

Indonesian air medical evacuation: Analyzing readiness and proposing an integrated standard procedure

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Abstract

Indonesia still faces challenges in providing healthcare services, and it is crucial to develop an air medical evacuation services system for at least two reasons. Firstly, Indonesia is an archipelagic country and a popular tourist destination. Secondly, there are still significant disparities in the number and types of healthcare facilities and health workers nationwide. To respond to the current situation, the healthcare providers and government have made some efforts regarding air medical evacuation but are showing an unintegrated system. This qualitative study aimed to explore the current implementation of air medical evacuation in Indonesia and to propose an integrated standard procedure that all related stakeholders can adopt at the national and regional levels. The study used a multi-case design analysis, collecting both primary and secondary data. Secondary data was gathered through desk studies to learn related policies and previous studies. Primary data was collected through observation and in-depth interviews with relevant stakeholders, including regulators, service providers, practitioners, and non-governmental organizations. The study found that there is currently a regulatory gap for the implementation of air medical evacuation services in Indonesia. The readiness of the Health Human Resources (HHR) is limited in terms of qualification and competency, and the definitive infrastructure of air medical evacuation requires improvement since the providers continue to use the airport for civil transportation. Besides, the interaction pattern between stakeholders needs to be integrated into standardized procedures. Therefore, the study recommends proposing an integrated standard procedure and actionable recommendations to advocate for all stakeholders.

Keywords

Medical evacuation by air, medical evacuation procedure framework, integrated policy, aviation specialist doctor, infrastructure readiness, penta-helix stakeholder

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Introduction

Indonesia still faces challenges in providing healthcare services to all its citizens. The country is home to numerous remote areas, with a significant number of these regions falling under the category of remote areas on the island border.^{1,2} These remote areas often suffer from a lack of healthcare facilities and infrastructure, exacerbating the existing disparities in healthcare access. Although the Ministry of Health has aimed to provide medical devices for the treatment of four catastrophic diseases (heart, stroke, kidney, and cancer), the need demand for patient referral assistance outside the region remains high.³ This is because the readiness of medical devices is not the

only challenge being faced, but also the disparity in the number and type of health workers as implementers of the action. Therefore, health services between regions and

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even between countries through medical evacuation are essential for discussion. Meanwhile, based on literature and regulatory references, this study defines medical evacuation by air as the activity of bringing patients to get more advanced health services. The ongoing Corona Virus Disease of 2019 (COVID-19) pandemic has further highlighted the need for medical evacuation, particularly in island nations, during pandemics.⁴ Despite the progress made, Indonesia still faces significant challenges with respect to the quantity and distribution of its health workers, particularly when it comes to their level of expertise.⁵

In this study context, air medical evacuation policies and their implementation are crucial in addressing the healthcare needs of remote and underserved areas in Indonesia. Medical evacuation is an alternative solution and opportunity to both widen healthcare benefits and improve health status.⁶ However, implementing of air medical evacuation is a complex process involving various stakeholders and is influenced by various factors. In order to effectively implement and manage medical evacuation in Indonesia, a comprehensive understanding of the aviation health security policies and their implementation is necessary.

Medical tourism, which refers to patients traveling to other countries for medical treatment, has a significant impact on healthcare delivery and reshaping the design and organization of hospitals. As a result, there is a growing need for safe and efficient transportation options for these patients, particularly in air medical evacuation. To address this, various policies and regulations have been put in place by organizations such as the World Health Organization (WHO) and the Ministry of Transportation of Indonesia to govern the referral of patients for medical treatment and ensure their safe and efficient transportation. The International Health Regulation 2005⁷ and international policies by institutions such as the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA) are examples of these regulations that aim to promote medical tourism while ensuring safety and sustainability.

There is growing body of literature on medical travel that addresses various aspects of the phenomenon, including its economic and health resource implications, demand and supply, the role of the state, and the pros and cons of promoting it.⁸ However, there is a gap in the literature regarding medical travel, specifically in the lack of an unintegrated regulation,^{9,10} and its implementation especially in the context of medical escort in Indonesia. To create an efficient air medical evacuation system, a central administration should establish a national policy involving all the related institutions, including the Ministry of Transportation, the Ministry of Health, the Association of Medical Colleges, professional organizations in aviation medicine and related paramedical professions, the Ministry of Tourism, hospital associations, and other institutions associated with medical evacuation services. To stimulate

and support the Indonesian government in organizing a structured air medical evacuation system. To address the aims, some necessary steps should be taken, such as investigating the legal basis of medical evacuation practices (if any) across government ministries and boards and exploring their implementation within the community. This paper aims to develop a medical evacuation procedure framework considering real-world practices in hospitals and communities, as well as account local regulations, the severity of diagnosis, pre-and in-flight, procedures, and financing availability from both the provider and patient perspective.^{6,8,11}

Methodology

Study design

We conducted a qualitative study on Indonesia's phenomenon approach to medical air evacuation. This method can provide an opportunity to discover the origin of a phenomenon, explore possible reasons for its occurrence, and determine whether the experience creates a theoretical framework or conceptual understanding related to the phenomenon.¹² The study results make it possible to build a general and comprehensive picture of the subject under investigation.

Study framework

This study begins with the collection of input data in the form of a review of (1) formal regulations or procedures used as a reference in the implementation of air medical evacuation in Indonesia; (2) readiness of supporting infrastructure (facilities and infrastructure); (3) number, type, and qualifications of Health Human Resources (HHR); and (4) the pattern of interaction of the stakeholder groups involved. Data collection continued with interviews with stakeholders' informants. The information acquired by interviews was verified through our previous review. Once we obtained a clear picture of the current practices related to air medical evacuation in Indonesia, we represented it in a flowchart, which the study informants reviewed for confirmation. Finally, we identified system weaknesses and provided recommendations for improvement. To ensure the validity of the results, we employed data triangulation by cross-referencing interview information with a review of the topic and by sharing the constructed procedural framework with the informant.^{13,14} The study framework, with ethical clearance from the Research and Community Engagement Ethical Committee of the Faculty of Public Health at Universitas Indonesia (Reference Number: Ket-555/UN2.F10.D11/PPM.00.02/2022), is depicted in Figure 1.

