

A Practical Guide to Crisis Management: Perspectives from Healthcare Professionals

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1. Introduction

In recent years, healthcare systems worldwide have faced numerous crises, including natural disasters, technical failures, mass casualty incidents, bioterrorism, and infectious diseases. The current Covid-19 pandemic has presented severe challenges to the resilience of health systems, overwhelming many hospitals while leaving some healthcare facilities underutilized. Policy measures such as lockdowns and contact restrictions have a devastating economic impact on many healthcare facilities, particularly outpatient services (Filip et al.2022)(Sundararaman et al.2021)(Sohrabizadeh et al.2021)(Obeagu et al.2023)(Litke et al., 2022). Crises often challenge established systems and routines. Therefore, planning and preparation are paramount, and potential strategies for resilience should be investigated. Healthcare systems worldwide face significant challenges in times of crisis. However, high-quality crisis management can save lives, especially in the health sector during mass casualty incidents or infectious disease outbreaks.

Primary care plays a crucial role in the management of crises, as care often starts in primary care, which is usually the first point of contact and the main health care provider for patients. In German healthcare, crisis management primarily lies with the federal states and is coordinated at the state level by health authorities. However, primary care practices generally operate independently and are responsible for their own organization. Therefore, crisis management is particularly challenging for primary

care practices. Nevertheless, primary care practices can be crucial players in crisis management. However, little is known about how primary care practices perceive crisis situations and manage them. Therefore, this study aimed to explore which situations are perceived as crises by primary care practice teams and potential strategies for crisis management in these primary care practices.

1.1. Background and Importance of Crisis Management in Healthcare

In recent years, healthcare has faced many different crises such as HIV, Ebola, H1N1 outbreaks, opioid addiction, natural disasters, and terrorism attacks. The current pandemic of Covid-19 and its repercussions on mental and general health has challenged the resilience of health systems (Litke et al., 2022). Exceeding their normal capacity of treatment, health systems may breakdown, resulting in avoidable death or disability. Therefore, the management and prevention of such crises are crucial for global health. Generally, crises unfold in three phases: pre-, peri- (or active), and post-crisis. While the pre-phase includes planning to prevent the crisis or to be well-prepared for a potential crisis, the peri-phase includes all actions taken in response to a crisis after it has occurred (C Schermuly et al., 2015). The post-phase represents the evaluation of responses taken during the crisis and the implementation of re-organization to avoid similar crises in the future.

Crisis management has been widely studied in fields like business, finance, education, and transportation. Crises may occur in organizations, which threaten their goals and operations. Crisis management includes efforts to avoid crises, planning for effective responses, and learning from crises. In organizations, crises are often viewed as damages to their reputation, creating a need for a “public relations” approach. However, in the context of healthcare, damage to reputation may not be the main concern, but saving lives is the priority. In the management of crises, health systems usually involve multiple organizations like primary and secondary care practices, hospitals, laboratories, and pharmacies, including public institutions. Crises affecting large health systems often overwhelm individual organizations within the system, making it challenging to observe from a single organization’s perspective. Therefore, it is insightful to analyze crisis management from the perspective of the entire health system.

2. Roles and Responsibilities of Nurse Technicians

The composition of healthcare professionals in an emergency department (ED) plays an essential role in determining patient outcomes after the occurrence of traumatic events, such as mass casualty incidents (MCIs). However, under-staffed or newly formed healthcare teams with unclear roles and responsibilities can complicate the mitigation of a crisis situation. Educational activities prior to a simulated MCI in a local ED were carried out in collaboration with healthcare professionals to clarify the roles and responsibilities of each professional in a team setting. The current, and often unseen, roles of a less explored healthcare professional in an ED setting, nurse technicians were investigated (Blessing Olofinbiyi et al., 2020). Observational field notes and group interviews with nurse technicians were conducted to explore their roles during a simulated MCI. The results describe how, in addition to their given responsibilities, nurse technicians take on expected, unspoken, and sometimes outside their job description roles during a crisis moment. Four role categories were identified: Operating as a General Lifesaving Force; Informal Role Redistribution; Supporting Nurses and the Multidisciplinary Team; and the

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Burden of an Unofficial Role. The findings indicate that nurse technicians provide subsistence to a healthcare team's professional structure by taking on various formal and informal roles to ensure the continuation or restoration of normality in patient care delivery. However, unclear professional boundaries during a crisis moment can result in both problematic situations and patient safety risks. The results emphasize the importance of educational activities acclimating all healthcare professionals to roles and responsibilities crystallized in a team setting prior to a crisis moment.

