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Warming Up, Acting Hot, Cooling Down: Organizational Transitions and Learning in Municipal Crisis Management

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Abstract

Municipal administrations must maintain reliable public services while responding to crises. This paper examines how bureaucratic organizational logics shape municipal crisis management and how crisis-related experiences are translated into organizational learning. Drawing on Weber's theory of bureaucracy and Soeters et al.'s (2006) distinction between hot and cold organizational modes, the study is based on twelve semi-structured expert interviews involving 14 employees from different departments and hierarchical levels of a major German city. The findings show that routine-oriented and crisis-oriented modes coexist within municipal administrations. During crises, established procedures are accelerated or complemented by more flexible forms of coordination, improvisation, and informal networking, while formal responsibilities and legal requirements remain relevant. However, the transition back to routine operations is considerably less structured. Crisis-related knowledge often remains implicit, person-dependent, and insufficiently documented, with limited time, staff turnover, and unclear responsibilities further constraining its institutionalization. To capture these dynamics, the paper extends the hot/cold perspective through a process-oriented cycle model distinguishing between warming up, hot operation, and cooling down. Organizational learning is conceptualized as a cross-cutting process, with cooling down representing a particularly important opportunity to reflect on crisis experiences and embed them in organizational routines. The findings highlight that municipal crisis management depends not only on the capacity to adapt during crises but also on the ability to retain and institutionalize the knowledge generated.

Introduction

Recent years have been characterized by an increasing number of complex, overlapping and long-lasting crises. Events such as large-scale refugee movements, the Covid-19 pandemic, extreme weather events, cyber incidents and disruptions of critical infrastructures have highlighted the growing importance of crisis management capacities at all levels of government (Floeting 2023; Kuhlmann et al. 2024; Behnke 2025). In Germany's federal system, municipalities occupy a particularly central position and constitute an essential part of the critical infrastructure. As the administrative level closest to citizens, they are responsible for coordinating local response measures and supporting affected populations during crises (Schätzle & Trapp 2025). At the same time, municipalities are often directly affected by crises and must maintain their own operational capacity to ensure the continuity of essential public services. As a result, they find themselves in a dual role as both crisis managers and critical infrastructure providers (Schütte et al. 2023), while facing high expectations (Hustedt 2019).

Recent research on municipal crisis management has identified persistent challenges, including staff shortages, limited awareness of crisis management among administrative employees, uncertainty regarding roles and responsibilities, insufficient knowledge management and difficulties in retaining and institutionalizing lessons learned (Schulte et al. 2024; Schätzle & Trapp 2025; Kuhlmann 2025). However, comparatively little attention has been paid to how bureaucratic organizational logics shape municipal crisis management and how experiences gained during crises are translated into organizational learning, particularly during the transition back to routine operations.

Against this backdrop, this paper addresses two research questions: How do bureaucratic organizational logics shape municipal crisis management, and how do they influence organizational learning?

Empirically, the paper draws on data from semi-structured expert interviews involving 14 municipal employees from different administrative departments and hierarchical levels. The interviews were conducted as part of the [anonymized] projects' case study on crisis management in an independent major city in Germany. Drawing on Weber's Theory of Bureaucracy and Soeters et al.'s (2006) distinction between *hot* and *cold* organizational modes, the analysis examines how bureaucratic logics are reflected in municipal crisis management practices and how organizational learning is situated within the crisis management cycle proposed by the German Federal Office of Civil Protection and Disaster Assistance (BBK) (Bundesamt für Bevölkerungsschutz und Katastrophenhilfe n.d.).

Building on these findings, the paper proposes an extended, process-oriented model that distinguishes between organizational *warming up*, *hot operation*, and subsequent *cooling down* within municipal crisis management. Particular attention is paid to the latter phase, which has received comparatively little attention despite its importance for organizational learning, knowledge management and hence long-term resilience. Following a resilience perspective that emphasizes *bouncing forward* rather than

merely *bouncing back* (Manyena et al. 2011), the paper argues that transferring experiences from previous crises into organizational crisis management routines is essential for strengthening future crisis preparedness.

Theoretical Background and Research Status

Municipal administrations in Germany are traditionally organized according to bureaucratic principles that have been described most prominently by Max Weber (Richenhagen & Schat 2019). For Weber, bureaucracy is the most highly rationalized form of exercising power and administration. He conceptualized bureaucracy as an ideal type of legal-rational authority characterized by formalized rules, hierarchical structures, clearly defined responsibilities, standardized procedures, and impersonal, rule-based decision-making, separating the individual holding an office from the official position itself (Weber 1921/22). These characteristics are intended to ensure predictability, legal certainty, equal treatment and administrative reliability, making bureaucracy particularly suitable for the continuous provision of public services under stable conditions (Weber 1921/22).

From this perspective, bureaucratic organizations derive their effectiveness primarily from routine and procedural consistency. Decision-making is embedded in formal responsibilities and legal frameworks, while organizational action follows predefined processes rather than situational discretion. These characteristics constitute major strengths of public administration in everyday operations, as they promote accountability and transparency. While these characteristics support administrative reliability, accountability, and transparency, they may also constrain innovation and flexibility (Richenhagen & Schat 2019), particularly in dynamic or turbulent environments.

Crises are typically characterized by uncertainty, time pressure, incomplete information and rapidly changing conditions, requiring organizations to adapt their routines and make decisions despite ambiguity. The bureaucratic preference for legal certainty and procedural correctness comes into tension with the needs of an effective response (Lenz & Eckhard 2025). Recent debates on public administration increasingly emphasize the need for greater flexibility, adaptability, and agility, while also identifying bureaucratic structures as potential obstacles to organizational change (the term “bureaucratic pathologies” is occasionally used) (Behnke 2025; Richenhagen & Schat 2019). The ability to deviate from routines or to adopt more flexible practices than in everyday work outside of a crisis appears to be particularly relevant to successful crisis management, as Eckhard et al. (2021) also found during their research on the refugee crisis in Germany.

Whereas Weber’s theory explains the bureaucratic organizational logic that characterizes large parts of municipal administration’s daily operations, Soeters et al. (2006) provide a complementary perspective by distinguishing between *hot* and *cold* organizational modes and contexts. Together, these concepts offer a useful theoretic lens for examining how municipal administrations navigate routine operations and crisis. In the following, the terms routine mode and crisis mode refer to the prevailing working modes of municipal administrations, whereas cold and hot describe the organizational logics that characterize these modes. Routine operations are predominantly shaped by cold organizational characteristics, while crisis situations tend to increase the relevance of hot organizational logics. However, these logics may coexist within the same organization.