Informants' selection. The informants were selected purposefully by applying the Snowball Sampling Method

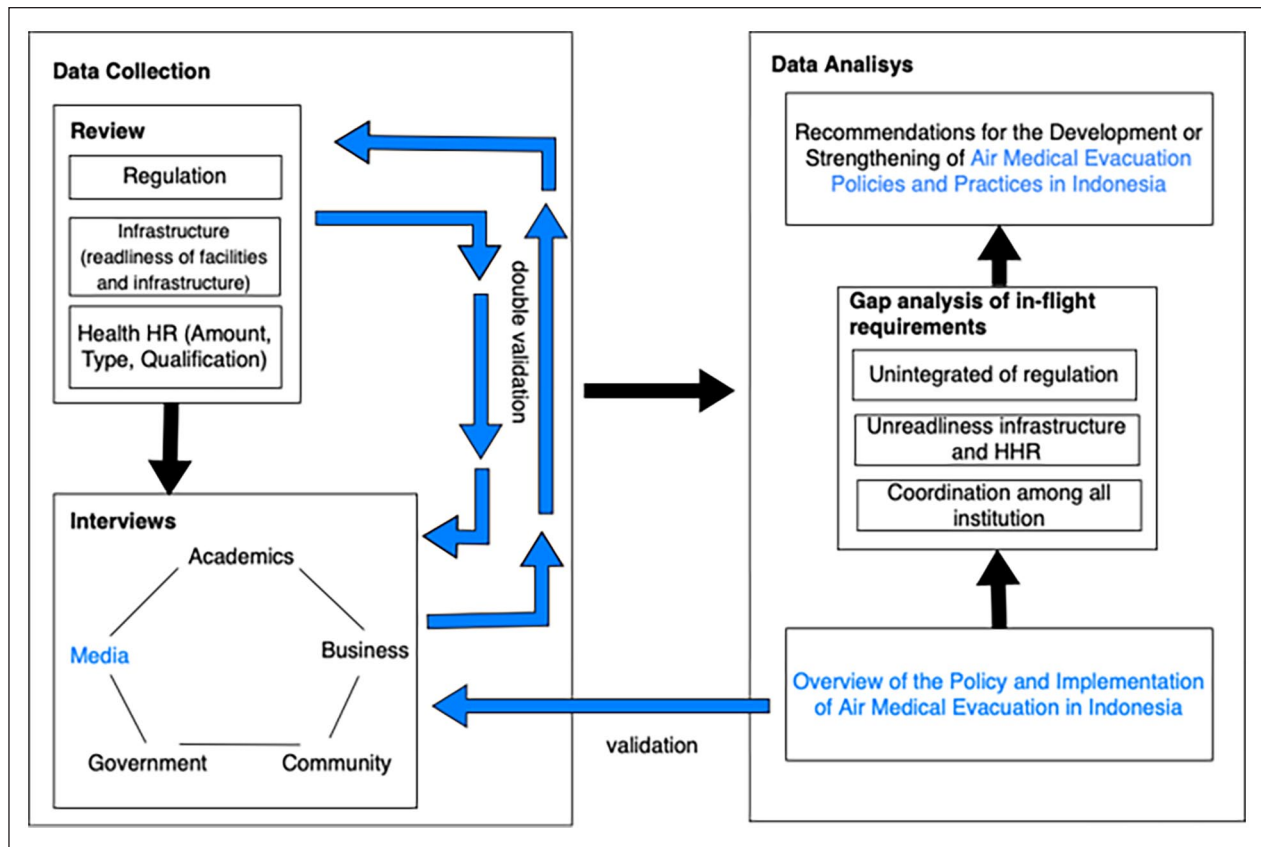


Figure 1. Study framework.

(SSM) so that the collected data could produce complete and relevant information. The SSM is one of the most widely used methods for collecting information on populations that are difficult to reach and in low-information contexts.¹⁵ Besides, using SSM is significant in qualitative research because sampling should continue until theoretical saturation is achieved¹⁶ (Table 1).

Data collection

Data was collected by reviewing current policy documents, observing the hospital, which provides medical evacuation by air transportation, and interviewing stakeholders after obtaining informed consent. About the interviews, as a first step, the researchers conducted unstructured interviews with key informants to get an overview of the implementation of medical evacuation in Indonesia. It includes whether existing regulations from the Indonesian government specifically contain medical evacuation and stakeholders involved in the medical evacuation process from the origin hospital to the destination hospital. Then, the researchers conducted the questionnaires based on the study frameworks, adapted to the informant's institution of origin role, and the primary question of this study was, "How is the air medical evacuation implemented in

Indonesia." To answer this big question, we also questioned; what are the related policies? What are the needed resources? What are the challenges stakeholders in the field faces in implementing air medical evacuation? Prior to the interview setting, the proposal, ethical clearance, and outline questionnaires were sent to the potential informants. The researcher asked the participants whether they would be interviewed and whether they preferred to be interviewed online or offline. Once the interview is agreed upon, at least two to three authors are involved. The interview lasted from 45 min to 1.5 h. Variations in the duration and depth of the interviews were also due to the enthusiasm of the informants in responding to questions or giving clues that enriched the answers.

The review of existing regulations related to air medical evacuation in Indonesia was done by gathering some regulations with keywords connected with medical evacuation, air ambulance, and case handling during COVID-19 in the form of sub-national level policies from various ministries and other government institutions. Besides that, we also look at the International Health Regulation (IHR) as the source of some policies related to medical evacuation in Indonesia.

The implementation of the services, patterns of interaction, and types of coordination have been formed between

Table 1. Informants in the study.

No.	Position	Informant category	Affiliation	Code
1	Academician and Practitioner (API)	Key Informant	Working both at Faculty of Medicine, Universitas Al-Azhar and Harapan Keluarga Hospital, Lombok	Ah1
2	Government and Academician (GAI)	Key Informant	Director General of Civil Aviation, Ministry of Transportation; and Team Teaching in Faculty of Medicine, Universitas Al-Azhar	GAI
3	Government, as regulator (GRI)	Informant	Port Health Office or KKP, Mataram	GRI
4	Government, as provider (hospital) (GPI)	Informant	Regional Hospital of Kota Lombok, NTB	GPI
5	Government, as provider (hospital)	Informant	Province Hospital of NTB	GHI
6	Business, as provider (hospital)	Informant	Marketing Manager, Harapan Keluarga Hospital, Lombok	Bh1
7	Business, as a provider, the informant is an aviation doctor (Medical Evacuation company)	Informant	Anonym Company 1	Bc1
8	Business, as a provider, the informant is a nurse (Medical Evacuation company)	Informant	Anonym Company 2	Bc2
9	Community, a community-based foundation	Informant	Endri Foundation	C1
10	Community	Informant	Pilot, from a non-government company	C2
11	Community	Informant	The patient's family utilizes a medical evacuation service	C3

stakeholders, such as (1) the Ministry of Transportation; (2) the Ministry of Health, in this term Port Health Office (PHO); (3) sub-national government: province and district hospital; (4) private institution: private hospital and medical evacuation companies (5) airlines, both state-owned enterprises and private companies; (6) insurance companies; and (7) non-governmental organizations (NGOs).

An overview of the extent of infrastructure readiness in facilities, medical equipment, and consumables was obtained through observation in provincial hospitals and the port health office and in-depth interviews with informants representing elements of hospitals, port health officers, and the representative of the Medical Evacuation company. The description of the condition of the health-care system and HHR is very closely related to the situation in the hospital as the critical service provider. Therefore, this description of human resources for health was obtained from informants representing the regional general hospital and private hospitals.

Data analysis

Based on the analysis and findings on input as well as process aspects, researchers explored the existing implementation of medical evacuation via air transportation in Indonesia and developed a formal framework or procedure and development recommendations.