2.1. Key skills and competencies required for crisis management

Crisis management is widely defined as a set of processes, strategies, and policies necessary to deal with critical situations that threaten stakeholders, the reputation of the organization, and/or survival (Esteves et al., 2023). From a more practical standpoint, contingency planning before, and effective handling during, a crisis are paramount for successful crisis management. A crisis situation can be defined as a sudden or unexpected event, perceived as a threat by an organization or its stakeholders that requires immediate and decisive action. Crises usually develop through several phases, which have been described by different authors. Crisis management refers to actions taken before, during, and after a crisis. Training and preparation of the crisis management team, and the development of a contingency plan are required prior to a crisis. During a crisis, the priority is to regain control of the event and to mitigate consequences. After the crisis, the management team must evaluate the response to the crisis and identify lessons learned to improve future performance.

Core crisis management skills and competencies include the ability to effectively work under pressure, make rapid and informed decisions in time-constrained situations, think critically and anticipate future consequences of actions, communicate clearly and persuasively with different stakeholders, and lead and motivate teams (T. Pring et al., 2021). Crisis managers must be able to perform complex tasks, often with numerous interacting sub-tasks, while managing stress and time pressure, and in many situations, without sufficient information about the crisis, its development, and available resources. Complex problem-solving skills, combining technical systems modeling and sociotechnical systems thinking, are considered highly desirable for managers in complex organizations. These skills could be valuable for crisis managers to anticipate future consequences of actions and rapidly identify and prioritize possible actions, resources, and coordination required to mitigate the crisis.

3. Perspectives from Public Health Specialists

A qualitative study was carried out with public health specialists in Baden-Wuerttemberg, Germany, that focuses on their professional perspectives of crises in the healthcare system, particularly after the experiences of the Covid-19 pandemic. Public health specialists have training and experience in risk assessment, crisis prevention, and crisis management. One of the main aims of the study was to gain insights in how, based on their professional perspectives, the health system could be made better prepared for future crises.

In the scientific literature and debate, there is a wide range of perspectives on what could or should be seen as a “crisis” in the healthcare system. In the interviews with 12 public health specialists, crises in the healthcare system were seen as having a high impact on the health system, being crucial for governance in the health system, and needing time-consuming management interventions by decision-makers and politicians (Litke et al., 2022). For the participants, the Covid-19 crisis was seen as the most far-reaching crisis in the health system since WWII. While the public health specialists saw a number of immediate management failures at the beginning of the Covid-19 pandemic, they also saw greater systemic vulnerabilities in the health system itself that remained unrecognized and inadequately addressed by politicians and health system decision-makers.

3.1. Public health strategies for crisis prevention and management

The importance of public health strategies for the prevention and management of crises has been discussed with respect to the findings of a qualitative study conducted with healthcare providers in German primary care practices. A wide range of crises that have been dealt with in the practices was mentioned. They varied from situations in practice organization and the healthcare system to societal and natural disasters. Resilience building strategies were discussed in terms of topics related to crises prevention, the individual resilience of healthcare workers, teamwork, and procedures used in practice (Litke et al., 2022).

With regard to the crises mentioned, practicing healthcare providers emphasized the subjective character of crises and that the perception of a certain challenge as a crisis depends strongly on the individual. Moreover, it became clear that the range of challenges or crises addressed by the practice is quite broad. There was a lot of emphasis on the importance of prevention when it comes to the strategies mentioned for handling challenges or crises.

4. Insights from General Practitioners

Research Design and Implementation of Survey

A qualitative cross-sectional design utilising semi-structured interviews was used. The study conformed to the relevant guidelines. Healthcare professionals were asked to provide insights from their own experience. The interviews were undertaken with GPs in various locations across England over a four-week period in December 2022 and January 2023. Participants were recruited via social media and members’ e-bulletin, aiming to achieve a range of demographic characteristics and professional experiences.

