JURNAL LOCUS: Penelitian & Pengabdian
Volume 5 No. 5 May 2026
E-ISSN 2829-7334| P-ISSN 2829-5439
Hompage: https://locus.rivierapublishing.id/index.php/jl

Integrating Spatial Planning, Crisis Communication, and Support Facilities Into Family Assistance Centre Governance for Aviation Disaster Preparedness

Dinda Kharisha*, Hayati Sari Hasibuan, Widura Imam Mustopo
Universitas Indonesia
Email: dinda.kharisha31@ui.ac.id*

Keywords:
Family Assistance Centre (FAC);
Aviation Crisis Management;
Emergency Preparedness;
Spatial Syntax

Abstract

The objective of this research is to analyze the governance and effectiveness of FAC preparedness at Airline X in Indonesia by focusing on three operational dimensions: spatial configuration, communication strategies, and support facilities. The analysis is based on interviews with FAC personnel, emergency response roles, top management, practitioners, an accident response informant, KNKT, and DGCA with support from document examination and space syntactic analysis of potential FAC locations at Soekarno-Hatta International Airport. The data indicates that FAC is formally acknowledged in Airline X's, but its operational readiness is inconsistent. There are three main challenges: differing perceptions of FAC responsibilities across different levels of the organization, the communication flow between the airline and stakeholders involved in providing family assistance is unclear, and there is no reference to what facilities and infrastructure are needed. Spatial preparedness is more than a facilities issue. FAC activation requires predesignated rooms, controlled access, family briefing, registration, medical and psychosocial assistance, logistical arrangements and multi-agency coordination and is a governance challenge. The reports recommend that FAC governance be formalized through improved procedures, periodic simulation, standards for facilities, and family-centered communication protocols along with concepts of aviation disaster relief.

INTRODUCTION

Air transportation provides linkage and supports economic activities such as movement of passengers and cargo across regions, especially in countries such as Indonesia, where inter-island mobility is largely reliant on reliable aviation services (Chen & Zreik, 2025; Itoh et al., 2026; Samunderu, 2024; Tiftik & Yakupoğlu, 2023; Xu et al., 2025). Air transport is widely recognized as one of the safest modes of transportation due to its safety management systems, operational standards, and regulatory oversights. However, the possibility of accidents can never be completely eliminated. When a flight is disrupted, diverted, or involved in an accident, the consequences are not limited to operational issues. Such events may also create humanitarian concerns, organizational challenges, and reputational risks. Therefore, structured

emergency management and recovery mechanisms are essential to ensure that response is coordinate, timely, and sensitive to needs of those affected (CANSO, 2015).

Disasters are extraordinary events that disrupt social order, cause loss of life, damage property, interrupt economic activity, and affect the environment; from a disaster management perspective. Their effects frequently outweigh the ability of impacted communities or organizations to react on their own, necessitating coordinated intervention and outside support (DiBella et al., 2023; Mbanefo et al., 2026; Son et al., 2025). Therefore, preparedness, response, recovery, and mitigation are interrelated phases of disaster management that all prioritize proactive planning, coordination, and strategic intervention to reduce negative impacts (Bahmani & Zhang, 2022; Pool & Coppola, 1991; Tierney et al., 2001).

Disasters in Indonesia are legally classified as natural, non-natural, and social disasters. Transportation accidents, technological failures, industrial hazards, nuclear incidents, environmental pollution, and other human-induced events are examples of non-natural disasters. Transportation accidents are categorized as an incident that transpires in modes of transportation that involve land, sea, or air. Because of their catastrophic potential, high fatality risk, public visibility, and the complexity of the response required, aviation accidents can be categorized as significant non-natural disasters (Keputusan Kepala BNPB No 308 Tahun 2024, 2024; Undang-Undang Republik Indonesia Nomor 24 Tahun 2007 Tentang Penanggulangan Bencana, 2007).

Aviation disasters are not only technical safety events, but also crisis situations that necessitate a coordinated support response, effective communication, and swift organizational response for the affected individuals. Mechanical failure, human error, severe weather, or external hazards may all contribute to the occurrence of such disasters. In order to reconstruct the sequence of events and identify relevant causes for future safety improvement, aviation authorities and technical specialists typically conduct a thorough investigation following an aircraft disaster (ICAO, 2015; NTSB, 2020). It is important to note that aviation disaster management extends beyond accident investigations. It also encompasses the obligations of airlines and governments to provide humanitarian assistance to survivors, victims, and their families who need immediate information, emotional support, logistical support, and protection from further suffering.