After collecting data in the first stage (December 2022), we developed formal medical evacuation procedures, especially during the stages before and during the flight.

This procedure was then conveyed to our key informant to get confirmation that the procedure was by what was going on in the field. We also present the draft procedure at the same time as the second phase of interviews with medical evacuation and business representatives. This is done to triangulate data sources and to triangulate among researchers on all the data collected. This triangulation allows researchers to test the validity of qualitative data so that the resulting information is relevant to the actual situation.

Result

There is a growing body of literature on medical travel that addresses various aspects of the phenomenon, including its economic and health resource implications, demand and supply, the role of the state, and the pros and cons of promoting it.⁸ However, there is a gap in the literature regarding medical travel, specifically the lack of an integrated regulation^{9,10} and its implementation, especially in the context of medical escort services in Indonesia.

This study has a primary objective namely, to explore the existing implementation of medical evacuation via air transportation in Indonesia and, of course, to develop a formal framework or procedure that can be adopted by relevant institutions, both at the national and regional levels. The exploration process begins by looking at resource readiness aspects, including regulatory variables, infrastructure, Health Human Resources (HRH), and the interaction patterns of the penta-helix groups involved

(academicians, business/companies, community members, government officials, and the media).

Analysis of existing regulation: Medical evacuation in Indonesia is lacked regulation

Data collection regarding regulations was found from both document review and in-depth interviews.

Regulation documents overview

Thus, this study includes a review of each regulation that is considered relevant in the context of medical evacuation, as follows:

- 1) Decree of the Minister of Health No. 882/Menkes/SK/X/2009 Concerning Guidelines for Handling Medical Evacuation.¹⁷

It contains guidelines for medical evacuation, which is a series of incidents involving moving victims from one place to another with more adequate facilities and human resources according to the needs of the victims. The medical evacuation in this regulation emphasizes the handling of medical evacuation for someone who is in an emergency, both in regular situations and during a disaster.

- 2) Regulation of the Minister of Defense of the Republic of Indonesia Number 34 of 2014 concerning Medical Evacuation in Disaster Management within the Ministry of Defense and the Indonesian National Armed Forces.¹⁸

It stated that air medical evacuation includes evacuation activities by any air transportation with supporting personnel qualified as flight doctors, air nurses, and air nurse assistants. This regulation contains the stages of implementing medical evacuation in disaster management, including planning, implementation, and termination. It was also explained that medical evacuation was carried out by units of the Indonesian National Armed Forces for each force to ensure safe, fast, and efficient medical services.

- 3) Regulation of the Minister of Health No. 19/2016 concerning the Integrated Emergency Management System.¹⁹

It contains the purpose, implementation, Integrated Emergency Management System (SPGDT), and role of the Public Safety Center (PSC) in the District/City Health Service, hospitals, and other locations determined by the Regency/City Regional Government. SPGDT aims to improve access and quality of emergency services, speed up the handling time for emergency victims and patients, and reduce mortality and disability rates. The PSC performs functions in its implementation,

one of which is to evacuate victims and patients in an emergency.

- 4) Regulation of the Head of the National Disaster Management Agency No. 13/2010 concerning Guidelines for Search, Rescue, and Evacuation.²⁰ This guideline is intended to guide victims' search, rescue, and evacuation in a coordinated, effective, and efficient manner to increase the mobilization of resources in the search, assistance, and evacuation of disaster victims. It establishes a specialized team of officers (from the National Disaster Management Agency and Regional Disaster Management Agency, the National Search and Relief Agency and Search and Rescue Office (SAR), the Technical Department, the Indonesian National Armed Forces, and the Indonesian National Police). This team is responsible for conducting searches assisting and evacuating disaster victims.

Indonesia also follows the international agreements in the IHR 2005, which, among other things, contain: a) all infectious diseases are not allowed to enter the plane, except for air ambulances). In addition, the patient must also be transportable: not in an infusion and stable. If the patient is in a severe condition, it is recommended that an air ambulance be used. Hence, Indonesia has many reasons to have a specific regulation regarding medical evacuation.

Policy implementation overview. All informants conveyed that the implementation of medical evacuation services by air had been formed between stakeholders based on the policies or authorities of each party with no central regulation that formally regulates the mechanism and ensures the integration of authority and responsibility among stakeholders involved in the service delivery cooperation relationship. Furthermore, businesspeople who act as third parties (agents), follow the Regulation of the Minister of Health of the Republic of Indonesia Number 14 of 2021 and the ISO 9001, which includes service quality indicators.

Furthermore, the informant also stated that for business people who act as third parties (agents), the basic regulation they use in organizing air medical evacuation services is only Regulation of the Minister of Health of the Republic of Indonesia Number 14 of 2021 concerning Standards for Business Activities and Products in the Implementation of Licensing Health Sector Risk-Based Business. The other basis used is ISO 9001, which includes service quality indicators. The same was conveyed by other informants representing hospitals and the Port Health Office: the challenge of a regulatory vacuum is still felt in providing air-borne medical evacuation services in Indonesia.



Figure 2. Preparations for moving a patient using air medical evacuation.

Infrastructure

Based on interviews, we discovered that the existing infrastructure of a hospital that provides medical evacuation services is sufficient to support the service. However, the air medical evacuation remains dependent on the readiness of air transportation and the related institution: airports, port health offices, and sometimes excise tax institution. Regarding Bc1, this involvement (with the excise tax institution) is caused by the inspection of the drugs and other medical materials that the personnel bring while assisting the patient (medical evacuation). What remains a challenge for both hospitals and medical evacuation companies is obtaining regulatory support (both at the national and regional levels) to strengthen hospital and medical evacuation business processes with external parties, from pre-service (airline provision) to post-service (financing).

However, in the context of efforts to develop services nationally, informants stated that the uneven development of infrastructure for medical evacuation services by air throughout Indonesia is a challenge that must be considered. Considering that Indonesia is an archipelagic country with high inter-regional health disparities, the readiness of aviation infrastructure and referral hospital infrastructure in each region must be prepared to guarantee the public's need for medical evacuation services by air. An overview of the current situation of infrastructure can be seen in Figures 2 to 5 below:

Health Human Resources (HHR)

The description of the condition of the health care system and human resources for medical evacuation services by air is very closely related to the situation in the hospital as the critical service provider. The description of human resources for health in medical evacuation team by air transportation was obtained from informants representing the regional general hospital and private hospitals.



Figure 3. Specific handy carry oxygen cylinders are needed for patients flown by air ambulance.



Figure 4. Standard health facilities and equipment for patient transfer from the hospital for air medical evacuation flights.

Both the regional general hospitals and the private hospitals that were sampled already have aviation health specialists who can lead coordination in the implementation of medical evacuation services by air. The delivery and development of services in private hospitals tend to be better prepared. This is because, apart from having aviation health specialists, private hospitals also have managerial staff specifically assigned to ensure the smooth running of service business processes that require cross-sectoral coordination. Meanwhile at the Regional General Hospital, managerial

personnel are not yet available, so service development cannot be optimized.

