Care Manager, Director of COVID II hospitalization, Director of COVID II Imaging Diagnostics.

Management and responsibility for all activities not halted was also re-assigned. These decisions were underpinned by robust organizational control of inter-hospital flows and the

organization of health logistics by the Regional Health Department and the Clinical Governance. The medical directorate took charge of coordinating the COVID-19 crisis unit.

The crisis unit consisted of:

- (1) The medical directorate. This group coordinated the COVID-19 crisis unit. It included the approximately 40 employees of the Polyclinic involved in various capacities in the project. As far as possible they shared daily responsibility for every strategic and operational decision over the three-month period.
- (2) The task force: Following the decision to establish the second COVID-19 hub of the Lazio Region at the Columbus, the Director of the Clinical Government took over leadership of the COVID2 task force. This took charge of carrying out the necessary structural interventions and setting up the Columbus with 100 ordinary hospital beds and 59 intensive care beds.

Table 2 reports the measures taken at the Gemelli during the emergency.

The five pillars of the crisis response

The strategic response of the Gemelli can be summarized in five main pillars. The actions involved ensuring usual activities, i.e. creating a separate hospital and ensuring a safe path for non-COVID-19 patients, and the development of innovative solutions for dealing with COVID-19, of which management and medical staff had limited knowledge. The actions implemented, the aim and the impact on the organization are described in Table 3. The use of crisis typologies (Cunha *et al.*, 2006; Pollard and Hotho, 2006) to approach crisis management shows that certain types of surprise, such as a pandemic, do not fit clearly into a single level, but are related to all the typologies identified by Mitroff (2004). The COVID-19 pandemic in fact has the following features:

- (1) Economic: lockdown measures were an obstacle to usual hospital activities;
 - (2) Informational: absence of data related to the transmissibility of the virus and the actual number of infections (Bhagavathula *et al.*, 2020);
 - (3) Physical: shortage of beds and ICUs;
 - (4) Human resources: the high number of doctors and nurses infected and consequent staff shortages (Krystal and McNeil, 2020), and the “fragility” of some staff in terms of age, illness and/or family problems);
 - (5) Reputational: negative reputation, spread of fake news and fear being infected at the hospital.
- COVID-Hospital: A new COVID Hospital (the Columbus) was set up in less than 10 days, and became the COVID Regional Hospital managed by the Gemelli. The Columbus was set up to increase COVID-19 capacity and provided 100 beds for non-intensive acute care of infectious diseases, pneumology and internal medicine and 59 intensive care beds for COVID-19 positive patients. To ensure that it was activated as quickly as possible, healthcare technologies were redistributed in two phases. Phase 1 saw the first 21 intensive care beds and 28 other beds activated and Phase 2, ending March 31, saw the activation of other intensive care and ordinary hospitalization stations.
 - COVID Wards: COVID wards were opened inside the Gemelli to manage the large flows to the Emergency Room of COVID-19 positive patients in gastroenterology, internal medicine, geriatrics and infectious diseases. At the peak of the epidemic,

Table 3.
Aim, level of impact and resiliency in relation to the five pillars of the strategy

Action	Aim	Level of impact	Resiliency action
COVID hospital	Increase the capacity of the hospital to host COVID-19 patients and effectively manage their needs	Physical HR Economic	(1) Transfer and mobilization of resources (human, technological) from the hospital (2) Redefinition of role and task
COVID wards	Ensure safety of non-COVID19 patients, ensure ongoing activities and the delivery of the “usual” service	Reputational Economic	(1) Implementation of procedures and definition of guidelines (2) Communication inside the hospital to different actors (3) Redefinition of role and task
COVID research and development unit	Contribute to the creation of effective clinical solutions, new procedures and adaptation to the development and spread of the virus	Informational	(1) Creation of multidisciplinary teams (2) Investment in laboratory technologies
Rehabilitation ward	Creation of supply chain of different actors to ensure patient safety and ensure high level of assistance and tailor-made solutions for COVID-19 patients after discharge from ICU	Physical HR	(1) Developing partnership with strategic external partner (2) Investment in new technologies for telemedicine and telemonitoring (lowering risk for staff) (3) Transfer and mobilization of resources (human, technological) from the hospital
Collaboration with the regional network	Ensure an effective and synergic management of the issues raised by the pandemic for the community with the involvement of different levels	Informational Economic Physical HR	(1) Developing partnership with strategic external partners (2) Inter organizational unit (3) Develop new technologies

the Gemelli allocated over 800 beds for COVID-19 positive and suspect patients, which entailed converting many of its normal activities. On March 1, just seven days after COVID-19 was first detected in Codogno in northern Italy on February 22, COVID-free pathways for COVID-19 negative patients requiring emergency care were set up. These proved fundamental to the safety of staff and patients.