Interviews were conducted using a semi-structured style with open-ended questions that enabled participants to share their own experiences in depth while guiding the discussion to key areas of interest. Interviews averaged 30 minutes in duration, were audio-recorded, and subsequently transcribed verbatim. The interview topics were designed to elicit participants’ experiences and perspectives from the healthcare setting. The topics addressed demographic information, direct experiences of crises, and successes and challenges in crisis management. Follow-up questions were used to probe specific areas of interest and clarify points raised by participants.

Analysis involved a thematic framework approach that employed both deductive and inductive techniques. The analysis framework was informed by an analysis strategy based on salient themes identified in the existing literature, prioritising an exploration of pan-professional similarities in crisis management. Transcripts were read and re-read for familiarisation and immersion. For each transcript, relevant text excerpts were indexed with appropriate themes in a matrix, retaining the organisation of each transcript and the context of the relevant text. These matrices were used to develop both pan-professional and individual report styles, with participants' own words conveyed as far as possible to preserve the nuance and richness of their insights. The final reports were peer-reviewed to ensure quality in interpretation and presentation.

4.1. Primary care approaches in crisis situations

In recent years, healthcare systems have faced many different crises around the world - epidemics and pandemics, natural disasters, terrorism attacks, and currently, a global economic crisis. These events likely challenge the resilience of health systems (Litke et al., 2022). In all health care systems, primary care plays a crucial role in the management of crises. Generally, a crisis is a serious threat to the well-being of individuals, communities, or societies, often characterized by higher-than-normal mortality and morbidity rates. Crises are typically complex situations involving many different stakeholders, and the management of crises usually involves hierarchically organized chains of command and control. Despite often being the first point of contact for patients with health complaints and usually the main health care provider for patients with chronic diseases, primary care practices do not play a central role in the planning and management of crises. However, as the first point of contact in the health care system, primary care plays an important role in the management of many health-related crises. A qualitative study in German primary care assessed which situations are perceived as crises by primary care practice teams and which strategies for crisis management are considered beneficial.

5. Nursing Specialists' Contributions to Crisis Management

In Germany, medical specialists concern themselves with medical services outside of hospitals and together with nursing specialists take part in crisis management in health systems. Three qualitative focus group interviews with nursing specialists were conducted on their perceptions of crisis management and relevant contributions were analysed. Experts from nine different federal states with varied additional qualifications participated. Included were nursing specialists from outpatient and inpatient settings as well as those involved in the training and further education of nursing personnel and nursing consulting.

Healthcare crises contribute to increasing workloads and worries among nursing personnel. Nursing specialists consider their involvement in health crisis management as insufficient, but there is a demand for their professional involvement. Despite the many preventive and coping strategies already in place, novel strategies are sought to boost engagement and resilience among nursing personnel in a health system under stress (Litke et al., 2022).

5.1. Specialized nursing interventions during crises

During crises, a specialized nursing staff actively intervenes to maintain, restore, and promote a therapeutic environment, focusing on their specific areas of expertise. The findings indicate a range of interventions employed by nurses during patient crises, which can be classified into five categories: specialized care, calming the environment, patient observation, care planning, and medication management. In collaboration with other staff members, specialized nursing interventions include directing the patient to a quiet room, providing a preventive time-out, and assessing the need for restraint or seclusion. These interventions help stabilize the patient's situation, manage psychotropic medications, and enhance the staff's ability to assist the patient .

Calming the environment involves both specialized intervention and staff collaboration. These measures prevent the situation from escalating or worsening and help alleviate the patient's stress. Typical calming interventions include removing potentially harmful objects, asking other patients to leave the vicinity, and turning down music. Nurses also actively observe patients during crises to detect any changes in their mental or physical condition. This patient observation is crucial for assessing the need for medical intervention. In planning the patient's care, nurses emphasize their accountability for the patient's overall situation. Restraining a patient's freedom requires a detailed description of the patient's situation before, during, and after the restraint, outlining the grounds and duration of restraint. These records ensure that other personnel involved in managing the patient's care remain informed. (Rajwani et al.2023)(Allerby et al., 2022)(Kang et al.2022)