Looking at the flow of the practice mechanism for air health evacuation that has been carried out at the sample locations, it can be mapped that to ensure the mechanism



Figure 5. Standard ‘Tools kit’ medical equipment and medicines carried by medical personnel and health workers accompanying patients in air medical evacuation.

runs well, the human resources needed consist of at least a medical team and an administrative team. Included in the medical team are doctors in charge of service (general practitioners or specialist doctors, based on needs), aviation specialist doctors, and nurses. The medical team is tasked with ensuring services for medical evacuation patients both in the pre-, during, and post-cycles. On the other hand, an administrative team is also needed whose task is to carry out technical coordination involving institutions outside the hospital, such as the airport health office and so on. In more detail, the need for human resources in the flow of medical evacuation service mechanisms in Indonesia which is the recommendation of this study is shown in Figure 6:

Stakeholder’s views on medical evacuation

Regarding how policies in Indonesia regulate medical evacuation and its practice, it is currently a concern for informants in this study who represent academics, government, business, community, and media. An in-depth analysis of the role of medical evacuation practice, the suitability of existing policies, the problem of implementation of medical evacuation, and the urgency of improving medical evacuation policy standards are the points that are explored further. Increasing awareness about the importance of strengthening medical evacuation services by air, Coordinating ministries/ government organizations to make an integrated policy/ regulation, and Philanthropic Community are stakeholders’ points of view as in Table 2. Significant statements from all the stakeholders regarding more specific aspects of human resources, readiness education, and infrastructure that support related statements can be referred to in Table A1.

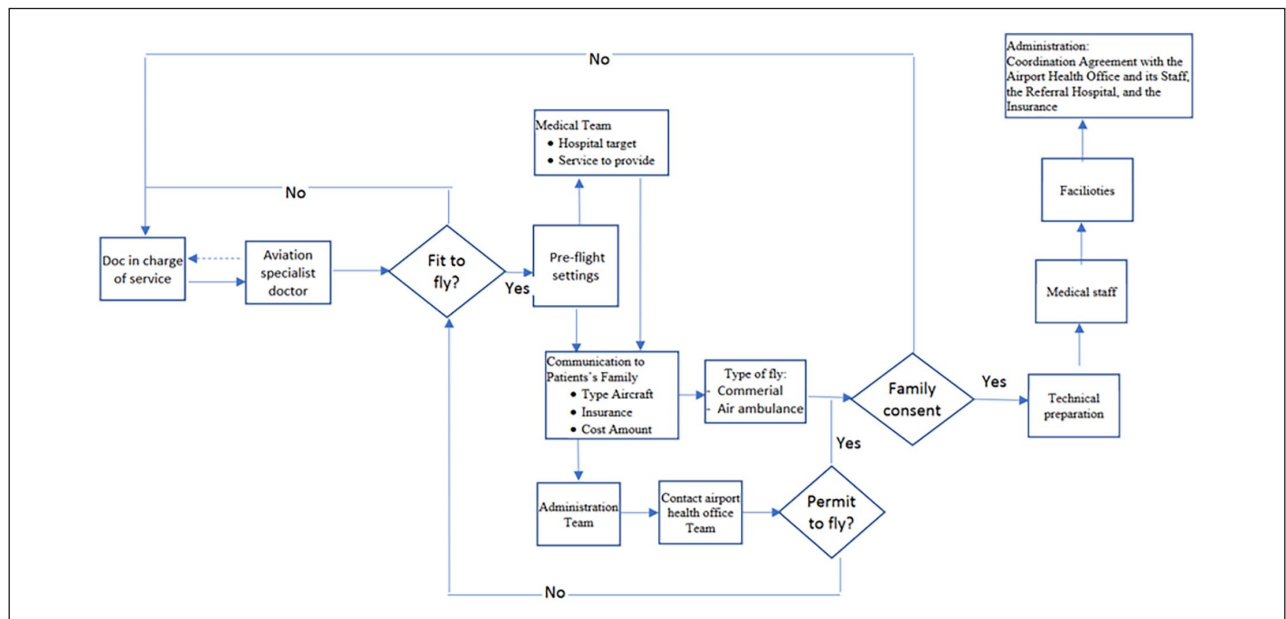


Figure 6. Formal procedure of medical evacuation in Indonesia.

Formal procedure of medical evacuation

Table 2. Stakeholder's views on medical evacuation policy and practice in Indonesia.

Issue	Academics	Government	Business	Community	Media (from other stakeholders)
Role in Medical Evacuation Practice	Increasing awareness about the importance of strengthening medical evacuation services by air in an archipelagic country like Indonesia through studies as well as scientific forums and publications	<p>a) Coordinating ministries/ government organization to make an integrated policy/ regulation.</p> <p>b) Regarding the medical evacuation ordered by foreigner or citizen who live in other country, the government is expected to conduct a diplomacy effort with other countries, so it does not face significant trouble.</p>	Very few hospitals, including government hospitals, have medical evacuation services via air transportation. The existence of this service provider company really supports the practicality of medical evacuation.	The Philanthropic Community usually helps collect funds from the public, through social media, so that they can send patients who are very underprivileged and need medical treatment which can only be done in Jakarta. However, because neither the escort nor the procedures applied were included in the medical evacuation category.	Media plays the significant role in quickly publicizing the situation and condition of patients who need financial assistance for medical purposes outside the patient's area of residence
Existed Policy	The existed regulation only adopted from International Health Regulation (IHR)	Government from Transportation Department: The regulation regarding medical evacuation is referring the IHR. However, from the Ministry of Transportation, the related regulations are tending to the ones which protecting pilot, co-pilot, and the crew in pre-during-post flight. The failure of healthcare related to medical evacuation could be prevented by clear regulation. Medical evacuation by air transportation involves several ministries/institutions, as well as subordinate institutions. It would be better if there was a coordinating body so that medical evacuation services could be enjoyed by poor people in the outermost, remote areas and farthest from adequate health service center.	Republic of Indonesia Minister of Health Regulation number 14 of 2021 concerning standards for business activities and products in the implementation of risk-based business licensing in the health sector	They cannot mention specific regulation. What they know is that the BPJS patients should spend their money to access healthcare in outside the island (of NTB Province)	Not available
The urgency of improving the policy	Improvements in regulations that are needed include: integration of regulations between institutions and regulations that support the role of health workers with aviation specializations in the field	The failure of healthcare related to medical evacuation could be prevented by clear regulation. Medical evacuation by air transportation involves several ministries/institutions, as well as subordinate institutions. It would be better if there was a coordinating body so that medical evacuation services could be enjoyed by poor people in the outermost, remote areas and farthest from adequate health service center.	<p>a. To ensure the qualifications and quality of health workers included in the medical evacuation team.</p> <p>b. to regulate the provision of minimum seats and oxygen cylinders for medical emergencies by airlines</p> <p>c. to regulate the provision of hospital beds for evacuation patients with medical emergencies,</p> <p>d. to decrease the challenge regarding the amount of service fees that causing a segmented market amidst high service needs, especially for fuel subsidies and setting ground handling prices</p> <p>e. Related to issue in point (d), regulations that support the insurance for medical evacuation services between countries is also important to regulate to resolve problems in hospitals/corporations that provide these services.</p>	It is very fundamental to provide a policy that ensure the poor people, especially on small islands, receive services related to medical evacuation – by air transportation- so that they can access necessary health services that are not available at local hospitals.	From Government's perspective, Mass Media only published the accidents. In fact, accidents can be prevented by increasing awareness of airline crew, from those in the tower (airport), crew on board the plane, to those in the hangar. Mass Media should take a part in the awareness publication.