Soeters et al.’s (2006) concept was originally developed in the context of military organizations, which are described as possessing two complementary organizational faces. During routine operations, military organizations resemble bureaucratic institutions characterized by planning, hierarchy, formal organization and administrative control. During missions or combat situations, however, they transform into organizational settings that operate according to fundamentally different principles. *Cold organizations* are referred to as “real bureaucracy” and characterized by rational planning and specialization to ensure stability. Work processes are formalized and therefore also predictable, responsibilities are clearly defined and decision-making follows established procedures. Coordination is primarily achieved through hierarchy. These structures facilitate efficiency and control under stable conditions but rely on relatively predictable environments. In contrast, *hot organizations* emerge in situations characterized by uncertainty, danger, urgency and rapidly changing operational environments. Rather than extensive planning, they depend on decentralized decision-making, flexibility, improvisation and the ability to adapt continuously to unfolding events. Leadership becomes more situational, communication more immediate and organizational boundaries more permeable. Successful performance therefore relies less on procedural compliance than on pragmatic problem solving and rapid coordination. *Hot conditions* are described as “front-line” parts of the military work like being “on the battlefield, in crisis or in disaster […]”

(Soeters et al. 2006, 247) and characterized as turbulent, potentially life threatening and require performance in critical circumstances. The terms *hot* and *cold* are derived from firefighting terminology. (Soeters et al. 2006)

Importantly, Soeters et al. do not conceptualize hot and cold organizations as mutually exclusive organizational types. Instead, military organizations combine both logics and can switch between them depending on operational requirements. Their organizational logics, training and structures are specifically designed to support these transitions. "[…] in crises or crisis like situations organizational members need to form a strong, cohesive group with a collective mind […] which as an organizational form and cultural entity differs greatly from the 'cold' uniformed organization" (Soeters et al. 2006, 248).

Soeters et al.'s distinction between hot and cold organizational modes offers a useful analytical perspective for examining municipal crisis management: The "front-line" units of the military are essentially constantly operating under *hot conditions*, while most units only experience these conditions occasionally. Municipal administrations slightly differ from military organizations in this regard. Although certain administrative units such as fire departments or public order offices routinely operate in dynamic emergency environments and deal with unforeseen events on a daily basis, the majority of the other departments of municipal administrations are primarily shaped by bureaucratic organizational principles and therefore predominantly reflect characteristics of cold and highly bureaucratic organizations during everyday operations (Graf et al. 2024). They typically operate in a more process-oriented and routine manner, but in the course of crisis management, they often must deviate from these procedures (Lenz 2024). In this context, the crisis team can be understood as a structure that facilitates the development of a more cohesive and coordinated mode of working during crises.

The Weberian bureaucracy represents an organizational logic optimized for stability and reliability. Importantly, a shift towards *hot* organizational modes does not imply the complete absence of bureaucratic principles. As Soeters et al. (2006) emphasize, rules and conventions remain relevant in crisis situations, even if they are less explicitly formalized. Bureaucracy as a form of organization probably has to be reconfigured when crises occur and hence conditions turn hot:"[…] crises continue to expose the intrasigend nature of central bureaucracies" (Stark 2014, 692).

Unlike organizations primarily responsible for emergency response, most municipal departments do not operate continuously under crisis conditions. Instead, crisis management is embedded in administrative structures predominantly oriented towards routine service provision. The challenge for municipal administrations is being able to activate crisis-oriented modes of action like crisis teams without abandoning the structures and responsibilities that ensure administrative reliability and jurisdiction on one hand (Thielsch et al. 2021). On the other hand, when transitioning from crisis mode to routine mode, there are usually so many priorities on the agenda that were postponed due to the crisis that public administrations have no capacity left for systematic follow-up and potential resilience-oriented reforms (Behnke 2025).

Cycle models provide a useful framework for structuring different phases of crisis management, based on a procedural understanding, and for examining when and how opportunities for learning arise. While these models differ in their terminology and level of detail, they generally distinguish between preparation, response and recovery or follow-up. The following crisis management models serve as the basis for further discussion of the insights derived from our data and the subsequent expanded version.

The BBK crisis management cycle distinguishes between prevention, preparation, response, and follow-up (see Figure 1). While prevention and preparation focus on reducing risks and establishing the organizational prerequisites for crisis response, the response phase encompasses operational measures during an incident. The follow-up phase provides an opportunity to evaluate crisis management activities, document lessons learned and incorporate findings into future prevention and preparedness measures (Bundesamt für Bevölkerungsschutz und Katastrophenhilfe n.d.). While the BBK crisis management cycle distinguishes between different phases of crisis management, these phases can also be examined in terms of the organizational logics that tend to prevail within them. Depending on the demands and activities associated with each phase, cold or hot organizational characteristics may become more dominant.

Existing literature and research in the field of municipal crisis management addresses organizational logics, innovation (including its barriers) and resilience in public administrations (Löcher 2011; Duit 2016; Neumann & Mettler 2023), and highlights the importance of flexibility, improvisation, creativity, adaptation, a faster working pace and many additional organizational factors (some of which overlap in their descriptions depending on the source) for effective crisis response that are associated with the

organizational tension in bureaucracies (e. g. Graf et al. 2024; Webb & Chevreau 2006; Kuhlmann et al. 2024; Schuppan & Köhl 2016; Lenz & Eckhard 2023; Eckhard et al. 2021; Behnke 2025; Stark 2014). Challenges of municipal crisis management also include difficulties in establishing clear responsibilities across administrative departments, limited crisis management awareness amongst employees, a lack of preparedness and difficulties in maintaining and transferring knowledge gained through previous crisis experiences (Schulte et al. 2024; Schätzle & Trapp 2025).

This brings up the question of what happens to knowledge gained during *hot* crisis situations once the organization *cools down* and returns to routine operations and how this is influenced by manifestations of organizational factors within the context of a bureaucratic organization. As the current research status suggests, crisis-related learning cannot be understood independently of the temporal and organizational context in which crises unfold. While learning may occur throughout the crisis management cycle, the conditions under which it takes place differ between *cold* preparation, acute *hot* response and the post-crisis *cooling down*.