In this case, crisis management is a critical component of aviation catastrophe response. Crisis management is a planned, coordinated response to unforeseen occurrences that could have a negative impact on a company. The objective is to return to normal with the least impact. Crisis management in the aviation sector requires cooperation between airlines, airport operators, government, emergency services, investigation authorities, humanitarian organizations and other relevant. Multi-agency cooperation is often required following a major aviation accident resulting in fatalities, in particular the context of supporting the families of the victims (Bundy et al., 2017; Crichton et al., 2005; Pearson, 1998; Teahen, 2012).

This process is fundamentally dependent on effective communication. Crisis communication should not only protect the reputation of the organization but also address the issues of the public and families of the victims. Organizations are expected to set up control, response, and communication mechanisms in the first critical period after notification in aviation accidents. For instance, during the first hours of crisis, the IATA crisis communication framework supports early acknowledgement, frequent updates, internal information sharing,

digital platform alignment, and visible leadership communication (Brown et al., 2022; Lukaszewski, 2015).

The establishment of a Family Assistance Center (FAC) is one of the most critical mechanisms in aviation disaster response. In practice, a FAC becomes the place where families seek verified information, emotional support, logistical assistance, and protection from unnecessary exposure during the most uncertain phase after an accident. It serves as a structured platform that platform that provides factual updates, emotional and psychological support, logistical assistance, accommodation arrangements, information on victim status, personal belongings management, and updates on the progress of the accident investigations (ICAO Policy on Assistance to Aircraft Accident Victims and Their Families, 2013; SKYbrary, 2026; Teahen, 2012).

ICAO Doc 9998 defines several key groups involved in family assistance, including the government of the state of occurrence and other relevant states, the aircraft operator, the airport operator, third-party support organizations or Non-Governmental Organization, and family associations (if applicable). Each group has different responsibilities and resources; therefore efficient family support requires close synchronization and cooperation among all institutions operating within the national family assistance framework (ICAO Policy on Assistance to Aircraft Accident Victims and Their Families, 2013).

Post-accident situations are very emotional and sensitive to information, making FACs crucial dan important. Families may feel traumatized, grieved, confused, angry, and anxious as they try to find out their loved one and determine their condition. Consequently, FACs must function not only as physical locations but also as structured humanitarian response systems encompassing space, communication, services, and stakeholders' collaboration. In practice, FACs fulfill a variety of responsibilities, such as providing initial notification, providing emergency response updates, identifying victims, managing and returning personal belongings, providing investigative updates, coordinating travel and accommodations, conducting field visits when possible, providing urgent financial assistance, and psychosocial support, and protecting victims from unsolicited legal services (ICAO Policy on Assistance to Aircraft Accident Victims and Their Families, 2013).

FAC governance has developed through international regulatory and operational practices, particularly in countries that have experienced major aviation accidents. In the United States, the Aviation Disaster Family Assistance Act and subsequent NTSB recommendations positioned family assistance as a structured obligation in aviation disaster response. These instruments emphasize that airlines are expected to prepare family assistance plans, coordinate with relevant response agencies, and train personnel who may interact directly with affected families (NTSB, 2020). This development highlights that family assistance is not an optional humanitarian measure, but rather a structured component of aviation disaster response.

International operational practices and regulation have also impacted on the evolution of FAC governance. Following significant aviation disaster in the United States, the Aviation Disaster Family Assistance Act was implemented, requiring airlines to develop comprehensive strategies to accommodate families of passengers. Furthermore, the National Transportation Safety Board established a task force that produced recommendations prioritizing training for airline personnel and third parties dealing with directly affected families (National

Transportation Safety Board, 2020). This development emphasize that family assistance is not a voluntary humanitarian act, but rather a structured element of the aviation disaster response.

For airlines that have not experienced a fatal accident, this distinction becomes even more critical, as airlines are still required to demonstrate the ability to effectively active FACs when needed and maintain preparedness. This is because FACs must be accessible to families after an accident, with government support and support services, while maintaining privacy, security, and emotional protection. Therefore, spatial configuration is crucial. To reduce confusion and inconvenience, the internal layout should facilitate intuitive movement between service areas, including reception stations, briefing rooms, counseling rooms, medical treatments rooms, rest rooms, prayer rooms, and media-free zones. In order to mitigate confusion and distress, the internal layout should facilitate intuitive movement between service areas, including reception stations, briefing rooms, counseling rooms, medical care rooms, rest areas, prayer spaces, and media-free zones.

Thus, the administration of the FAC at Airline X, an Indonesian airline, is examined in relation to aviation accident preparedness. Although Airline X has not encountered a significant aviation accident, it is a member of a high-risk industry that necessitates ongoing preparedness through the implementation of an Emergency Response Plan (ERP) and supporting crisis management mechanisms. This research concentrates on three critical operational dimensions: spatial configuration, communication mechanisms, and supporting facilities, which all have an impact on the efficacy of FAC governance.