Table 3. Identification the existing situation, readiness and recommendation for five stakeholders in supporting medical evacuation in Indonesia.

Stakeholders	Existing Situation	Readiness	Recommendation	Prospective follow up actions
1 Academist	<ul style="list-style-type: none"> Providing expert in air medication. Increasing awareness about the importance of strengthening air medical evacuation services by air in an archipelagic country like Indonesia through studies as well as scientific forums and publications. Formulating evidence-based policy recommendations and empirical findings to the government. 	+/+ + +	<p>In addition to contributing scientifically, academics with aviation medicine backgrounds are also expected to build a formal procedure or policy framework that bridges the interests of other stakeholders.</p>	<ol style="list-style-type: none"> Several medical study programs that have specific/competence related to medical evacuation: review curriculum, submit review results to collegiums or aviation medical specialist associations, analyze to strengthen evidence-based policy revisions, for example, for the Ministry of Transportation (crews, etc.), Ministry of Health (requirements for health workers who may be involved in medical evacuation), etc. As part of academics, we will continue/follow up the Flow-chart of Medical Evacuation and research advocacy- for the policy development process <ul style="list-style-type: none"> Submit a proposal to the government to adjust ground handling rates and other high nominal fees during the medical evacuation process, as well as clarity and ease of licensing for carrying/delivering patients from one hospital to another, both at home and abroad.
2 Business	<ul style="list-style-type: none"> Providing a formal traveling procedure for the sick passengers. Providing essential or first-aid and semi-advanced medical assistance for emergency conditions during flight. There is limited availability of stretcher services among airlines, with only Lion Air providing such a service. Availability of medical teams on flights is dependent on the schedule, which may not always align with the needs of patients requiring medical evacuation. 	+/+ + +	<ul style="list-style-type: none"> Strengthening the coordination of third parties (agents) and hospitals to stabilize the patient's clinical condition is urgently needed. The presence of regulations is urgently needed to: (1) regulate the provision of minimum seats and oxygen cylinders for medical emergencies by airlines; and (2) be able to regulate the provision of hospital beds for evacuation patients with medical emergencies. The presence of regulations that support financing aspects, both at the national level and in regional policies (setting ground handling prices), is urgently needed. 	<ul style="list-style-type: none"> Increase the role/raise public awareness or education by involving traditional leaders/members, local government (RT/RW/Banjar heads, etc.) Establish formal cooperation with the usual hospital of origin Building cooperation with other NGOs Inviting several stakeholders: academics, local government, practitioners (hospitals, medical evacuation agents/providers), and hearing suggestions that can become the basis for making policies related to medical evacuation The Coordinating Ministry has invited some other ministries related to medical evacuation/medical tourism: the ministry of health, the ministry of transportation, the ministry of tourism,
3 Community	Community empowerment (NGO) takes a roll in accompanying patients who need to be referred to the national central hospital.	+/+ + +	Replication was carried out on the social and community assistance management system, especially for medical evacuation services from non-governmental organizations with a good reputation.	<ul style="list-style-type: none"> Increase the role/raise public awareness or education by involving traditional leaders/members, local government (RT/RW/Banjar heads, etc.) Establish formal cooperation with the usual hospital of origin Building cooperation with other NGOs Inviting several stakeholders: academics, local government, practitioners (hospitals, medical evacuation agents/providers), and hearing suggestions that can become the basis for making policies related to medical evacuation The Coordinating Ministry has invited some other ministries related to medical evacuation/medical tourism: the ministry of health, the ministry of transportation, the ministry of tourism,
4 Government	Absent in terms of providing special regulations related to medical evacuation, especially by air transportation.	+/+ + +	<ul style="list-style-type: none"> Revitalizing the public transportation sector, which has a positive impact on revitalizing medical evacuation services between regions, Strengthening regulations to integrate roles and patterns of interaction among stakeholders, including those from government elements, as well as the need for strengthening regulations to support financing so that medical evacuation services can be more affordable. 	<ul style="list-style-type: none"> Increase the role/raise public awareness or education by involving traditional leaders/members, local government (RT/RW/Banjar heads, etc.) Establish formal cooperation with the usual hospital of origin Building cooperation with other NGOs Inviting several stakeholders: academics, local government, practitioners (hospitals, medical evacuation agents/providers), and hearing suggestions that can become the basis for making policies related to medical evacuation The Coordinating Ministry has invited some other ministries related to medical evacuation/medical tourism: the ministry of health, the ministry of transportation, the ministry of tourism,
5 Media	Media and social media play a role in quickly publicizing the situation and condition of patients who need financial assistance for medical purposes outside the patient's area of residence.	+/+ + +	Optimizing the role of the media, especially social media to strengthen the information distribution through media.	<ul style="list-style-type: none"> Disseminate information regarding the availability and superiority of medical evacuation services by air. Provide information about medical evacuation service providers with a good reputation. Provide educational content regarding the importance of strengthening medical evacuation services by air, including aspects of regulation, health human resources, and infrastructure. Voicing advocacy to increase government presence in the developing of medical evacuation services in Indonesia doing fundraising or social assistance for people in need.

Currently, evacuation procedures in Indonesia are basically led by an aviation specialist, in this case “Dr. D.” Through its network of airlines and the Health Port Office, the evacuation process was carried out. However, medical evacuation cannot be carried out in other areas or hospitals if there is no aviation specialist doctor or the network. In that case, the role of the five stakeholders becomes important and significant to be integrated. Here Table 3 presented the roles of each stakeholder:

Every representative stakeholder, including API, G1, P1, P2, C1, and C2, has confirmed the figure of the medical evacuation procedure above. It shows how the medical escort/ evacuation always starts from hospital, then it involves aviation health, aircraft company, government and of course the family of patients. We would describe it in a few steps as follow:

1. Each process shown in the flowchart also considers that requests for medical evacuation services by air can come from direct patient submissions to third parties (agents) as second opinions or recommendations from the doctor in charge at the hospital. Patients will still be directed by the doctor in charge at the hospital to go through the medical examination process.
2. The doctor in charge recommends that the patient to be referred to another hospital with more up-to-date sub-specialty facilities and capabilities. The doctor then carries out further coordination and consultation regarding these recommendations with the aviation specialist doctor at the hospital.
3. After obtaining information about recommendations for referral actions for patients, the Aviation Specialist Doctor then returns to check the patient’s clinical condition and begins to assess the risks and benefits of carrying out medical evacuation by air for patient treatment.
4. When the results of the coordination between the doctor in charge and the aviation specialist doctor related to examining the patient’s clinical condition and assessing the risks and benefits reinforce the need for medical evacuation services by air, the aviation specialist doctor then approves “Fit to Fly” to carry out medical evacuation by air for the patient. If the results of the patient’s clinical check state that the patient is still in a condition that makes flying unsafe or even unstable, then the Aviation Specialist Doctor will provide stabilization measures until the patient is declared “Fit to Fly” and the medical evacuation action plan can be processed.
5. When the “fit to fly” approval has been issued, the next step is communication for follow-up by the Medical Evacuation Team, which consists of the medical and administrative team. The medical team, under the command of the Aviation Specialist Doctor, carries out a follow-up, namely determining the target hospital that will be the referral destination and the scope of health services or procedures that the patient will receive. Meanwhile, the administrative team will communicate with (1) the patient and family; and (2) the Ministry of Marine Affairs and Fisheries, which in this case is the Airport Health Office. The administration team communicates with patients and families to provide information regarding the types of airlines that can be used (commercial and private jets/air ambulances) as well as the estimated costs needed, which must be paid by the patient or the patient’s insurance, if any. The communication made by the administration team with the Ministry of Marine Affairs and Fisheries, which in this case is the Airport Health Office, includes the submission of a “Permit to Fly and Permit to Transport” based on the “Fit to Fly” approval document from the Aviation Specialist Doctor.
6. When the communication has been made, the patient and family are welcome to decide on the type of flight to be used, namely, whether a commercial flight, a charter flight, or what is known as an “air ambulance.”
7. Based on the patient’s and family’s decision on the type of flight to be used, the hospital and/or third parties (agents) then provide documents for final confirmation of the agreement regarding the technical air medical evacuation to be carried out (destination hospital, scope of service, type of flight, types of costs, and technical implementation).
 - a. Armed with this final confirmation, technical preparations were made, which included:
 - b. Formation of a team to be assigned to oversee the medical evacuation of patients: determining the number and type of medical personnel based on need. If the service provider is those acting as providers are third parties (agents), then in addition to considering the needs, determining the number and type of medical personnel is also based on company standards.
 - c. preparation of aircraft facilities, oxygen cylinders, and other medical equipment.
 - d. Coordination with the airport health office and its staff, the destination hospital, and insurance (related to pick-up and service).

In the context of medical evacuation by air as part of health services, regulations bind every party involved in delivering of medical evacuation services by air in Indonesia. Therefore, an overview of regulatory conditions was obtained from all study informants, both those representing ministries, agencies, institutions, or companies, and informants representing the public. Regarding the analysis of readiness, the findings from stakeholders’ information, and medical evacuation procedure in Figure 3.,

Table 4. Challenges to regulatory needs for the implementation of medical evacuation services in Indonesia.

No.	Regulation needed	Related Ministry/Agency
1	Financial support policies include international travel insurance, medical deposits for foreign tourists, and guarantees from embassies regarding the financing of medical evacuation services by patients who are foreign nationals and/or who have their insurance.	Ministry of Foreign Affairs, Ministry of Tourism
2	Referral hospital mapping policy for health emergencies	Ministry of Health
3	National guidelines for the provision of medical escort services Hospital need this guide to develop standard operating procedures for their services.	Ministry of Health
4	An integrative policy to bridge the work scope of the Ministry of Transportation, which regulates airline management, and the work scope of the Ministry of Health, mainly with the Port Health Office, and Airport officer in ensuring the implementation of air medical evacuation started from the origin airport until the destination.	Ministry of Health and Ministry of Transportation
5	Local policy: review of ground handling prices for medical evacuation services to make them more affordable.	Ministry of Transportation

this study eventually resulted several recommendations regarding the needs of integrated regulation to be developed and support medical evacuation practices in Indonesia that can be seen in this Table 4.

Discussion

Regulation

As findings from document reviews and in-depth interviews with various stakeholders show, the existing regulations, specifically regarding medical evacuation by air transportation, still need to be improved. On the other hand, the regulation of medical evacuation, which is not in the context of emergencies and disasters and needs to be integrated in stakeholder coordination, needs to be revised.

Analyzing existing regulations and empirical practice regarding the need for specific regulations is essential. Besides the integration among stakeholders, an effective policy should be considered empirical evidence. In line with the importance of academicians in providing information and policy regarding the management of COVID-19,²¹ the academic element plays a vital role in formulating evidence-based policy recommendations and empirical findings for the government.

National regulations impacting medical evacuation services most are the Decree of the Minister of Health No. 882/Menkes/SK/X/2009 and Regulation of the Minister of Health No. 14/2021. However, the former focuses more on disaster first aid and the latter focuses on the standards of health service business activities in the medical evacuation field. Therefore, no regulation definitively governs the formal procedures for administering medical evacuation services in Indonesia and integrating stakeholder interactions.

Establishing regulations that integrate the roles, functions, responsibilities, and authorities of each stakeholder involved in public services is crucial, as emphasized by experts. . . This necessitates collaboration across various ministries, government agencies, and health service

providers. community participation is also essential to address health challenges and threats effectively.^{22,23}

Additionally, the development of medical evacuation services by air is heavily influenced by the strength of transportation sector regulations in the country. Strong regulations positively impact public perception of the safety and quality of public transportation, including medical evacuation services.¹⁰ Robust governing regulations are integral to well-organized business processes that deliver high-quality services to the public.

Implementation

The lack of specific and integrated regulations in Indonesia significantly impacts the implementation of medical evacuation. The absence of regulation raises several issue including resources and infrastructure availability, bureaucratic challenges in medical evacuation practice, and most importantly the fulfilment of people's right to health services.

Medical evacuation is necessary in Indonesia; however, only a few government hospitals can provide it. Additionally, there is a need for more aviation doctors, with only one university in the country producing such specialists. As concluded by Al Siyabi et al.²² and McCartney et al.²³ enhancing community participation is essential for building partnerships to address various health challenges and threats, including those related to medical evacuation. Establishing of sole-ownership company providing air medical evacuation should also be considered.

According to information from AP1, medical evacuation at the hospital where they work involves a flight doctor (AP1). However, based on information from B2, patients who use medevac s services may only sometimes have flight doctors present. Additionally, airport nurses or personnel may be involved in the evacuation process, only sometimes with specialized air medical evacuation training. International agreements exist for standardizing air medical evacuation competencies, with training syllabi available in certain countries like Norway, the United

States, and England, tailored to their national standards, to ensure high quality and secure services.^{24,25,26,27}

During an interview with Business, four key challenges regarding the implementation of the medical evacuation service business were identified: (1) the absence of regulations governing the technical aspects of air medical evacuation services; (2) assessing the clinical feasibility of patients for air travel, (3) ensuring technical preparation of facilities and infrastructure, and (4) addressing financing concerns. The first point includes delays in evacuation due to changes in the patient's condition impacting flight clearance potential solutions, which detailed in Table 2.