In recent years, crisis and disaster management research has shifted from a focus on crisis response toward preparedness and a holistic approach encompassing all phases of a crisis (e.g., Hasan et al. 2026). Nevertheless, organizational learning from crises remains understudied despite its importance (Broekema 2018; Pursiainen 2018). This particularly applies to the post-crisis or follow-up phase (Bagali 2026), which is central to this paper. During this period, experiences remain fresh and those involved are often motivated to share them. The post-crisis or cooling-down phase thus offers opportunities to integrate lessons learned into organizational routines and institutionalize learning processes that foster long-term adaptive capabilities. This highlights the need to examine research on organizational learning in crisis management. Recent crisis research increasingly emphasizes learning during and after crises (change-oriented crisis research). One relevant approach is the discourse of renewal, through which organizations retrospectively interpret crises as catalysts for necessary change, such as introducing crisis management exercises. This discourse also enables organizations to communicate their willingness to learn from mistakes, demonstrate control, rebuild public trust, and restore legitimacy. Ulmer, Sellnow, and Seeger (2015), among others, highlight the role of communication in supporting such renewal processes.

Beyond this communicative approach, crisis-induced learning (CIL) provides a more comprehensive framework linking organizational learning to different crisis phases. Situated at the intersection of crisis management, organizational studies, and public administration, CIL addresses a field that remains theoretically fragmented compared with organizational learning under stable conditions (Bagali 2026; Broekema 2018; Tegneborg 2020). CIL describes how crises trigger organizational actions that generate new knowledge and behavioral change. It encompasses two dimensions: a cognitive dimension, involving the acquisition of knowledge and understanding, and a behavioral dimension, involving the translation of this knowledge into improved organizational practices (Broekema 2018; Tegneborg 2020). Research on CIL (e.g., Bagali 2026; Broekema 2018; Deverell 2010; Lass-Lennecke et al. 2024; Tegneborg 2020) frequently builds on Argyris and Schön's (1978) distinction between single-loop learning (adaptive learning), double-loop learning (transformative learning), and deutero-learning (learning to learn; Lass-Lennecke 2020). However, public organizations tend to prioritize single-loop learning after crises, while more fundamental structural changes associated with double-loop learning remain rare (Bagali 2026; Tegneborg 2020).

Organizational learning can occur throughout all crisis phases, although conditions and objectives differ:

- Preparation: Learning from early warning signals and previous incidents to prevent crises, also described as anticipation through signal detection and preparation (Bagali 2026, 65).
- Response: Learning under uncertainty and time pressure to improve immediate responses, referred to as crisis management proper (Deverell 2010, 682).
- Recovery: Learning through reflection and evaluation after returning to routine operations to strengthen future prevention, preparedness, and response.

This latter phase is often characterized by political debates and the assignment of blame—that is, “a political struggle of blaming and framing” (Broekema 2018, 23)—which can create barriers to learning processes. Further obstacles to such learning processes in public organizations are seen in structural rigidity resulting from hierarchical stability, inadequate documentation (e.g., of processes during an acute crisis phase), as well as the politicization of crises and, in the process, the selective use of information to favor certain positions (Bagali 2026; Broekema 2018; Deverell 2010; Tegneborg 2020).

In 2018, Pursiainen published the 6-phase cycle as theoretical framework for crisis management analysis in theory and practice (see Figure 2). In this framework, learning is highlighted as a distinct phase that occurs after a situation has been resolved and before a new risk assessment is conducted. Pursiainen emphasizes that, in practice, a crisis management cycle provides a framework for organizing the interconnected or interacting elements into a certain order and for addressing questions such as who should do what and when in order to successfully manage a crisis situation. For this reason, the crisis management cycle has been used primarily in the context of advising practitioners. Although Pursiainen (2018) presents learning as a distinct phase, he emphasizes that it should be understood as a cross-cutting process throughout the crisis management cycle.

Taken together, these approaches conceptualize organizational learning as a cross-cutting process while highlighting the post-crisis phase as a particularly important opportunity for reflection and institutionalization. However, how these processes unfold in municipal practice and which organizational factors facilitate or constrain them remain open questions.

The interview data from the [anonymized] case study provide insights into how bureaucratic logics interact with different phases of crisis management, which factors are of central importance in this context, how administrations transition between routine and crisis modes (warming up and cooling down), and how, if or when crisis-related experiences are processed so that lessons can be learned from them.

Methodology

The empirical analysis is based on a qualitative case study of municipal crisis management in a major German city with approximately half a million inhabitants. The municipality has a differentiated administrative structure and faces a diverse range of potential hazards. Its crisis management is organized on an interdepartmental basis and coordinated by a dedicated unit within the municipal fire department.

The case study was conducted within the research project “[anonymized]” (acronym: [anonymized]) examining the organizational, technical, and social capacities required for effective municipal crisis management. The project includes two model municipalities, a major city and a rural district.

To examine the current state of the art of municipal crisis management, semi-structured expert interviews with 14 employees from different administrative areas and hierarchical levels of the major city case municipality were conducted. These included youth welfare, human resources, central services, social services, public health, environment department, fire department, public order office, crisis management and civil protection division, and the legal department, as well as processing, team-leadership and head of department positions. In expert interviews, interview subjects are selected based on their status—in this case, administrative staff who can provide insights into crisis management—and the research focus may be more information-oriented; in such cases, the statements are treated as factual findings (Helfferich 2014).

The interview guide was developed based on a systematic literature review focusing on municipal crisis management, insights gained from previous workshops in the model municipalities, and the methodological approach proposed by Helfferich (2014). All interviews were conducted between May and November 2025. The data collection comprised ten individual interviews and two joint interviews, with an average duration of approximately 90 minutes.

The sampling aimed to capture diverse perspectives on municipal crisis management across administrative functions and hierarchical positions. The interviews addressed, among other topics, individual roles and experiences in crisis management, preparedness and training, the organizational embedding of crisis management, internal and external cooperation and networks, knowledge management, and assessments of the municipality’s crisis fitness in general. Initial interviewees were approached through a central contact person in the municipality. Additional interviewees were recruited through snowball sampling by asking initial participants to recommend further individuals with relevant knowledge and experience (Loosen 2014).

The interviews were conducted online via Zoom by the first author of this paper, audio-recorded and subsequently transcribed and anonymized. The transcripts were analyzed using qualitative content analysis following Mayring (2022). An initial coding framework was derived from the interview guide and subsequently expanded and differentiated inductively during the analysis. Coding was conducted using the MAXQDA software. Each interview was coded independently by the interviewer and one additional member of the [anonymized] research team. The coded segments were subsequently compared and discussed. Where differences

in interpretation occurred, coding rules were refined and clarified throughout the process. This procedure contributed to the transparency and intersubjective traceability of the coding process (Mayring 2022). A comprehensive interview report based on the analysis of 30 codes was compiled.