The novelty of this study is that it positions the FAC as an integrated disaster management mechanism that integrates planning for space, crisis communication, and family-centered service governance, rather than merely as a post-accident support facility. In the development of more operationally grounded FAC standards for aviation disaster preparedness, this perspective provides practical contributions for airlines and regulators.

RESEARCH METHOD

This study uses a qualitative approach with a case study design to examine the management of FAC in the context of an aircraft accident. The qualitative approach was chosen to gain in-depth insight into the operational and managerial aspects of FAC management and to develop policy recommendations for improvement. A single case study of Airline X was selected, which provides a real-world context to explore the crisis response process, spatial arrangement, and integration of FACs within the airport environment. This design allows for an in-depth understanding of how spatial, organizational, and regulatory factors interact in FAC implementation.

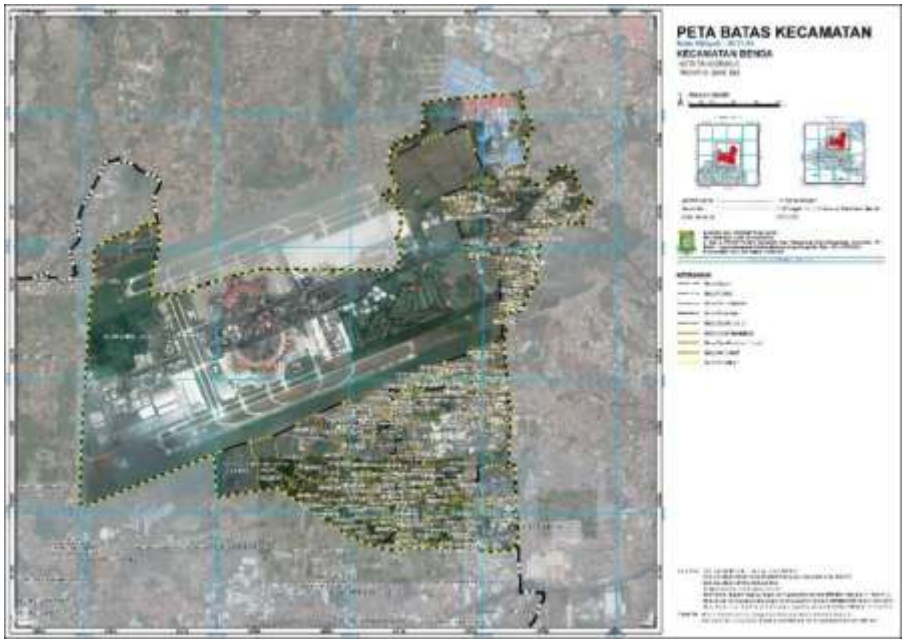

Figure 1 Research Location
Source: https://maps.tangerangkota.go.id/petacetak/

This research was conducted in Soekarno-Hatta Internationa Airport (CGK), Tangerang, Banten, Indonesia. Soekarno-Hatta is a suitable context to evaluate the operational readiness and evolution of a FAC in the case of posibble aviation disasters. It is one of the busiest airports in Southeast Asia and the main hub for air transport in the country. The study focused on the spatial, communication, and facility elements of FAC planning in airlines. To ensure a comprehensive and inclusive perspective, the informant selection strategy varied, including those with direct experience as FACs, practitioners, non-ministerial institutions, ministries, FAC personnel, top management, and practitioners. These criteria were designed to capture a wide range of perspectives.

Informants were selected based on their expetise, pasticipation in previous aviation incident simulations, or official positions in policy and operational implementation, in accordance with the principle of information-rich cases. Specifically, the following were includes:

1. In-depth interviews with:
   a. FAC personnel,
   b. ERP Lead,
   c. FAC Lead,
   d. Top management,
   e. Practitioner,
   f. Key Informant,
   g. National Transportation Safety Committee (KNKT),
   h. Directorate of Airworthiness and Aircraft Operation (DGCA).
2. Secondary Data were collected from official reports, regulatory documents, and operational guidelines relevant to aviation disaster response and FAC management.

Table 1. List of Informant

No.	Informant	Criteria	Method	Total
1.	Airline employee	Trained in FAC	Interview	3
2.	Emergency Response Plan Lead	Directly responsible for emergency planning	Interview	1
3.	Family Assistance Center Lead	Directly responsible for FAC management	Interview	1
4.	Top Management	Corporate level executive who carries out operational functions	Interview	1
5.	Practitioner	Individuals who have more than 20 years of experience working in aviation	Interview	1
6.	Key Informant	Individuals who had direct experience managing or supporting FAC operations, including trained caregivers and emergency response personnel	Interview	1
7.	KNKT	Investigator in aviation accidents	Interview	1
8.	DGCA	Personnel in the section that carries out the preparations of norms, standard and procedures for civil aviation	Interview	1

(author's own processing, 2026)

This research employed a qualitative approach with a case study design, aiming to gain an in-depth understanding of FAC governance within the context of aviation accident response. This approach was chosen for its flexibility in exploring the empirical context, organizational dynamics, and the experiences of informants and management in fulfilling their crucial roles during emergency situations.