6. Clinical Nutrition Experts in Crisis Situations

During the COVID-19 outbreak, Hong Kong adopted a whole-hospital approach, prepared public hospitals for massive patient surge, and activated the Crisis Level 1 Incident. Early in the outbreak, Healthcare System Severity Assessment was conducted and Tiered Response Activation was implemented. Significant Actions taken included: (1) Transfer non-emergency services to public/higher risk hospitals, (2) Transfer patients to other hospitals, (3) Re-deploy and re-train staff, and (4) Maximize use of other venues. Public engagement was enhanced via media briefings, outreach, and community partnerships. Hospital Cluster Command dedicated to planning, monitoring, coordination, and communication. Central Command Center prioritized daily operational tasks, with escalations and interventions for high-risk/surveillance hospitals. These strategies ensured service continuity, staff safety, and effective public communication through various platforms highlighting the importance of hospital frontlines (Barazzoni et al., 2020).

Here, Hong Kong's experience and actions in crisis management are elaborated to facilitate learning and sharing. In addition to the clinical context, the role of dietitians and the enhancement of nutrition services amid a healthcare crisis is discussed. The utmost importance is to protect public health and meet the healthcare demand with minimal public panic. Essential healthcare services must not be disrupted during an epidemic/pandemic, but resource bidding, staff/venue safety, and public confidence are key challenges. Well-equipped healthcare venues, prior planning of escalation measures,

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staff safety strategies, and effective public engagement are essential (Irene Maffoni et al., 2021).

6.1. Nutritional support for patients in emergencies

The intention of this section is to report the perspectives of health care professionals regarding crisis management in hospitals and to make practical suggestions that may be applicable to various health care settings. In addition to demographic details, the professionals were asked to comment on eight open-ended questions that were intended to elicit specific details about their perspectives and suggestions regarding crisis management.

4.1 Implementation of crisis management plan Currently, a structured crisis management plan is in place in all hospitals, though it is to a varying degree well implemented. In general, important elements of the crisis management plan as specified by international guidelines (Barazzoni et al., 2020) are included in the local plans. However, regular practice exercises were poorly reported (with the exception of the use of crisis scenario videos, which were seen as useful). Health care professionals stress the importance of regular exercises and the need to conduct them in cooperation with other parts of the health care chain.

4.2 Roles and responsibilities in crisis management Health care professionals agree that the hospital crisis management team plays a key role in effective crisis management. However, they also emphasize the importance of the competence and prior training of individual team members. Team members should undergo training before a crisis occurs, and regular refresher courses are needed to ensure that knowledge remains current. Moreover, health care professionals highlighted that other staff groups need to be given clearly defined roles and responsibilities during a crisis. During the COVID-19 pandemic it was noted that such personnel often found it unclear what was expected of them.

4.3 Internal and external communication during crisis Effective communication, both internally and externally, is essential for successful crisis management. Health care professionals were unanimously of the opinion that internal communication usually works well; however, the situation can vary considerably between units. It is crucial that team leaders in specialty units are able to rapidly share important information with their subordinates and that there is a mechanism in place for feeding information back to the management. Health care professionals proposed the inclusion of senior nurses on the crisis management team, as they often play a key role in relaying information between the management and nursing staff.

7. Physiotherapists' Role in Crisis Management

This study explores the risks and challenges faced by physiotherapists when managing clients with suicidal thoughts or behaviours. It reveals the crucial importance of client and therapist trust in successfully managing risk, and the central role of conversations in building that trust. Physios develop a unique approach to risk management, using informal conversations to build trust and encourage openness about suicidal thoughts. This 'middle space' of trust and conversation helps manage not only risk, but also the

wider challenges of managing exercise as a treatment for clients with suicidal thoughts (L. McGrath et al., 2020). In this context, the focus is on the challenges of managing clients with suicidal thoughts and behaviours, dead with involving risk. In particular, it is the physiotherapists' views and experiences of these challenges that are explored. The insights here speak to wider concerns about ensuring healthcare professionals have the support they need to effectively manage risk, and the critical importance of client/therapist trust in effectively managing risk.