- COVID Research and Development Unit: The microbiology laboratory was enlarged to incorporate virology and was used for predictive diagnostics. An investment of more than 1.3 million euros was made for a molecular diagnostic testing system, so that testing could be carried out internally. Before the pandemic, testing capacity was 400/450 tests daily, and this rose to 1,300 tests daily.
- Rehabilitation ward: This was set up in cooperation with the Marriott Hotel, for post-acute patients with low treatment intensity, with single rooms, for a total of 162 beds. The hotel was equipped with medical equipment, and Gemelli medical and nursing staff provided remote assistance and monitoring. This department was a key to breaking household transmission chains. It also served to relieve pressure on hospitals and guarantee an intermediate level of care for COVID-19 patients in safety and isolation.

- Synergic collaboration with the Regional Hub for the implementation of a regional network for patient management and diagnostic laboratories. This involved all the accredited public and private structures belonging to the regional hospital and territorial network, in coordination with the Regional Crisis Unit. Health surveillance functions were centralized at the “Lazzaro Spallanzani” Infectious Diseases Institute and the Gemelli, which were identified as regional reference structures for the management of COVID-19. The Gemelli is in a strategic position and can operate user confinement and isolation. Diagnosis of SARS-CoV-2 was carried out through the provision of a network of laboratories, coordinated by the Regional Reference Laboratory.

Discussion

We now discuss the response of the Gemelli Hospital, focusing on the coping stage of the resilience process (Duchek, 2020).

The need to provide an effective response to the pandemic, without neglecting the needs of non-COVID-19 patients, led the hospital to redefine its strategy. The main challenges were as follows:

- (1) Clinical care guidelines on how to take care of COVID-19 patients (Liaw *et al.*, 2010);
- (2) The redefinition of responsibilities within the organization (Wooten and James, 2008);
- (3) The redefinition of logistics and internal organization including the use of premises and structures, spacing and isolation of COVID-19 patients, taking account of the work of professionals and health professionals and the risk of contagion (VanVactor, 2011);
- (4) Setting up a regional network of collaboration between stakeholders (laboratories, hospitals, other healthcare providers) (Bynander and Nohrstedt, 2019).

The response is interpreted according to the three key types of response, arguing that organizations need to develop cognitive, behavioral and relational capabilities which increase their reliability and resilience, so reducing risk and improving responses to triggering events (Williams *et al.*, 2017).

The three types of response are discussed according to the themes emerging from the documents and interviews, as summarized in Table 1.

Cognitive response

During times of crisis, decisions must be made promptly, implementation must be fast and coordination tools are essential (Faraj and Xiao, 2006). The Gemelli crisis response was coordinated through the following:

- (1) Centralization of the decision-making process. Although rigid decision-making can generate even more disruptive outcomes for an organization (Bonanno *et al.*, 2010; Rahmandad and Repenning, 2016), given the limited resources and time constraints, all decisions, ranging from “staying the course” to deviating from planned routines, were made top-down. The task force took on the role of managing the organization in different ways from those normally followed. In order to effectively manage the creation of a Regional COVID Hospital through the conversion of the Columbus, and in general, the conversion and prioritization of its activities, the Gemelli opted for centralized decision-making. Centralization was new to the organization.