The data analysis process follows a thematic analysis approach. Thematic analysis is a widely used method in qualitative research that can be applied across various epistemologies and research questions. As outlined by Braun and Clarke (2006), it is a method for identifying, analyzing, organizing, describing, and reporting themes found within a data set.

In qualitative research, data analysis requires a process of conceptualization, which begins before entering the field through the formulation of guiding concepts. This is followed by categorization and descriptive analysis, which are conducted concurrently with data collection in the field. This is followd by categorization and descriptive analysis in this study is also based on the Miles and Huberman model. The data analysis procedure consists of three essential activities, as described by Huberman & Miles (1986).

a. Data reduction, selecting the most important informtion from field notes and audio and making it more understandable,
b. Data display, placing the filtered data into grid or graphs or narrative text to make it easier to see patterns and draw conclusions,
c. Conslusion drawing & verification, understanding the meaning of the data and ensuring the validity of the results using triangulation and reflective validation.

The coding process was carried out in stages. First, open coding was used to identify key themes. Second, axial coding was used to identify relationships between themes, focusing on

the spatial, communication, and facilities aspects of FAC management. To ensure data validity, source triangulation was conducted by comparing data obtained from various informants, as well as technical triangulation, using multiple data collection techniques on the same issue or focus. Axial Analysis from Space Syntax methodology was used to do a spatial connectivity analysis to go along with the qualitative thematic results. The integration and accessibility of FAC places within the airport layout were evaluated in this analysis, especially with regard to important public and social infrastructure (e.g., clinics, multipurpose halls, religious spaces). This facilitated an assessment of the FAC's possible operational effectiveness and spatial suitability in a disaster scenario.

RESULTS AND DISCUSSION

Uneven Understanding of FAC Governance within the Airline Crisis Management System

The findings show that FAC governance at Airline X has been explicitly recognized as part of the ERP. However, management and FAC team members continue to have varying degrees of knowledge. At the managerial level, FAC is generally recognized as a component of emergency management that facilitates the communication of crisis information to victims' families, survivors, and passengers. However, at the operational level, a number of FAC team members have a tendency to associate FAC primarily with family support following fatalities rather than as an integrated crisis-support system that covers hospitalized victims, survivors, missing persons, ante-mortem data collection, family briefings, psychological support, logistics, and long-term family assistance.

This suggests that operational readiness is not inherently determined by the presence of FAC in corporate emergency documents. The results indicate that while a comprehension of FAC has been established, it is not yet consistent across organizational levels. Additionally, refreshment training, sharing sessions, and structured organizational learning have not been implemented as consistently. This difference is important since FAC operations depend on empathy-based communication, swift decision-making, and role clarity within a highliy sensitive crisis situation.

It is about internalizing governance, not only knowing it as an individual. The FAC should not be perceived as a mere unit that is activated after disaster. Instead it should be part of the airline crisis management cycle reinforced by recurrent training, cross functional drills, tabletop exercised and post exercise evaluation. This consistent with the NTSB framework, which highlights the need for air carries to provide appropriate training to workers and agents who may interact with survivors and family members following an accident. Such training should address a range of issues including family assistance legislation, response partners, psychological first aid, crisis response, interpersonal communication, and stress management.

Spatial Readiness as the Main Governance Gap in FAC Implementation

A key finding of this tudy is that spatial factors are one of the most important yet underdeveloped dimensions of FAC governance. In Airline X, the command room or crisis command function is understood as being located at the Head Office, while family-facing FAC operations may need to be established near the accident location or at other operationally relevant sites. However, the internal corporate documents have not yet provided detailed

standards on spatial configuration, room functions, zoning, access control, and minimum facility requirements. The study also found that existing lists of FAC equipment and room equipment were not fully applicable to actual crisis needs.