For the present paper, the (unpublished) interview report was subsequently examined with a particular focus on organizational characteristics and processes associated with the transition between routine-oriented and crisis-oriented modes of the municipal organization. In addition, the interview data were recoded to examine the topics addressed in this paper in greater depth, including flexibility, phases of crisis management, and bureaucracy (see Appendix 1 for the coding framework). The findings are interpreted considering Weber's (1921/22) theory of bureaucracy and Soeters et al.'s (2006) distinction between hot and cold organizational modes. The analysis focused particularly on organizational logics and processes associated with transitions between routine-oriented and crisis-oriented working modes, as well as on the handling and transfer of knowledge before, during, and after crises. Following the findings presented below, the model expanded on this basis is introduced in a separate section.

Findings

Interviewees are identified as IP 1 to IP 14. Numbers in parentheses indicate the corresponding line numbers in the interview transcripts and facilitate the traceability of the quotations. The interview data reveal clear differences between day-to-day administrative operations and the crisis mode.

In regular administrative practice, work processes are predominantly shaped by established and process-oriented responsibilities and procedures as well as legal requirements. Several interviewees describe this approach as comparatively slow, yet at the same time functional for daily operations. This becomes particularly clear in the statement of IP 3, who noted that a "blink of an eye in municipal life" equates to six months (13). As soon as a crisis occurs, this way of working changes. The interviewees report accelerated decision-making, shortened communication channels, and closer, more immediate coordination between the administrative departments involved. IP 7 captures this difference by contrasting emergency services, where the principle "We must not waste any time" applies, with routine administrative structures, where, as they put it, "We MUST waste time" (129). At the same time, interviewees emphasize that sufficient pressure to act can significantly accelerate administrative procedures, allowing processes that would normally take months to be completed within a much shorter period and with fewer bureaucratic obstacles. Many of the interviewees describe this very contrast between the pace of crisis management or the work in a crisis team and everyday work as an important reason for why they enjoy being involved in crisis management.

Increasing pressure to act can rapidly accelerate administrative processes and alter established procedures, indicating the onset of a *warming up* process. The transition from administrative routine to crisis mode does not involve a complete dissolution of bureaucratic structures, but rather, initially, their acceleration and situational adaptation.

The transition from preparation to crisis management varies within the administration of the case municipality examined. While the fire department and the public order office—which essentially represent the *hot* shares of a municipality—can draw on more established routines due to regular operational practice and existing training and exercise opportunities, a large proportion of interviewees from other administrative areas report only limited or no systematic preparation for crisis management at all. Knowledge about crisis management was taught only sporadically. Even when some of the interviewees were hired for a position involving crisis management tasks, no corresponding onboarding took place in most cases. Instead, respondents familiarized themselves with the subject through partially existing documentation, discussions with predecessors, or independent research: "[…] whenever we went there, we took the experiences and materials from before and adapted them, perhaps modifying them a little" (IP 2, 30). Accordingly, preparation was frequently described as "learning by doing". One IP who works in the administration's crisis management and civil protection division, for example, reported that they had only begun to engage more intensively with crisis management after taking on their position:

Well, I didn't learn about it during my training either; I don't think the training department even knows what crisis management means […]. I hadn't really looked into it beforehand either—only now, since I've taken on this position, have I actually been dealing with it more intensively. (IP 11, 24)

Practical exercises play a particularly important role in the transition from preparation to response. The interviewees rated them as a particularly helpful form of preparation because they promote confidence in taking action and provide practice in making

decisions under pressure. At the same time, they foster connections among individuals who must work together in an actual crisis. Accordingly, crisis management is perceived as more manageable where regular exercises, clear roles, and networks are in place. In the absence of these prerequisites, crisis management remains somewhat abstract to employees or is only learned during an actual crisis. The quality of preparation as a basis for *warming up* thus varies considerably even within the same administrative body: While some departments lack specific preparations for crisis situations, others have more detailed plans and concepts, some of which are based on the work of individual persons, although it is unclear to what extent these are known to other involved parties. These differences indicate that the capacity to transition into crisis mode is shaped not only by the activation of formal structures but also by the extent to which relevant knowledge, routines, and interdepartmental relationships have been established beforehand.

When a crisis occurs, a crisis team serves as the central formal structure through which the transition to acute crisis management is organizationally carried out. Most respondents associate municipal crisis management primarily with the structures and processes of an actively meeting crisis team. The crisis team is firmly integrated into the administrative organization and has defined leadership and participation structures with permanent and event-specific members. Within the analytical framework used in this paper, it can be understood as a hybrid structure between the routine and acute crisis mode: It remains part of formal administration but enables working methods that differ from routine administrative operations during a crisis. These include an increased pace of work, more direct coordination, and more intensive cooperation between administrative departments. Furthermore, interviewees perceive hierarchies as less pronounced than in routine administrative operations.

While the fire department and public order office are frequently identified as central actors due to their regular exposure to unforeseen and time-critical situations, other administrative departments tend to rely more heavily on stable and predictable processes. Within the *hot* response phase, improvisation and flexible action also take on greater importance. Existing concepts and plans are viewed as important, yet their limitations are also pointed out. One IP stated that while concepts may read convincingly on paper, not all possible scenarios can be considered in advance, since “one thing is [...] planning and the other is [...] real life” (IP 12, 44). In this context, improvisation does not mean abandoning legal obligations. It is explicitly pointed out that even in a crisis, the administration cannot do “whatever it wants” and that legal requirements must still be observed (IP 11, 162). Instead, existing room for discretion needs to be used more fully, allowing for pragmatic decision-making. This is succinctly expressed in the following statement:

A crisis shatters every cage. You have to pragmatically achieve a result in no time. Sure, you still have to act with a fair amount of certainty—I’m not saying otherwise. But you can’t hold yourself back by… well sometimes people throw the building blocks right at their own feet and then wonder why they’re not getting anywhere. (IP 2, 136)

Informal networks also play an important role in the ability to act during a crisis. Respondents repeatedly cite mutual familiarity as a prerequisite for rapid and trusting collaboration. Existing contacts facilitate coordination between different administrative departments and help in assessing the responsibilities and professional competencies of others. According to some interviewees, the pandemic—as a long-term crisis—has strengthened informal networks. Collaboration among numerous administrative units fostered mutual understanding across roles, functional areas, and disciplines, thereby creating conditions that may facilitate organizational learning. Informal networks are also seen as a kind of outlet, allowing people to use existing contacts to easily bypass or simplify certain bureaucratic processes or reporting channels. “In times of crisis, it’s definitely helpful when you can actually call the head of such-and-such a department. [...] And it was just GOOD that, in principle, you could simply talk to the right people from the office at any level” (IP 4, 127). Several interviewees described the appeal of crisis management as the opportunity to bypass or simplify established bureaucratic processes.