The utilization of air medical evacuation depends on the patient's current condition. The Minister of Health decree No.882/2009 outlines various types of air ambulances, including fixed-wing and rotary-wings aircraft (helicopters)¹⁷. Considerations for air transportation evacuations include issues like vibration, noise, and the availability of tools and medicine, especially on regular flights versus special charters. Additionally, helipad facilities are required when using it. This regulation primarily focuses on the medical and technical aspects of handling medical evacuations in everyday emergencies, covering techniques for moving victims, stabilization methods, and transportation in unique conditions. However, it does not address the procedures or workflows for emergency evacuations, especially those involving air transportation and the obligations of air transportation in preparing infrastructure and human resources for evacuation.

This study has highlighted various issues related to resources and practices in medical evacuation in Indonesia, including malpractice and professional ethics violations, which can jeopardize patient health and safety, requiring further research and attention. Medical evacuation is closely linked to the aviation and the transportation sector, emphasizing the need for passengers to be medically fit to fly to prevent in-flight medical emergencies. It involves collaboration among multiple government agencies, including the Ministry of Health, Ministry of Transportation, Ministry of Tourism, healthcare providers, diplomatic communities, and hospitals. Enhancing community participation is crucial in responding to health challenges and threats through effective communication, collaboration, and cooperation. Despite efforts to improve medical evacuation services, there is room for optimization. Addressing service gaps, such as the issuance of Ministry of Health Regulation Number 13 of 2022, is essential to reduce disparities in health services, especially in remote, outermost, and border islands. These areas face a high demand for medical evacuation, which cannot be met due to limited aviation medical specialist doctors and hospitals. However, ongoing efforts by the Ministry of Health aim to provide services for catastrophic diseases, including cardiac, stroke, kidney, and cancer treatments, in

all district and city hospitals in Indonesia, which is expected to improve the situation.

Limitation and potential solution of study

This study has its own set of limitations, which must be acknowledged. First, it delves into the policy and implementation of medical evacuation by air transportation in Indonesia, excluding other modes of transportation such as land or sea. Secondly, the study adopts a qualitative approach, precluding quantitative data analysis. Thirdly, the study employs a purposive sampling method and is limited to critical stakeholders from specific sectors, which may restrict the generalizability of the findings. Lastly, the study was conducted after the COVID-19 pandemic, which may have affected the respondents' medical evacuation experiences and perceptions.

On the other hand, this study has the distinction, of being a pioneer study that explores the topic of implementing medical evacuation and health aviation in Indonesia. In the process, this study explores the perspectives of critical stakeholders comprehensively. Therefore, the results of this study offer potential solutions in the form of a standard process framework that policymakers can follow up as a form of policy development to fill existing regulatory gaps. It is hoped that the application of the standard process framework recommended by this study can become a reference for the formulation of derivative regulations that regulate operational technicalities for coordination between organizing institutions, even in the minor units, such as homes, Port Health Offices (KKP), organizing partners, and so on.

Conclusion

This research discovered the regulatory gap for the implementation of air medical evacuation services in Indonesia. Besides, it obtained large opportunities for strengthening and developing the implementation of medical evacuation services by establishing formal mechanisms/procedures for domestic and international medical evacuation. It considered factors such as the type of disease (infectious or degenerative), the stability of the patient's condition, and ease of transportation. With this procedure as a formal mechanism, each relevant stakeholder can optimize their roles and responsibilities. Therefore, this medical evacuation service can be a strong alternative as a form of central and regional health resilience. There is a need for integrated and higher-level regulations, such as at the national strategic level or in the context of regional or international/bilateral relations, between government agencies, such as the Ministry of Transportation, the Ministry of Health, the Ministry of Industry and Trade, the Ministry of Tourism, regional centers, and embassies.

We also recommend that the Ministry of Tourism and the Ministry of Foreign Relations take measures such as encouraging tourists to have travel insurance or implementing deposit requirements to facilitate funding for medical evacuation. Furthermore, the specific recommendations for reviewing the Ministry of Health Regulation 2009 include the following points: adjustment to dynamic changes, including both pandemic and non-pandemic situations, not just emergency responses to disasters, because the implementation involves multiple agencies and ministries.

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Author contributions

DA conceived the manuscript idea, supervised, and funded the article. DA, RO, AL, AS, SB, and RR contributed to conception and design of the study. All authors performed the literature review, wrote the first draft of the manuscript, contributed to manuscript revision, read, and approved the submitted version.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Declaration of conflicting interests

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Ethics statement

This study was approved by the Research and Community Engagement Ethical Committee Faculty of Public Health Universitas Indonesia (Ethical Approval: Ket-555/UN2.F10.D11/PPM.00.02/2022).

References

1. Presidential Regulation number 63 of 2020 concerning Designation of Disadvantaged Regions for 2020-2024. 2020.

2. Suharniati D, Laksono A and Astuti WD. Review Kebijakan Tentang Pelayanan Kesehatan Puskesmas di Daerah Terpencil Perbatasan (Policy review on health services in primary health center in the border and remote area). *Bul Penelit Sist Kesehat* 2013; 16(2): 109–116.
3. Gas Pol Penuhi Alat Kesehatan di Rumah Sakit – Sehat Negeriku. n.d. <https://sehatnegeriku.kemkes.go.id/baca/rilis-media/20230117/3242224> (accessed 12 May 2023).
4. Bae SH, Shin H, Koo HY, et al. Asymptomatic transmission of SARS-CoV-2 on evacuation flight. *Emerg Infect Dis* 2020; 26(11): 2705–2708.
5. Rokx C, Giles J, Satriawan E, et al. *New insights into the provision of health services in Indonesia*. Washington, DC: World Bank, 2010.
6. Lemay F, Vanderschuren A and Alain J. Aeromedical evacuations during the COVID-19 pandemic: practical considerations for patient transport. *CJEM* 2020; 22(5): 584–586.
7. WHO. *The International Health Regulations* (Third), 2005. DOI: 10.1163/15723747-01602002
8. Whittaker A and Chee HL. Perceptions of an “international hospital” in Thailand by medical travel patients: cross-cultural tensions in a transnational space. *Soc Sci Med* 2015; 124: 290–297.
9. Forsyth P, Guiomard C and Niemeier HM. Covid –19, the collapse in passenger demand and airport charges. *J Air Transp Manag* 2020; 89: 1–5.
10. Helfers A, Reiserer M, Schneider N, et al. Should I stay or should I go? Risk perception and use of local public transport during the COVID-19 pandemic. *Front Psychol* 2022; 13: 1–21.
11. Chee HL and Whittaker A. Moralities in international medical travel: moral logics in the narratives of Indonesian patients and locally-based facilitators in Malaysia. *J Ethnic Migrat Stud* 2020; 46(20): 4264–4281.
12. Williams M and Moser T. The art of coding and thematic exploration in qualitative research. *Manage Int Rev* 2019; 15(1): 45–55.
13. Natow RS. The use of triangulation in qualitative studies employing elite interviews. *Qual Res* 2020; 20(2): 160–173.
14. Merriam SB and Tisdell EJ. *Qualitative research: A guide to design and implementation*. John Wiley & Sons. 2016, pp.245. https://books.google.co.id/books?hl=id&lr=&id=JFN_BwAAQBAJ&oi=fnd&pg=PA137&dq=Qualitative+Research:+A+Guide+to+Design+and+Implementation&ots=wO2PQL-Gc0&sig=1X6Vxn8vmWHmAOyvBUMXvyKoJec&redir_esc=y#v=onepage&q=triangulation&f=false
15. Dosek T. Snowball sampling and Facebook: How social media can help access hard-to-reach populations. *Polit Sci Polit* 2021; 54(4): 651–655.
16. Lopez V and Whitehead D. Sampling data and data collection in qualitative research. In *Nursing & Midwifery Research: Methods and Appraisal for Evidence-Based Practice*. 4th ed. Elsevier Mosby. 2013, pp. 123-140.
17. Decree of the Minister of Health No. 882/Menkes/SK/X/2009 Concerning Guidelines for Handling Medical Evacuation. 2009.
18. Regulation of the Minister of Defense of the Republic of Indonesia Number 34 of 2014 concerning Medical Evacuation in Disaster Management within the Ministry of Defense and the Indonesian National Armed Forces. 2014.