Table 2. Matrix of Findings on Spatial Factors in FAC Management

Code	Sub-theme	Informant	Findings
F1	Spatial Aspect in Crisis Conditions	1	Requirements related to space, communication, and facilities that support the FAC are generally based on minimum standards. However, a detailed standard for the minimum layout or spatial arrangement of the FAC has not been explicitly defined in ICAO or IATA documents.
F1	Spatial Aspect in Crisis Conditions	2	The informant explained that the FAC command room must be located at the Head Office, while family assistance service facilities or facilities that can simply be referred to as FAC posts should be adjusted to the operational needs at the incident location. A review of the company's internal documents showed that the spatial concept had not been optimally designed. Several items listed in the company's internal documents as FAC equipment were also found to be not fully applicable to actual FAC room requirements.
F1	Spatial Aspect in Crisis Conditions	3	The current FAC readiness remains conceptual and is largely based on benchmarking results. According to the informant, the company has not yet been able to objectively determine how well the current space, communication systems, and facilities can meet all operating requirements during a real crisis
F1	Spatial Aspect in Crisis Conditions	4	Minimum criteria are frequently referenced in requirements for space, communication, and FAC facilities. However, specific requirements related to the minimum layout and spatial arrangement of the FAC have not been explicitly regulated in ICAO or IATA documents.
F1	Spatial Aspect in Crisis Conditions	5	The informant said that the FAC command room should be in the Head Office, and family assistance service facilities, or FAC posts, should be adapted to operational needs at the incident location. A review of the company's internal documents indicated that the spatial concept had not been optimally designed. Several items listed in the internal documents as FAC room equipment were also found to be not fully applicable to actual FAC room requirements
F1	Spatial Aspect in Crisis Conditions	6	Current FAC readiness remains conceptual and is largely based on benchmarking results. The informant's statement indicates that the company has not yet been able to empirically measure the extent to which the available space, communication systems, and facilities can support all operational needs during an actual crisis.
F1	Spatial Aspect in Crisis Conditions	7	Understanding of FAC space is not yet evenly distributed across all levels of implementation. The existing FAC room and facility requirements are not yet fully supported by ready-to-use operational facilities.
F1	Spatial Aspect in Crisis Conditions	8	If adequate facilities are not available, the company may face difficulties in providing a proper place for victims' families. This view indicates that spatial issues involve not only location

Code	Sub-theme	Informant	Findings
			or place, but also the ability of the selected location to be activated immediately during a crisis.
F1	Spatial Aspect in Crisis Conditions	9	A single crisis center is insufficient, as victims' families should not be placed in one shared location. The separation of locations helps reduce the potential for provocation, noise, and information accumulation among families. Operational budget readiness for a crisis should not be prepared only after a crisis occurs, but must already be available beforehand.
F1	Spatial Aspect in Crisis Conditions	10	There is currently no specific national regulation governing the placement of crisis centers and Family Assistance Centre (FAC) areas. Existing regulations only require operators to maintain an Emergency Response Plan (ERP) that includes emergency handling procedures. Consequently, airlines tend to apply their own standards without a uniform national reference for FAC location, layout, and spatial arrangements.

(author's own processing, 2026)

This finding is significant because FAC is not simply a "place" for families to gather. FAC is a spatially organized humanitarian response system. Its effectiveness depends on whether the physical layout can support privacy, security, information flow, family briefing, medical and psychological support, ante-mortem data collection, child care, spiritual support, registration, logistics, media separation, and inter-agency coordination.

The NTSB Federal Family Assistance Framework strengthens this argument by describing that a FAC should provide safety, security, food and beverage, health services, staff and family badging, daily family briefings, death notification support, victim recovery and identification information, travel and lodging assistance, financial assistance, emotional and spiritual support, respite care for minors, and coordination with hospitals and medicolegal authorities. Therefore, the spatial design of FAC must be connected to the functional needs of family assistance.

In addition, the NTSB recommends that the FAC should ideally be located near the accident area but not within view or walking distance of the accident site, and should have multiple meeting rooms, a large ballroom or conference room, updated information technology infrastructure, food and beverage or kitchen services, and accessibility compliance. The study's conclusion that FAC placement must strike a balance between proximity, privacy, accessibility, and psychological protection for families is substantiated by this.

The Kenton County (2023) offers a spatial paradigm that is more operational. It says the site selection process should examine the incident features, immediate and long-term availability, distance from the incident site, accessibility, parking, adequate size, agency needs, overnight accommodation and transportation services. It also suggests that the floor plan should be designed to accommodate 8–10 family members per prospective victim and that separate spaces be designated for multiple operations. This is very important and a concern for Indonesia aviation because the current regulation state that airlines must implement ERP, but the regulations do not specify exactly where FACs should be located, the minimum number of FAC personnel, area that must be available, and/or what their role.

Proposed FAC Spatial Model for Regulatory Improvement

The study proposes that the regulator should consider issuing a more specific technical guideline for FAC spatial readiness in aviation accidents. This guideline may become an annex or technical circular under emergency response planning requirements for air operators and airport operators. The proposed spatial model consists of three layers.

First, the strategic coordination layer consists of the airline command room, Emergency Control Center, and Joint Family Support Operations Center (JFSOC). The JFSOC is important because FAC operations involve multiple institutions, including the airline, airport authority, regulator, investigation body, health services, police, psychosocial support providers, and other response partners. The National Transportation Safety Board, (2023) framework states that the JFSOC should include meeting space, separate workspace, communication technology, and logistical support for response partners.