Overall, respondents view internal administrative cooperation predominantly in a positive light, especially when crisis team members already know one another and have developed shared routines. At the same time, interviewees identify unclear responsibilities, insufficient awareness of individual roles, and limited availability outside regular working hours as challenges. The latter two issues are particularly associated with administrative units that are less routinely exposed to crisis-related tasks.

The transition from acute crisis management back to regular administrative operations appears to happen in a significantly less structured manner. The interviewees describe a crisis as having been overcome when special crisis structures—such as the crisis management team—are no longer needed and the remaining tasks can once again be handled in regular administrative structures.

Thus, a transition from “response” to “recovery” is evident in the data. However, this transition is not typically accompanied by processing the lessons learned during the crisis. The understanding of crisis management is heavily focused on the acute response phase: When asked about the importance of municipal crisis management, the crisis team and coordination in the acute phase are specifically mentioned. Elements of preparation are mentioned less frequently, and elements of follow-up are almost never brought up spontaneously. Expectations regarding other actors also relate almost exclusively to their contributions during the acute phase. Requirements for joint preparation or especially follow-up, on the other hand, remain largely unmentioned.

This less pronounced *cooling down* phase is particularly evident in the handling of experiential knowledge. Knowledge management in municipal crisis management is predominantly described as person-centered, informal, and situation specific. When asked about systematic follow-up procedures in the event of a crisis, most IP could not think of any specific meetings, protocols or similar measures for knowledge retention: „I think it just depends on the specific job you have there. […]. But it’s more of a verbal exchange; we haven’t put anything in writing or anything like that” (IP 4, 225). Structured follow-up activities, to the extent that they occur, tend to take place within individual departments, teams, or divisions rather than jointly with all actors involved in crisis management. As a result, experiential knowledge often remains confined to oral transmission—to the annoyance of one IP:

What really bothers me personally right now is this: We’re all companies that rely on verbal communication now. Right? Especially here in this area of crisis management. Unfortunately, that’s the case. Right? How did it work back then? How did you handle it back then? The fact that we just talk about it verbally. We’re constantly having meetings, talking. We need to have a written policy or set of rules. (IP 7, 181–182)

Another IP summarized the situation as follows: “[…] there is often a lack of organizational transformation of this implicit knowledge—that is, its explanation, standardization, or preservation for future situations—We know exactly how to do it, but we haven’t written it down yet.” (IP 14, 30). Although checklists, folders, or digital files exist in individual departments, the findings do not reveal a uniform and binding approach to knowledge documentation across the entire administration. Institutionalized “lessons learned” are known in the administration’s *hot* shares and among experienced interviewees but have only been partially incorporated into existing plans. Overall, the prevailing view is that somehow everything has always worked out, and while the knowledge exists within informal networks of those involved in crisis management, it still needs to be documented—a task for which, however, no one feels responsible.

Several reasons for the limited follow-up become apparent in the data. On the one hand, staff turnover makes it difficult to permanently preserve experiential knowledge. When staff members change, not only is knowledge about existing processes lost, but in some cases also the reason behind why certain regulations were originally established. Another IP described the loss of knowledge during staff changes by stating that expertise is lost with every change, “even if it’s just a phone number” (IP 12, 56). On the other hand, in everyday administrative operations, a lack of time to systematically engage with existing knowledge exists. For example, one IP reported that, despite having numerous files available, they had not found the time within a year and a half to even review them all thoroughly because the demands of day-to-day business were too extensive. Furthermore, even in the context of preparation, it was noted that without institutional embedding, a structured review of past situations often does not take place, and while experiences are sometimes adapted, they are rarely systematically reflected upon or documented. The *cooling down* transition back to routine operations is thus clearly recognizable from an organizational perspective, whereas the subsequent knowledge retention is established in a much less consistent manner.

Extended Cycle Model

The case study indicates that municipal administrations can enter a *hot* organizational mode, but that the transitions into and, in particular, out of this mode remain insufficiently institutionalized. The *cooling down* phase is characterized by blurred boundaries and often unfolds without clearly defined procedures. At the same time, it provides a potential “window of opportunity” for organizational learning, during which experiences gained during crisis operations can be reflected upon and translated into organizational knowledge (see Figure 3). This emphasis on knowledge retention is also reflected in the follow-up phase of the BBK cycle and in Pursiainen’s (2018) model.

Warming up describes the transition from routine administrative work into crisis mode. For some interviewees, this process is primarily associated with the activation of the crisis team.During the *hot* phase, crisis management structures such as the crisis

team operate according to organizational principles that differ considerably from everyday administrative routines while remaining embedded within the broader bureaucratic organization (see also Schulte et al. 2024). Existing bureaucratic routines are increasingly complemented—or temporarily replaced—by more flexible forms of coordination, accelerated decision-making, improvisation and intensified cross-departmental collaboration.

The proposed cycle model extends Soeters et al.'s distinction between *hot* and *cold* organizational parts by conceptualizing municipal crisis management as a dynamic process rather than an organizational state. The routine working mode of municipal administrations is characterized as predominantly *cold*. When a crisis requires the activation of municipal crisis management structures, a *warming up* process begins. This period refers to the acceleration or suspension of bureaucratic routines. The *hot operation* represents crisis response measures such as improvisation, cross-boundary coordination and flexible problem solving. Once the crisis has been tackled and routine operations can resume, the *cooling down* phase begins. *Cooling down*—in contrast to *warming up*, which tends to happen more spontaneously—is deliberately presented as a separate phase to draw attention to the importance of consciously setting aside time for it, with a focus on knowledge management and learning. During this phase, namely, the process of dealing with experiential knowledge begins, and it determines whether this knowledge is collected, discussed, or translated—or whether it is lost. Opportunities for learning exist throughout the entire cycle but are particularly pronounced during the "window of opportunity" following the acute response phase, when experiences are still recent and can be systematically reflected upon before the opportunity gradually narrows. Ideally, experiential knowledge is then systematically organized, documented, and incorporated into existing concepts and documents. In this way, new insights can ideally be incorporated into shared organizational routines, making them accessible and applicable to employees in future crisis situations.

Discussion

The hot/cold perspective developed by Soeters et al. (2006) was applied to municipal crisis management in public administration and the findings emphasize that municipal crisis management is not adequately described by assigning the bureaucratic administrations to either a hot or a cold category. Rather, different modes can coexist within the same administration and become more or less dominant depending on the situation. Fire departments and public order offices, for example, have greater routine exposure to uncertain and time-critical situations, while other administrative departments primarily operate under predictable conditions and with established procedures. Crisis teams further illustrate this hybridity: they remain embedded in formal administrative structures while simultaneously enabling faster communication, closer interdepartmental coordination, and more flexible decision-making.