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- (2) Implementation of protocols and guidelines, procedures aimed at standardizing operational procedures and processes throughout the organization from the operating unit to local level. As stressed by Williams *et al.* (2017), unpredictable crises disrupt structures, routines and capabilities, and it is important to develop policy and new procedures to ensure the right level of coordination and communications between different levels in order to limit damage. The operational procedures were subject to approval by the COVID-19 Crisis Unit, acting on the basis of studies coordinated by the Director of the Department of Medical and Surgical Areas. The standardization of procedures had the aim of reducing the discretion of individuals, and of facilitating planning and ongoing monitoring. The therapeutic procedures and protocols were drafted “enhancing the aspects of multidisciplinary assessment and treatment, according to an evidence-based approach.” They were based on preparatory studies coordinated by the Director of the Department of Medical and Surgical Areas, and took account of experience in other hospitals in Italy, including San Matteo in Pavia, Giovanni XXIII in Brescia and the Spallanzani in Rome. Although COVID-19 could be considered as unpredictable event, standardizing procedure and developing different plans is typically linked to a “crisis as process” perspective, underlying the complementarity potential of the two conceptualizations of crisis in a resilience perspective. The attempt to outline different scenarios which may occur in an unpredictable crisis is important, as it can minimize their effect and lower their potential to accumulate into triggering events. In fact, protocols and guidelines were implemented for responding to potential future threats as well as for ongoing use.
 - (3) Implementation of formal and informal coordination tools. Jones (2006) notes that given the novel nature of crisis and the absence of a single model of response, a decision-making process which facilitates adjustment is preferable. In this regard, crisis management teams, like the task force, and the informal network of professionals and clinicians sharing best practices, information and research findings, were fundamental. The task force was necessary to minimize the resistance to change, balancing a bureaucratic team structure with flexibility and establishing role development and flexibility (Bechky and Okhuysen, 2011) and to help professionals adjust to new roles and tasks. Individuals tend to be comfortable in existing routinized structures and functions, and the creation of new structures/roles can create organizational strain resulting in problems of collaboration and coordination within and between organizations (Drabek, 1985; Britton, 1988). The composition of the team was also important, and it included numerous actors from different hierarchical levels of the organization, with diversified and complementary skills. Members included the Health Director, the Director of the Emergency, Anaesthesia and Resuscitation Department and the Head of Nursing.

Behavioral response

Strategic actions and tactics involved in the resilience process. As reported in Table 1 and as described in the five pillars of the response, the Gemelli opted for modular and scalable solutions. The increase in patient flows inevitably involves a redefinition of services provided, roles within the organization and clinical pathways. The behavioral response included role shifting, reorganizing routines and reassembling work schedules. In health emergencies, such as the COVID-19 pandemic, the need for collaboration is mainly linked to the patients' path in terms of access to the structure, management in the structure, and discharge and admission to structures with lower intensity levels, etc. It is also linked to more complex aspects, such as the availability of personal protective equipment, specialist

equipment (e.g. ventilators), or drugs or blood products (e.g. plasma). One of the biggest challenges of COVID-19, in addition to diagnosis and cure, is the newness of the disease and the need for regular scientific updating and learning different types of clinical skills. The response strategy was based on the mobilization and de-mobilization of the resources available, and scalability (Ansell *et al.*, 2020). It was possible to open, close and adapt the different modules, the Marriott and COVID wards, according to changing demands and infection rates. As during exceptional events, decision making is performed “in ignorance,” it was fundamental to learn and adapt by continuously analyzing the evolution of the pandemic and refining solutions to changing circumstances.

Contextual reinforcement

The high degree of transmissibility of the virus, the high need for hospitalization, including intensive care, as well as the lack of knowledge on the virus made synergy between national and regional organizations an absolute necessity, as noted by Ansell *et al.* (2020). In addition, organizations adapted by building networks and partnerships with the private sector and civic society. A sort of “supply chain” for patients was needed, to bring together resources and skills from different public and private organizations for the common purpose of coordinating care-paths and serving health. The regional model that the Gemelli belongs to is of “Hub and Spoke” type emergency management. This is an integrated hospital-territory management model, in which complexity is concentrated in specialized regional centers of excellence (hubs) to which the patients flow from hospitals in the area (Elrod and Fortenberry, 2017).

The organizational model of the Gemelli is therefore supplying a network through a series of strategic alliances with both public and private organizations. The COVID Network was established in response to the epidemic, with aim of concentrating the hospitalizations of COVID-19 patients in dedicated hospitals. Appropriate care was provided through global, multi-disciplinary and multi-professional channels according to a model of care intensity. The Lazio Region authority was essential in establishing shared standards of services and creating the conditions for collaboration.