Second, the family-facing service layer consists of areas directly accessed by families, including registration and badging, family briefing room, quiet family room, dining area, counseling room, spiritual/reflection room, medical aid station, child respite care, and support services room. The NTSB sample FAC layout includes critical operational areas such as carrier operations, medical examiner/coroner room, child respite care, health services, family member registration/badging, quiet family room, dining area, staff room, charging station, and support services room.

Third, the confidential and sensitive-data layer includes private interview rooms for ante-mortem data collection, DNA reference sample coordination, death notification, next-of-kin consultation, and personal effects management. Kenton County's plan specifically recommends quiet and private interview rooms for ante-mortem data collection and death notification, with suggested numbers of rooms based on the estimated number of decedents and injured persons. This operational detail is relevant for regulators because it provides a measurable basis for minimum room requirements.

This study suggests a layout model for an airline Family Assistance Center based on real-life data and comparisons with other studies from around the world. The suggested layout combines services for families, private information about victims, emotional and spiritual support, medical help, airline representation, registration, and contact all in one secure building. This model is designed to serve as a useful reference for airlines and regulators for setting minimal spatial standards for FAC activation during aircraft accidents.

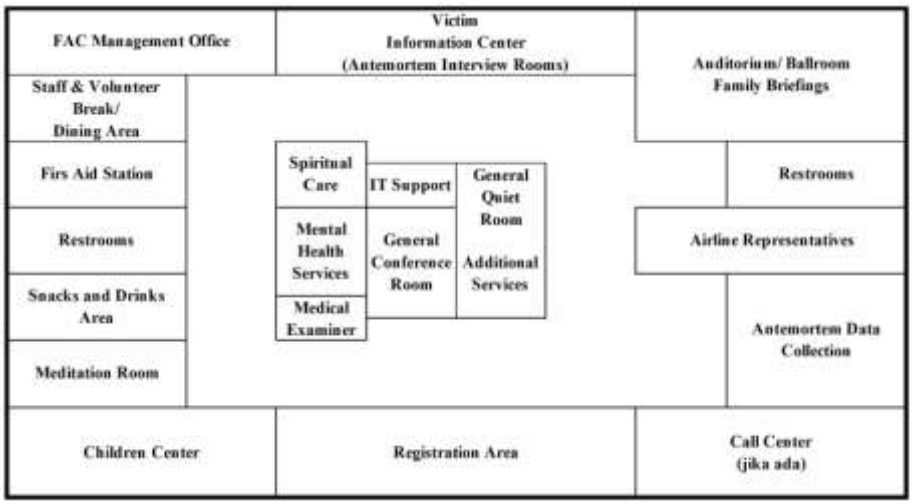

Figure 2. Proposed Spatial Layout Model for Aviation Family Assistance Center (author's own processing, 2026)

Communication and Information Flow

The findings show that communication in Airline X has been procedurally addressed through the Emergency Management Team structure when emergency control is activated. FAC representatives may function as part of the media information center and as communication links between the airline, regulator, and airport Emergency Operation Center. However, the findings also indicate that communication needs to be strengthened, particularly in relation to message consistency, family briefing mechanisms, internal coordination, and pre-crisis communication protocols.

FAC communication must be distinguished from general corporate communication. In a crisis, families should receive verified and compassionate information before information is released to the public. Kenton County's plan explicitly states that family and friends should be notified or made aware of information before it is made public. NTSB also emphasizes family briefings as a mechanism to provide coordinated, official information regarding search and rescue, recovery, victim identification, investigation progress, and other relevant updates.

Table 3. Matrix of Findings on Communication Factors in FAC Management

Code	Sub-theme	Informant	Findings
F2	Communication Aspect in Crisis Conditions	1	Airline X already has arrangements regarding communication flow and role distribution among departments during emergency conditions. The main challenge in crisis communication management is not only related to external communication, but also to internal organizational communication.
F2	Communication Aspect in Crisis Conditions	2	Crisis information management at Airline X is still understood as a conditional information dissemination process and does not yet have a specific time limit for information updates. There are no specific provisions regarding the frequency of information updates, for example every hour, either for victims' families at the FAC or for families who are not physically present at the FAC location.
F2	Communication Aspect in Crisis Conditions	3	Accident response is not the responsibility of only one unit, but requires the involvement of cross-organizational functions.