19. Regulation of the Minister of Health Number 19 of 2016 concerning the Integrated Emergency Management System. 2016.
20. Regulation of the Head of the National Disaster Management Agency No. 13/2010 concerning Guidelines for Search, Rescue, and Evacuation. 2010.
21. van der Bles AM, van der Linden S, Freeman ALJ, et al. The effects of communicating uncertainty on public trust in facts and numbers. *Proc Natl Acad Sci USA* 2020; 117(14): 7672–7683.
22. Al Siyabi H, Al Mukhaini S, Kanaan M, et al. Community Participation Approaches for Effective National COVID-19 Pandemic Preparedness and Response: an Experience from Oman. *Front Public Health* 2020; 8: 616763–616768.
23. McCartney G, Ung COL and Pinto JF. Living with COVID-19 and sustaining a tourism recovery—adopting a front-line collaborative response between the tourism industry and community pharmacists. *Tour Hospital* 2022; 3(1): 47.
24. Ghomian Z, Eskandari Z, Sohrabizadeh S, et al. Factors affecting development of air ambulance base: a systematic review and thematic analysis. *J Educ Health Promot* 2021; 10: 320–411.
25. Rasmussen K, Røislien J and Sollid SJM. Does medical staffing influence perceived safety? An international survey on medical crew models in helicopter emergency medical services. *Air Med J* 2018; 37(1): 29–36.
26. Arora M, Tuchen S, Nazemi M, et al. Airport pandemic response: an assessment of impacts and strategies after one year with COVID-19. *Transp Res Interdiscip Perspect* 2021; 11: 1–5.
27. Bauranov A, Parks S, Jiang X, et al. Quantifying the resilience of the U.S. domestic aviation network during the COVID-19 pandemic. *Front Built Environ* 2021; 7: 1–9.

Appendix I

Table AI. Most significance statement.

Informants	Topic	Sentence
Academic	Policy implementation	There is no regulation that informs all parties involved in the implementation of medical evacuation. Each moves according to an unwritten agreement, utilizing a network of partners and colleagues
	Human Resources (Education) Readiness	In this hospital, the Aviation Health Specialist Doctor works alone. There is no team to help, while other service duties must also be carried out. That's why this service is like going nowhere.
	Policy implementation	We organize a study centre that focuses on research to find evidence and community service to train students' sensitivity and readiness to apply knowledge in the field.
	Infrastructure	until now in Indonesia, there are no national regulations or guidelines that integrate the roles and authorities of each party in organizing medical evacuation by air.
Business, as provider	Infrastructure	specifically for regional general hospitals, facilities in the form of helipads are even available, but what is still an obstacle for internal hospitals to develop medical evacuation services is an internal standard operating procedure (SOP) that has not yet been formulated to regulate service mechanisms." Furthermore, this hospital only employs Aviation Health Specialist Doctor. . . So, there is still a lot of work to be done.
	Infrastructure	Many people ask this (do we have our own aircraft), we do not have our own aircraft, we still work with available airlines. The similar companies mostly do not have own aircraft, even overseas companies. Therefore, our services also depend on the availability of aircraft, considering the type and schedule and according to the patient's condition.
	Health Human Resources: Suggestions for providing medical workers with a background in aviation medicine with public health perspective capacity.	(In terms of community medical education, including aviation medicine) what is learned and what can be done for society are basically five levels of prevention. (In terms of medicine), the first is to determine whether the pilot is fit-to-fly, not only determines whether flight personnel may fly or not but if they have special conditions then how to manage them so that these special conditions do not endanger the flight attendants. In the context of medical evacuation, we are not just accompanying but what do you do while accompanying the patient on the plane, what is the response so that you can immediately transferred or escorted to a referral hospital or other. Apart from that, what is preventive might be if the medical escort is towards medical tourism or tourism, how to prevent the transmission of diseases, especially airborne ones, what vaccines can minimize the risk.
	Policy implementation	PLN officials in Sumbawa Island must be sent/evacuated, the condition of COVID-19. However, it cannot be sent due to the pandemic. But because of life problems, all the rules "lose." Another problem is that the destination city, namely Surabaya City, does not want to accept it. Finally, the official was trapped in Sumbawa Island and eventually died. Even though the patient was willing to be flown by charter plane.
Community	Policy implementation:	Media, community, government involvement so that more people understand the importance of aviation medicine: Airlines still don't feel the need for aviation medicine because it might complicate the aviation business.
	Medical evacuation (Medicav) implementation: the beneficial of medicav business sector	The existence of a medical evacuation service by air really helped us. We once used this service through an agent when my in-laws had to be referred from Mataram to Jakarta. Their professionalism was very reassuring and helped us. I did not have to accompany my mother since from Mataram there were only relatives and my accompanying husband, and I prepared everything in Jakarta.
	Policy implementation: Inter-Island medical evacuation is not guaranteed in BPJS	One of the patients we accompanied, we took him to Jakarta by plane. For medical expenses, we accompanied them to get guarantees from BPJS. To help with transportation costs, we collected funds from the public and donors through social media (Facebook, Instagram, and website), by first informing the patient's condition and the urgency of being assisted
	Policy implementation: Government-based Health Insurance should consider insuring the medical evacuation by air transportation	It should be noted that there are cases where the BPJS guarantees medical evacuation, particularly for heart treatment." "The NGO's role is not only in providing accompaniment to patients for evacuation as regular passengers, but also in communicating with the Social Services and hospitals to ensure that the patient receives treatment as a medical evacuation patient.
Policy implementation: uninsured flight except with the medical team assistance	Basically, commercial flights are prepared for normal conditions and situations. The willingness of commercial flights to transport patients is the airline's policy. Airline crew will accept sick passengers only with a certificate of airworthiness and with the assistance of medical personnel.	