The response to coronavirus was made possible through synergy between the following strategic actions:

- (1) Extension of COVID-19 diagnosis function through the provision of a network of laboratories, coordinated by the Regional Reference Laboratory.
- (2) Collaboration with Hotel Marriott chain in Rome for the implementation of a new COVID-19 patient management system, through hotel accommodation supplemented with techno-assistance. This was regulated by a temporary contract.
- (3) Implementing an organizational model based on continuity of care. For example, patients staying at the Marriott Hotel remained according to the contract “in any case dependent on their General Practitioner.” The Gemelli network was essential for the organizational response at institutional level, in that the Regional authority generated the institutional conditions for collaboration, recognizing initiatives by private and non-profit organizations. It was also essential as a single organization in signing clear partnership contracts. The differentiation of pathways made it possible to ensure treatment for cancer, cardiology and neurosurgical patients independently of the pandemic.

All the above actions were made possible by substantial redefinition of roles in the various operating units, and the assignment of tasks for the coordination and management of the specific emergency activities. The new hospital involved reorganization of the clinical

services supplied by the Columbus and the Gemelli, which entailed reassignment of the staff between the two structures on the basis of multi-disciplinarity of competences.

In this scenario, the role of institutional stakeholders, particularly the Lazio Region, was essential for the network response. In Italy, regional authorities are responsible for organizing and managing health services. The Gemelli thus has an agreement with the Lazio Region which lays down quality of care standards and payments for services supplied. The agreement does not however cover health emergencies, and a great effort was made on both sides to adapt organization and delivery of healthcare to needs arising during the pandemic. The regional authority generated the conditions for collaboration between public and private entities and encouraged the creation of a network of intensive care units. But although it paid for COVID-19 services, this was not sufficient to cover the income gap generated by the reduction in the usual elective activities of the Gemelli.

Implications for management

The experience of an Italian hospital with COVID-19 exemplifies innovative strategic action in dealing with an unexpected event. The way in which the Gemelli Hospital modified its strategy and implemented resilient actions may be a useful point of reference for the management of other healthcare companies facing an unexpected crisis.

Crisis may impact the long-term survival of an organization due to difficulties in grasping the impact of crisis and inflexibility in organizational processes. This can have a devastating impact on the overall organization (Randolph-Seng and Atinc, 2020). The case of the Gemelli shows the importance of developing a response which takes into account the various dimensions of crisis by implementing actions impacting on the different levels within the organization (Mitroff, 2004). It shows that an organization's resilient response will be based on management ability. In particular, managers are required to

- (1) centralize the decision-making processes to be quick and responsive, avoiding "freeze" of the organization;
- (2) create interdisciplinary teams and task forces to allow a certain level of flexibility and adaptability, and innovative solutions. They should also take account of potential distress of followers or staff, for example in the risk of contagion or the increase of the amount of work (Hinojosa *et al.*, 2020);
- (3) define protocols to tackle temporary conditions, implement ad-hoc activities and temporary routines in order to fulfill short-term goals, and allow the entire organization to follow clear procedures to adapt rapidly;
- (4) implement modular and scalable solutions incrementally in order to overcome risks of obsolescence and limited efficacy on the long term (Colville *et al.*, 2013; Mithani and Kocoglu, 2020) while continuing to adapt to the new requirements as the crisis evolves;
- (5) create networks and links outside the organization, and external coordination tools, as a single organization is unable to manage a complex crisis independently.

The Gemelli was able to rapidly adapt, redefine mission and services offered and integrate innovation going forward into the future.

The duration of the crisis and intense level of activity in fact obliged hospitals to work in conditions of urgency, high uncertainty and to develop adaptive solutions. The COVID-19 crisis facilitated new working methods for new functions, and where these are effective, they should be consolidated and learned from. The case study highlights that organizational

flexibility, or the ability to rapidly redefine decision-making processes, organizational roles, and operational processes involving operators and professionals is therefore fundamental.

Leaders have to trust their instincts, consult real-time data, seek expert advice, accept cognitive dissonance and imperfect solutions, build alliances, learn from experience, and adapt to new circumstances. They need to look for next-to-best practice where best practice is not applicable (Robert and Lajtha, 2002). A severe event such as a pandemic requires the re-determination of the usual processes and a well-prepared leadership. Severe events will thus impact on the entire organizational structure (Lalonde, 2011) and can result in a more sustainable, adaptive and innovative organization. The case of the Gemelli highlights the need to promote a culture of resiliency as the outcome of previous accumulated knowledge. This is a positive way to facilitate learning for the future.