Code	Sub-theme	Informant	Findings
F2	Communication Aspect in Crisis Conditions	4	Interdepartmental communication is a critical aspect that determines the success of FAC operations. In a crisis situation, the FAC cannot operate separately because the handling of victims' families involves various units and stakeholders, both internal and external to the company.
F2	Communication Aspect in Crisis Conditions	5	FAC team members should come from core departments, particularly those responsible for addressing questions that may potentially demand official company statements. Crisis communication is not only determined by the ability to deliver information, but also by the discipline of personnel in understanding information boundaries and communication authority.
F2	Communication Aspect in Crisis Conditions	6	Ineffective FAC management may potentially create conflict between victims' families and the airline operator. The operator is the party most directly involved with victims' families in the process of providing information, assistance, and fulfilling post-accident needs.
F2	Communication Aspect in Crisis Conditions	7	The FAC is considered to already have a formal reference that can be used by relevant personnel. However, critical perceptions such as "it is already clear" and "it should be safe" still need to be examined. The existence of SOPs does not necessarily guarantee that all personnel have the same understanding of how to implement these procedures.
F2	Communication Aspect in Crisis Conditions	8	Effectiveness is not only determined by hierarchical position, but also by understanding, experience, and coordination networks. The person in charge of the FAC must be able to collaborate effectively with airlines, regulators, and other relevant parties, as FAC governance is not only administrative in nature.
F2	Communication Aspect in Crisis Conditions	9	The success of crisis communication in aircraft accident response is highly determined by the orderliness of the communication system, clarity of roles, and consistency of messages delivered to the public.
F2	Communication Aspect in Crisis Conditions	10	There are no specific regulations governing communication mechanisms with victims' families. Existing regulations only require opertaors to have an ERP that includes emergency response procedures. Consequently, each airline implements its own communication standards without a standardized reference

(author's, 2026)

Therefore, the suggested FAC governance model should include a family communication protocol that defines spokesperson responsibilities, a briefing schedule, message approval flow, translation support, remote participation mechanisms, and documentation of family questions. Communication should be facilitated spatially by a designated family briefing room, private chambers for sensitive communication, and virtual meeting technology for families who are unable to attend in person.

Facility Adequacy and Humanitarian Support Needs

The study found that the adequacy of facilities is closely related to the ability of the airline to provide humane, structured, and sustained support to victims' families. Facilities are not

limited to chairs, tables, and communication equipment, but include medical support, psychological and spiritual care, food and beverages, family rest areas, child care, chargers, hygiene needs, transportation, accommodation, and financial/logistical support.

The NTSB framework identifies access to emotional, psychological, spiritual, and family care services, including mental health providers, support referrals, and respite care for minors, as critical FAC functions. Kenton County's plan further specifies counseling, spiritual care, emotional support rooms, medical aid stations, call centers, and child care centers as part of FAC spatial and service requirements.

This finding supports the argument that FAC facility standards should be formalized. For the regulator, this means that ERP approval should not only verify the existence of an FAC procedure, but also assess whether the operator has identified realistic locations, minimum room functions, equipment lists, vendors, transport support, hotel or convention facility arrangements, and activation agreements.

CONCLUSION

This study concludes that although the FAC at Airline X has been established and included in the emergency response system, it was found that its operational readiness is still not yet mature. Key gaps include uneven understanding among FAC personnel and management, lack of recurring training, no sharing session for refreshers, simulations that have not yet activated the FAC, spatial arrangements and facilities that have not been operationally tested, communication procedures that require more family-centered protocols, and an interagency coordination mechanism that has not been formalized. The most significant contribution of this study is the governance issue in aviation FAC management. FAC should not be understood merely as a crisis post or temporary family waiting area. It should be designed as a structured, secure, private, accessible, and scalable humanitarian response facility that supports family briefing, psychological and spiritual care, ante-mortem data collection, victim identification coordination, medical assistance, child care, logistics, and inter-agency decision-making. Based on the integration of empirical findings from Airline X with the NTSB Federal Family Assistance Framework and the Kenton County FAC Plan, this study proposes the development of a Spatial Governance Standard for Aviation Family Assistance Centers as a regulatory innovation. Such a standard may include minimum criteria for FAC site selection, pre-designated facilities, room zoning, separate access routes, JFSOC integration, family briefing rooms, private interview rooms, counseling and spiritual care rooms, medical aid stations, child respite care, registration and badging systems, communication infrastructure, media separation, and virtual FAC capability. For regulators, the study recommends that FAC spatial readiness be incorporated into aviation emergency response requirements. ERP assessment should not only examine whether an airline has an FAC procedure, but also whether the airline has identified realistic FAC locations, tested spatial layouts, coordinated with airport and local authorities, prepared resource agreements, and conducted joint simulations. This would strengthen the alignment between airline emergency preparedness, family assistance obligations, and international best practices in aviation disaster response. For airlines, FAC optimization requires continuous training, clearer team structure, updated manuals, facility audits, family-centered crisis communication, and formal coordination with external stakeholders. Strengthening these elements will improve not only the airline's crisis response

capacity, but also public trust, organizational resilience, and the humane treatment of victims' families during aviation disasters.