The relevant question is therefore not whether municipal administrations are bureaucratic or crisis-capable, but how they activate, sustain, and terminate crisis-oriented ways of organizing while maintaining the structures required for reliable administrative action. This perspective also avoids interpreting bureaucracy as an organizational deficit. Duit (2016) contrasts traditional Weberian bureaucracy with resilient public administrations, emphasizing the importance of non-hierarchical networks, organizational reserves, diverse knowledge sources, stakeholder participation, and social learning. Rather than suggesting that bureaucratic structures should be abandoned, this perspective highlights the need to complement them with adaptive organizational capacities.

The findings show that increasing pressure can accelerate administrative processes and shorten communication pathways without necessarily eliminating formal structures. Municipal administrations therefore need to complement their predominantly *cold*, bureaucratic working modes with more flexible and rapid forms of coordination during crises, for example within crisis management teams. However, the institutionalization of experience gained during *hot* operations remains considerably less systematic. The main contribution of this paper is to highlight the transitions between these working modes, particularly the transition from acute crisis management back to routine operations, and its implications for organizational learning.

Characteristics associated with the *cold* mode—formal responsibilities, procedural consistency, legal certainty, and documentation—remain important during crises. The concept of *warming up* highlights that transitions into crisis mode are not solely triggered by the onset of an incident. They can also be facilitated through prior preparation, including exercises, training, role clarification, and network building. These activities establish organizational and interpersonal conditions that may enable more effective coordination under pressure.

The findings point to an asymmetry between entering and leaving crisis mode. While formal structures such as crisis teams can provide a relatively clear mechanism for moving into acute crisis management, the transition back to routine administration is often less institutionalized. Once a crisis team is dissolved, the crisis may be considered to be organizationally "over", even though its experiences and consequences have not necessarily been systematically processed.

This finding complements existing crisis management cycle approaches, which conceptualize follow-up and learning as an important component of crisis management (BBK n.d.; Pursiainen 2018). It also supports research emphasizing post-crisis reflection and crisis-induced learning (e.g. Broekema 2018). However, the present findings suggest that the transition itself warrants analytical attention. *Cooling down* should not be understood merely as the end of response activities or as a passive return to the previous state. It should constitute its own phase in the crisis management cycle with a window of opportunity in which experiences from the hot mode can either be reflected upon and incorporated into future practice or remain largely implicit and person dependent.

The findings indicate that this window is currently only partially used. Follow-up activities were more likely to occur within individual departments than across the administration, while systematic documentation and institutional responsibility for retaining crisis-related knowledge were often lacking. As a result, experiences may remain embedded in individual employees, informal networks, or local documents rather than becoming part of organizational knowledge. Staff turnover and limited time further increase the risk that such knowledge is lost.

Organizational learning requires more than individual employees gaining experience. The empirical material suggests that municipal administrations frequently develop experiential knowledge during crisis operations but face difficulties in transferring this knowledge into organizationally embedded forms. The challenge is therefore not necessarily a lack of learning opportunities, but the institutionalization of learning after the acute situation has ended.

The findings suggest that flexibility and improvisation as essential elements of effective crisis response (Webb & Chevreau 2006) are not determined solely by formal organizational structures but are also influenced by interpersonal relationships, trust, and the scope for discretion within administrative hierarchies. In this context, leadership may play an important role in balancing bureaucratic accountability with the need for crisis-oriented flexibility. By providing orientation and enabling situational decision-making, leaders can potentially facilitate transitions between routine and crisis modes. At the same time, the findings indicate that informal networks can facilitate rapid coordination while also creating dependencies on individuals. Informality can thus increase short-term crisis capacity without necessarily producing sustainable organizational learning.

This points to a tension between the advantages of informal crisis coordination and the need for subsequent institutionalization. Networks and personal relationships can provide an important basis for effective crisis action, but they remain vulnerable when knowledge is not transferred into shared structures. The challenge is therefore not to replace informal coordination with formalization, but to connect the two: informal experience and relationships generated during crisis operations need mechanisms through which they can be reflected upon, documented, and made accessible to the wider organization.

The findings also contribute to the broader discussion of resilience and post-crisis development. Resilience is increasingly understood not only as the capacity to return to a previous state but also as the ability to adapt and develop following disruption. In this sense, the idea of "bouncing forward" (Manyena et al. 2011) is particularly relevant to municipal administrations. If crisis experience is systematically reflected upon and translated into revised procedures, training, responsibilities, or networks, the organization may emerge from a crisis with modified capacities rather than simply restoring its previous routines.

However, the findings do not suggest that every crisis automatically produces organizational learning or adaptation. Rather, they indicate that *cooling down* phase creates conditions under which such learning may occur. Without taking time, defining responsibilities, documentation, and opportunities for cross-departmental reflection, the return to routine can also mean a return to established patterns without substantial organizational change. Organizational learning should be conceptualized as a cross-cutting process that may occur throughout the crisis management cycle but becomes particularly consequential during the transition back to routine.

This study has several limitations. First, the qualitative case study of a single municipal administration provides in-depth insights but cannot be considered representative of municipal administrations more broadly, given their heterogeneity in size, structure,

resources, responsibilities, geographical context and crisis management experience. Second, self-selection bias cannot be ruled out (Hiratsuka 2025). The 14 interviewees were recruited through an initial contact person and subsequent snowball sampling. Participation was voluntary, and 11 contacted individuals did not respond. Although the sample covers different administrative functions and hierarchical levels, it may not capture the full range of perspectives, as individuals particularly interested in or involved in crisis management may have been more likely to participate. Third, the analysis relies exclusively on interview data and therefore reflects perceptions and experiences reported by the interviewees. Without systematic triangulation with observations, administrative documents or other sources, the findings should be understood as accounts of organizational structures and practices rather than an objective assessment of the municipality's crisis management capacities.

Conclusion

Research on municipal crisis management should pay greater attention to the organizational transitions between routine operations and crisis response. Existing approaches distinguish between prevention, preparation, response, and recovery, while the mechanisms that enable organizational movement between these conditions remain less visible. Future research should therefore examine how different organizational units contribute to *hot* operations, and under which conditions crisis experiences are subsequently institutionalized.