7.1. Rehabilitation and physical therapy in critical situations

The following practical recommendations have been developed on how to optimally implement rehabilitation and physical therapy when healthcare systems enter crisis mode. The recommendations are primarily aimed at intensivists and leaders of rehabilitation services in hospitals. However, they may be relevant for other healthcare professionals as well. The recommendations are based on a consensus of healthcare professionals with practical experience analyzing and dealing with a crisis in rehabilitation and physical therapy services. Each recommendation is accompanied by a short background text outlining the reasoning behind the recommendation.

Rehabilitation and physical therapy is an essential and necessary part of treatment in critically ill patients, especially in situations involving pandemics. Nevertheless, in all recent pandemics, there was a decline or a complete stop of rehabilitation and physical therapy services to intensive care unit patients. Previously, a decline in rehabilitation and physical therapy services had been described in the early phase of an epidemic involving an outbreak of severe acute respiratory syndrome. A dramatic decrease of inpatient rehabilitation services and a significant delay in the onset of rehabilitation were found in patients recovering from COVID-19. Furthermore, the outbreak of the Ebola virus disease prompted several West African hospitals to focus solely on critical care interventions for the infected patients because of their limited resources ((E. Major et al., 2016)). Unfortunately, the same choices were made in hospitals in Europe or America if they received COVID-19 patients. During the COVID-19 outbreak, it was only possible to provide rehabilitation and physical therapy with severely limited resources despite having a training ward, gymnasiums, and many healthcare professionals. Instead of treating more than 20 patients, it was often only possible to take care of 2-3 patients. Lessons learned from the COVID-19 crisis are discussed in detail regarding what should be done to limit or avoid a decline of rehabilitation and physical therapy services when the healthcare system is forced to operate in crisis mode. These lessons consist of practical recommendations that may be useful when responding to similar situations in the future.

8. Pharmacists' Involvement in Crisis Response

During a public health emergency, pharmacists can play a vital role in responding to the community's medication and health care needs in a variety of settings, including community pharmacies, hospitals, clinics, and assisted-living facilities. However, their preparedness and capability to respond may need to be better understood by public health agencies and other emergency response stakeholders (Kellner et al., 2019). To ensure effective pharmacy involvement during an emergency, it is essential to understand,

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evaluate, and enhance the capabilities and contributions of pharmacy professionals in all public health emergency phases.

Pharmacists can help plan intervention to prepare and educate assisted-living facility residents about emergencies. This intervention can include training assisted-living facility staff and holding resident information meetings, which can increase their preparedness for various emergencies. Training programs and exercises for pharmacy professionals can also enhance preparedness and response capabilities. Water and stockpiled drug distribution tabletop emergency preparedness exercises can help identify pharmacy emergency response plan gaps and enhance effectiveness during real emergencies (Aruru et al., 2020). The unique training of pharmacy professionals enables them to adequately respond to health emergencies, and their participation in planning and response efforts is crucial for effective health emergency responses.

8.1. Medication management and supply chain in emergencies

Preparedness of information infrastructures, including plans, personnel, and facilities, are the most effective strategies to face disasters and can be categorized into socio-cultural, technical, and infrastructural interventions. Other strategies of socio-cultural intervention include community familiarization with stewards' duties; holding joint exercise sessions with stewards before disasters; and familiarity of stewards with control centres, equipment, networks, and facilities. Additionally, monitoring the on-going processes during disasters four essential causes can lead to the disruption of a medication supply chain's normal operation. Enabling strategies can help the supply chain preserve its resilience and act more effectively. Possible coping strategies include controlling network distribution, prolonging medication validity, prioritizing hospitals, repairing network routes, and flexible routing. Mostly, disasters hinder transportation network routes and cause repairs to take several days or longer (Bastani et al., 2023).

Health care logistics is defined as "the planning and implementation of the flow and storage of goods and related information within health care organizations," and involves collaboration with various stakeholders and the provision of resources to execute predetermined services in a timely and efficient manner (D. VanVactor, 2011). Medical material constitutes a special category of consumable supply that many health care logistics managers forget to plan for prior to a disaster or other event. Moreover, widespread tendency exists among health care administrators to avoid thinking about or planning for a disaster event, even when the everyday environment includes possible crisis-generating circumstances. Health care logistics managers must lead the effort in planning for the provision and management of medical materials in any integrity-shortening event.

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