REFERENCES

Bahmani, H., & Zhang, W. (2022). A conceptual framework for integrated management of disasters recovery projects. *Natural Hazards, 113*(2), 859–885. https://doi.org/10.1007/s11069-022-05328-5

Brown, L., Efthymiou, M., & McMullan, C. (2022). Recovering from a major aviation disaster: The airlines' family assistance centre. *Sustainability, 14*(7). https://doi.org/10.3390/su14074040

Bundy, J., Pfarrer, M. D., Short, C. E., & Coombs, W. T. (2017). Crises and crisis management: Integration, interpretation, and research development. *Journal of Management, 43*(6), 1661–1692. https://doi.org/10.1177/0149206316680030

CANSO. (2015). *Emergency response planning guide*.

Chen, Y., & Zreik, M. (2025). Geopolitical bottlenecks and air transport connectivity between China and the UAE: Implications for BRICS+ cooperation and sustainable tourism. *Sustainability, 17*(5), 1930.

Crichton, M. T., Lauche, K., & Flin, R. (2005). Incident command skills in the management of an oil industry drilling incident: A case study. *Journal of Contingencies and Crisis Management, 13*(3), 116–128. https://doi.org/10.1111/j.1468-5973.2005.00466.x

DiBella, J., Forrest, N., Burch, S., Rao-Williams, J., Ninomiya, S. M., Hermelingmeier, V., & Chisholm, K. (2023). Exploring the potential of SMEs to build individual, organizational, and community resilience through sustainability-oriented business practices. *Business Strategy and the Environment, 32*(1), 721–735.

ICAO. (2015). *Manual of aircraft accident and incident investigation: Part I—Organization and planning* (2nd ed.).

ICAO policy on assistance to aircraft accident victims and their families, Doc 9998 (2013).

Itoh, E., Haba, T., & Suzuki, H. (2026). Geoeconomics in air transport: A network-based interpretation of global air transport systems. *Aerospace, 13*(2), 162.

Kenton County. (2023). *Kenton County family assistance center plan*. https://www.kentoncounty.org/DocumentCenter/View/2812/Family-Assistance-Center-Plan-PDF?bidId=

Lukaszewski, J. E. (2015). *Lukaszewski on crisis communication: What your CEO needs to know about reputation risk and crisis management*. *Studia Medioznawcze, 3*, 151–154. https://doi.org/10.33077/uw.24511617.ms.2015.62.536

Mbanefo, O. D., Madubueze, M. H. C., Anekwe, J. K., Nwadiogbu, N. M., & Egberi, A. E. (2026). Public policy responses to microbial infections and their implications for socio-economic development in Nigerian communities. *International Journal of Interdisciplinary Science and Innovation, 5*(1), 120–131.

National Transportation Safety Board. (2020). *National Transportation Safety Board aviation investigation manual: Regional investigation*.

National Transportation Safety Board. (2023). *Federal family assistance framework for aviation disasters*. https://uscode.house.gov

Pearson, C. M. (1998). Reframing crisis management. *Academy of Management Review, 23*(1), 59–76. https://doi.org/10.5465/amr.1998.192960

Pool, R., & Coppola, D. P. (1991). The management of disasters. In *Introduction to international disaster management* (Vol. 251). https://doi.org/10.1126/science.251.4993.499-a

Samunderu, E. (2024). The scope of the global aviation industry. In *The economic effects of*

air transport market liberalisation: A perspective analysis of the Single African Air Transport Market (SAATM) (pp. 1–116). Springer.

SKYbrary. (2024). *Family assistance*. SKYbrary. https://skybrary.aero/articles/family-assistance

Son, B.-G., Roscoe, S., & Sodhi, M. S. (2025). Dynamic capabilities of global and local humanitarian organizations with emergency response and long-term development missions. *International Journal of Operations & Production Management, 45*(1), 1–32.

Teahen, P. R. (2012). Mass fatalities managing the community. In *Intelligence power in peace and war*. https://doi.org/10.1017/CBO9780511521737.020

Tierney, K. J., Lindell, M. K., & Perry, R. W. (2001). *Facing the unexpected: Disaster preparedness and response in the United States* (1st ed.). Joseph Henry Press.

Tiftik, C., & Yakupoğlu, E. (2023). The importance of aviation safety in terms of human resources management in air cargo transportation. *Uluslararası Sosyal Bilimler ve Eğitim Dergisi, 5*(8), 125–146.

Undang-Undang Republik Indonesia Nomor 24 Tahun 2007 tentang Penanggulangan Bencana. (2007).

Xu, X., Liu, J., Jiang, J., Lin, B., & Li, L. (2025). Spatial evolution of international air cargo network connectivity in China: 1996–2019. *Scientific Reports, 15*(1), 25330.