Furthermore, the findings suggest that organizational learning should be deliberately integrated into the transition out of crisis mode. Structured debriefings, cross-departmental evaluations, documentation of decisions and experiences, updating of plans and training, and explicit allocation of responsibility for follow-up could help prevent crisis knowledge from remaining person-dependent. Exercises may also serve not only to test plans but to establish and maintain the relationships and communication structures required for later crisis coordination.

Overall, the central challenge for municipal administrations is not to overcome bureaucracy, but to develop the organizational capacity to move between bureaucratic routine and crisis-oriented action without losing the advantages of either. Effective crisis management therefore depends not only on the ability to *warm up* when circumstances require rapid and flexible action, but also on the ability to *cool down* in a way that preserves and transforms the knowledge generated during the crisis. The latter transition may be decisive for whether crisis experience remains an isolated episode or contributes to longer-term organizational learning and adaptation.

Future research could build on these findings by examining how leadership and other organizational factors shape the transition between cold and hot organizational modes, as well as the subsequent process of cooling down. Comparative case studies involving municipalities of different sizes and administrative structures could further help to identify which organizational conditions facilitate these transitions and the institutionalization of crisis-related learning.

Declarations

Author Contribution

A.S. wrote the main manuscript text and prepared figures.; P.S. wrote the thate of research on organizational learning; Y.T. wrote parts of the findings. All authors reviewed the manuscript.

References

1. Argyris C, Schön DA (1978) Organizational Learning: A Theory of Action Perspective. Addison-Wesley, Reading
2. Bagali MM (2026) Organizational Resilience and Crisis Management in Public Administration: Building Adaptive Governance Capacity in an Age of. Compd Disruptions IJAMRS 2(2):62–69. https://doi.org/10.63090/IJAMRS/3107.9695.0026
3. Behnke N (2025) Resilienz-Ressourcen im Verwaltungshandeln. In: Gräfe P, Hafner J, Kastilan A, Süß LA (eds) Politik und Verwaltung. Verstehen und Verändern, 1st edn. Nomos, Baden-Baden, pp 327–350
4. Broekema WG (2018) When does the phoenix rise? Factors and mechanisms that influence crisis-induced learning by public organizations. Dissertation, Leiden University

5. Bundesamt für Bevölkerungsschutzund, Katastrophenhilfe (n.d.) Krisenmanagement ist ein Zyklus. Bundesamt für Bevölkerungsschutz und Katastrophenhilfe. https://www.bbk.bund.de/DE/Themen/Krisenmanagement/KMZirkel/KMZirkel_node.html. Accessed 2 September 2026
6. Deverell E (2010) Flexibility and rigidity in crisis management and learning at swedish public organizations. Public Manag Rev 12(5):679–700. https://doi.org/10.1080/14719031003633946
7. Duit A (2016) Resilience Thinking: Lessons for Public Administration. Public Adm 94(2):364–380. https://doi.org/10.1111/padm.12182
8. Eckhard S, Lenz A, Seibel W, Roth F, Fatke M (2021) Latent Hybridity in Administrative Crisis Management: The German Refugee Crisis of 2015/16. J Public Adm Res Theory 31(2):416–433. https://doi.org/10.1093/jopart/muaa039
9. Floeting H (2023) Stärkung städtischer Resilienz. Lernen aus der Krise. In: Wollinger GR (ed) Krisen & Prävention, Expertisen zum 28. Deutschen Präventionstag, pp 185–202
10. Graf F, Lenz A, Eckhard S (2024) Ready, set, crisis – transitioning to crisis mode in local public administration. Public Manag Rev 26(7):2039–2063. https://doi.org/10.1080/14719037.2023.2242851
11. Hasan MK, Aunto TK, Ahmed T, Calma KR, Ranse J (2026) Trends and advancements in disaster preparedness research: A global bibliometric analysis (1951–2024). Nat Hazards Res 6(3):622–631. https://doi.org/10.1016/j.nhres.2025.12.004
12. Helfferich C (2014) Leitfaden- und Experteninterviews. In: Baur N, Blasius J (eds) Handbuch Methoden der empirischen Sozialforschung. Springer Fachmedien Wiesbaden, Wiesbaden, pp 559–574
13. Hiratsuka T (2025) The volunteer participation paradox: Ethical tensions between self-selection and targeted sampling. Res Methods Appl Linguist 4(2):100206. https://doi.org/10.1016/j.rmal.2025.100206
14. Hustedt T (2019) Verwaltung und der Umgang mit Krisen und Katastrophen. In: Veit S, Reichard C, Wewer G (eds) Handbuch zur Verwaltungsreform, 5th edn. Springer Fachmedien Wiesbaden, Wiesbaden, pp 181–190
15. Kuhlmann S, Franzke J, Peters N, Dumas BP (2024) Institutional designs and dynamics of crisis governance at the local level: European governments facing the polycrisis. Policy Des Pract 7(4):409–429. https://doi.org/10.1080/25741292.2024.2344784
16. Kuhlmann S (2025) Verwaltungsmodernisierung in Deutschland. Five Hundred Miles to Walk – and More. In: Gräfe P, Hafner J, Kastilan A et al (eds) Politik und Verwaltung. Verstehen und Verändern, 1st edn. Nomos, Baden-Baden, pp 207–238
17. Lass-Lennecke K (2020) Herausgeforderte Organisationen – Lernende Organisationen: Wandel durch organisationales Lernen heute. Universität Potsdam. https://www.uni-potsdam.de/fileadmin/projects/qup/dokumente/QUP2_Q3_1_Lernende_Organisation__Studienbrief__Leseprobe_.pdfAccessed 10 November 2026
18. Lass-Lennecke K, Rehder S, Wagner D, Madani R (2024) Herausgeforderte Organisationen, 1st edn. Kohlhammer, Stuttgart
19. Lenz A, Eckhard S (2023) Conceptualizing and Explaining Flexibility in Administrative Crisis Management: A Cross-district Analysis in Germany. J Public Adm Res Theory 33(3):485–497. https://doi.org/10.1093/jopart/muac038
20. Lenz A (2024) Managing crises as if no one is watching? Governance dilemmas from a public perspective. Public Adm 102(4):1397–1417. https://doi.org/10.1111/padm.12980
21. Lenz A, Eckhard S (2025) Unbureaucratic Behavior in Times of Crisis: Rule-Breaking by Public Administrators. Rev Public Pers Adm. https://doi.org/10.1177/0734371X241311279
22. Löcher A (2011) Innovative Verwaltung? Organisationskultur als Innovationsdeterminante. In: Jesse E (ed) Europas Politik vor neuen Herausforderungen. Budrich, Opladen, pp 251–265
23. Loosen W (2014) Das Leitfadeninterview – eine unterschätzte Methode. In: Averbeck-Lietz S, Meyen M (eds) Handbuch nicht standardisierte Methoden in der Kommunikationswissenschaft. Springer Fachmedien Wiesbaden, Wiesbaden, pp 1–15
24. Manyena SB, O'Brien G, O'Keefe P, Rose J (2011) Disaster resilience: a bounce back or bounce forward ability? Local Environ 16(5):417–424. https://doi.org/10.1080/13549839.2011.583049
25. Mayring P (2022) Qualitative Inhaltsanalyse. Grundlagen und Techniken. Beltz Verlagsgruppe, Weinheim
26. Neumann O, Mettler T (2023) Innovation. In: Soguel N, Bundi P, Mettler T, Weerts S (eds) Die öffentliche Verwaltung verstehen und gestalten: Das IDHEAP-Modell. Somedia Buchverlag Edition Rüegger, Ennenda, pp 239–250
27. Pursiainen C (2018) The Crisis Management Cycle. Routledge, New York