Conclusion and limitations

Although a flu pandemic had been widely predicted and was considered inevitable by some (Longini *et al.*, 2005), it was not possible to predict the timing, severity or type of the COVID-19 pandemic. Single frameworks and protocols developed previously were not effective, because, as noted by many researchers, unpredictable events and crises such as the COVID-19 pandemic constitute a “surprise” for hospitals (Lawrence and Lorsch, 1967; Cunha *et al.*, 2006). Hospitals in fact were largely unprepared for the flood of severely ill patients; initial response was unplanned, and sometimes chaotic, and it was some time before formal protocols became available (WHO, 2020).

This paper identifies the actions implemented by a healthcare organization to overcome a surprise and unprecedented event like COVID-19. As noted by the stream of literature which see crises as “events,” previous plans in these cases are often insufficient, but lack of awareness of potential surprise is an error and can lead an organization to disruption and even collapse.

The case study enhances our knowledge of resiliency based on the integrative framework of Duchek (2020) with reference to the coping phase applied to healthcare organizations. It identifies the capabilities which define organizational resilience. The process approach defines the three different stages of resilience as being interconnected (Duchek, 2020) and the approach is for the first time applied to a complex organization like a healthcare organization. The study focuses on a hospital which is an organization with a very important social and public mission. As noted earlier, a hospital is obliged to operate in a specific sector and under certain conditions, and may not opt for the full range of strategies which for other organizations include freezing or leaving the market.

Previous literature on management has focused on the notions of prior knowledge and intuition (Norris *et al.*, 2020), but the unprecedented nature of COVID-19 made standard existing plans ineffective, so rather than planning, the “coping” and “adapting” phases became pre-eminent. There are implications for the three types of response:

- (1) *Cognitive responses*: Appropriate decisions require understanding context. The ability to react quickly in terms of operations is the strategic flexibility necessary for the hospital to adapt to changes in the environment (Lane and Down, 2010; Yawson, 2020). Leadership is crucial, especially in times of emergency (Lichtenstein and Plowman, 2009; Demiroz and Kapucu, 2012), and should take into account the changing relationship with followers, providing clear indications, and acknowledging concerns and difficulties caused by uncertainty (Hinojosa *et al.*, 2020)
- (2) *Behavioral response*: The ability to respond depends on the adaptive capacity of management in its operational contents in relation to the new strategy (Bourrier *et al.*, 2019). In relation to the ability to identify new objectives there is also the ability to

enhance all skills present and strategically reallocate resources. Modular solutions can avoid the risk of deterioration and obsolescence of temporary activities and protocols in the medium term (Mithani and Kocoglu, 2020) which might jeopardize organizational survival. Managers and leaders need to continually revisit decisions based on new data and information as it arises (Noris *et al.*, 2020).

- (3) *Contextual reinforcement* is necessary, as an effective response to the virus needs to be orchestrated as a network with a coherent set of actions, across organizational borders (Pramanik *et al.*, 2015; Pisano *et al.*, 2020). The new collaboration between public and private partners, effectively coordinated with multiple stakeholders, provides the basis for a new model of community care, not only during the COVID-19 emergency.

As noted in previous research, crisis marks a moment of strategic transition for an organization and its network, and challenges the mission and strategy of the organization (Coombs, 2015). This case study reports actions taken in order to continue functioning despite severe adversity, and to maintain core activities during the “coping phase” (Duchek, 2020). Responding to crisis brings the opportunity to make innovations introduced during emergencies structural, and embed them moving forward. An example of such innovation is the potential to introduce wide multidisciplinary and multi-professional continuity of care into a non-crisis environment.

At time that this case was studied, in the early stages of the crisis, the main research interest was strategy to reduce the pressure on hospitals and healthcare organizations. Since the discovery of the vaccine, the debate has shifted to provision and management of the vaccination campaign. However, effective and rapid response to crisis has the potential to significantly reduce total losses (Day and Schoemaker, 2004). The repeated recurrence of pandemics in the past, as well as the spread of new COVID-19 variants, suggest that this stream of research is still crucial and will remain so.

Clearly, a single case study makes only a limited contribution to theory and the results are not fully generalizable. Future research might usefully consider multiple case studies and/or surveys. Moreover, although Gemelli is funded by the public health system, it is a private (Not-for-profit) hospital. This may have affected its responsiveness to the crisis, as private organizations are generally more flexible than public ones. There is a need for further studies investigating the response of public hospitals to the pandemic. Finally, a further possible extension of this study is that interviews from different perspectives would reveal the dynamics of decision-making processes more clearly.

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