28. Richenhagen G, Schat HD (2019) Ideenmanagement in Behörden. In: Landmann N, Schat HD (eds) Ideen erfolgreich managen. Springer Fachmedien Wiesbaden, Wiesbaden, pp 201–210
29. Schätzle L, Trapp JH (2025) Krisenmanagement als kommunale Daueraufgabe? Zum kommunalen Handeln zwischen Regelstrukturen im Normalbetrieb, Transformationserfordernissen und permanentem Krisenmanagement. Difu Policy Pap 7. https://doi.org/10.34744/difu-policy-papers-2025-7
30. Schulte Y, Schönefeld M, Schütte P, Schmitt A, Fiedrich F (2024) Kommunalverwaltungen im Krisenmodus. Fallstudienbericht. Bergische Universität Wuppertal. https://kovik.uni-wuppertal.de/fileadmin/site/kovik/daten/Fallstudie_Kommunalverwaltungen-im-Krisenmodus.pdf. Accessed 26 June 2026
31. Schuppan T, Köhl S (2016) Krisenmanagement – Herausforderung für das. Public Management?! VM 22(3):115–125. https://doi.org/10.5771/0947-9856-2016-3-115
32. Schütte PM, Schulte Y, Schönefeld M (2023) Öffentliche Verwaltungen im Krisenmodus. Herausforderungen durch eine Doppelrolle. Transform Cities 1(2023):74–77
33. Soeters JL, Winslow DJ, Weibull A (2006) Military Culture. In: Caforio G (ed) Handbook of the Sociology of the Military. Springer US, New York, pp 237–254
34. Stark A (2014) Bureaucratic Values and Resilience: An Exploration of Crisis Management Adapattion. Public Adm 92(3):692–706. https://doi.org/10.1111/padm.12085
35. Tegneborg T (2020) Barriers to Crisis-induced Learning within a Public Agency A process-tracing plausibility probe of obstacles to MSB:s learning from the forest fire in Västmanland 2014. https://www.diva-portal.org/smash/get/diva2:1529280/FULLTEXT01.pdf. Accessed 19 October 2026
36. Thielsch MT, Röseler S, Kirsch J, Lamers C, Hertel G (2021) Managing Pandemics-Demands, Resources, and Effective Behaviors Within Crisis Management Teams. Appl Psychol 70(1):150–187. https://doi.org/10.1111/apps.12303
37. Ulmer RR, Sellnow TL, Seeger MW (2015) Effective crisis communication. Moving from crisis to opportunity. Sage, Thousand Oaks
38. Webb GR, Chevreau FR (2006) Planning to improvise: the importance of creativity and flexibility in crisis response. Int J Emerg Manag 3(1):66–72. https://doi.org/10.1504/IJEM.2006.010282
39. Weber M (1921) /22) Wirtschaft und Gesellschaft. Grundriß der verstehenden Soziologie. Mohr, Tübingen

Figures



Figure 1

Crisis management cycle by the Federal Office of Civil Protection and Disaster Assistance (Bundesamt für Bevölkerungsschutz und Katastrophenhilfe n.d.; own translation and illustration)

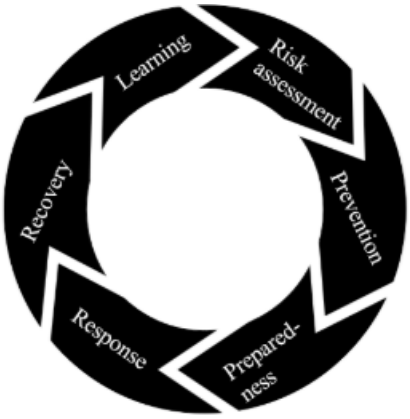


Figure 2

Crisis management cycle by Pursiainen (2018, 5; own illustration)

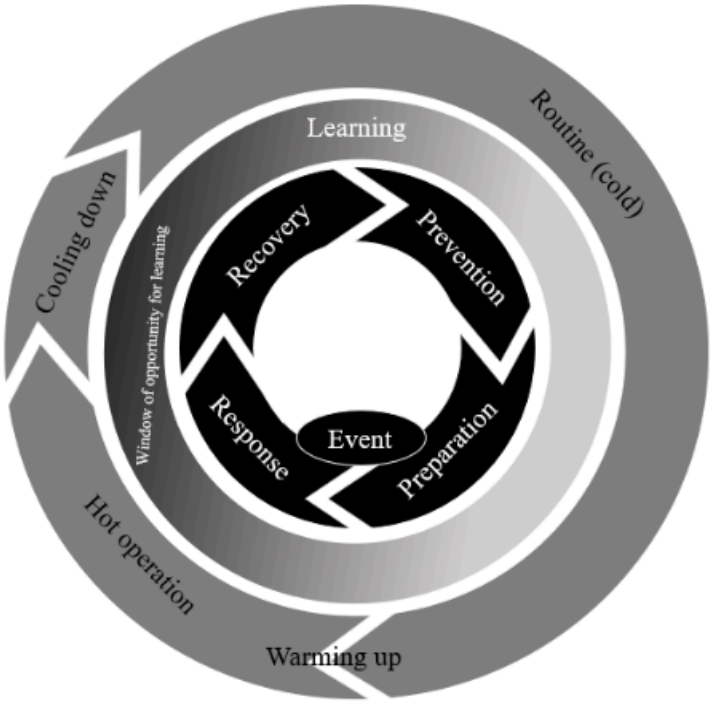


Figure 3

Extended cycle model (own illustration)

Supplementary Files

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- Appendix.docx