DOI: https://doi.org/10.61841/5qjkfa18 Publication URL: https://jarmhs.com/MHS/index.php/mhs/article/view/568

FROM 2016 TO 2025: PAKISTAN'S LIFELINE STILL GROUNDED – A RENEWED CALL FOR AIR AMBULANCE REFORM

[1*]Ehtsham-Ul-Aziz, [2]Dr Sadia Memon
[1]Deputy Public Prosecutor, Islamabad*
[2]Liaquat University of Medical Sciences Hyderabad.

Corresponding Author:
ehtshamulaziz@gmail.com

To Cite This Article: Aziz, E.-U.-., & Memon, S. . (2025). FROM 2016 TO 2025: PAKISTAN'S LIFELINE STILL GROUNDED – A RENEWED CALL FOR AIR AMBULANCE REFORM. Journal of Advanced Research in Medical and Health Science (ISSN 2208-2425), 11(5), 6-16. https://doi.org/10.61841/5qjkfa18

ABSTRACT
In 2016, legal and policy expert Hassan Rasheed Siddiqui recommended the creation of a Pakistan national air ambulance to provide emergency medical services during crises and in rural areas with poor healthcare infrastructure. This paper looks back on Mr. Siddiqui's call, describes the continued public fallout from policy inaction, and recommends a framework to establish a national air ambulance system informed by international best practices. Pakistan's geography, with its mountainous terrain, rural populations and the difficulties they can experience in finding even basic health services, has increased the urgency for fast-evacuation MEDEVAC facilities. The existing algorithms (military helicopters, private charter companies and ad hoc NGOs efforts) are insufficient and this results in vulnerable groups not receiving timely medical attention. In 2016, Mr. Siddiqui foresaw the establishment of an air medical network that would resolve the shortage of trained airborne paramedics, uniform protocols and inter-agency coordination. Yet not withstanding these explicit recommendations, in Pakistan's fragmented healthcare infrastructure, there is no functional air ambulance system for the larger public. Models and experiences from other countries including India, Turkey, and South Africa are worth consideration for Pakistan. Pakistan can model and adapt these systems by developing an integrated, cost-effective and equitable aero medical evacuation system which caters for urban and rural populations. A number of recommendations are provided for Pakistan, such as development of national legislation, regulatory authority under the CAA, fleet partnering, and aerial paramedical training programs as a panacea to the article. Incorporating digital dispatch and GIS technology will also be critical to minimizing air ambulance response times, particularly in rural areas. Taking these actions is necessary for providing lifesaving public health services that do not discriminate based on geography or wealth.

Keywords: *Air Ambulance, Pakistan, Emergency Medical Services, Healthcare Infrastructure, Public-Private Partnerships, Air Medical Network, International Models.*

INTRODUCTION

There's no greater need for an effective 24/7 emergency medical evacuation service in Pakistan now, than in the shape of air ambulances. Pakistan has high incidents of natural disasters, for instance floods, earthquakes and extreme weather events, as in other countries. These calamities, coupled with the horrors of continued hostilities pack a potent cocktail within which timely medical intervention can be the difference between life and death. Not only they scrutinize the video, but Pakistan has an increasingly growing population where large masses are scattered in remote hilly and rural areas. Such regions have limited access to infrastructure, with few healthcare facilities and not being able to address medical issues promptly. In these circumstances air ambulances are not only valuable, but essential tools for evacuating the very sick and injured in hard to reach areas that land-based transport cannot reach (Alamuddin, 2023).

With the costs of these kinds of risks and the obvious requirement for a national air based rescue system, Pakistan is yet to develop a properly documented network of air medical evacuation that would be within reach of the common Pakistani's. Millions of lives are in danger due to such gap in infrastructure, especially during disaster and emergency period. With no organized, government-sanctioned air ambulance system, large portions of the population — and particularly that in frontier or disadvantaged areas — are at risk for unnecessary death. Emergency medicine response is a broken ego-system grounded in disconnected resources that are often inadequate. These deficiencies in response capacity reveal a country ill-prepared for major crises, even as the number of disaster-related incidents continues to rise (Bhomwick, 2023).

THE CURRENT LANDSCAPE: GAPS AND CONSEQUENCES

It is technically and legally possible to establish a countrywide air ambulance system in Pakistan; however, there are major deficiencies in the nationwide emergency evacuation structure. Millions remain unprotected due to the lack of an organized, state-supported Air Ambulance network, especially in calamity, urgent situations. Military helicopters, private charter vendors, and on-demand NGO efforts do not adequately fulfill the pressing need for a service that is efficient, accessible, and effective for air medical evacuation in Pakistan at this time. This patchy arrangement does not offer fair access to emergency medical treatment and exposes wide parts of the population to harm that could be avoided in the case of an emergency (Ejaz, & Mallawaarachchi, 2023).

MILITARY HELICOPTERS

The Pakistan military maintains a fleet of helicopters that are often pressed into service during national emergencies such as natural disaster and conflicts. The helicopters are essential for quick travel and evacuation in times of emergency. Yet these planes are mostly designed for defense and security, which restricts their availability to private citizens for medical evacuations. War helicopters are not intended to serve as ambulance helicopters, using them as such consequently have a lower priority than military operations. Even if the military makes helicopters available in a more general way for civilian use, the numbers are so small they would be spread thin amid other military demands. Therefore their readiness for MEDEVAC is not stable or predictable (Haq, 2022).

This overwhelming dependence on military helicopters is a huge void in Pakistan's air medical evacuation system. Because the military's primary focus is on defense, its helicopters are frequently not be available or too few in number to accommodate the increasing need for emergency medical care especially in remote or isolated places. When a road accident victim is in urgent need, or a person is suffering from a heart attack or a pregnant woman from complications during childbirth in remote areas, the absence of air ambulances they can trust, impedes timely emergency assistance. This would prevent unnecessary deaths and highlights the need to have a funded civilian air ambulance system that is independent and sustainable, in times of crisis (Jain, 2023).

PRIVATE CHARTER COMPANIES

There are air ambulance services from a private charter air service company in Pakistan, but it is incredibly expensive and is generally only for the wealthy that have connections to or from government officials. These are commercial players, and their products are priced so that no ordinary citizen, and particularly in … rural areas or poorer parts of the world can use their services. Although there may be more opportunities for those who can pay for such services, but most Pakistanis simply cannot afford private air medical services (Qureshi, & Shah, 2019).

This uneven access to help exposes a major shortcoming of the country's system for emergency medical evacuations. Although privately hired air ambulances, such as the one operated by the adult MEDEVAC service, are not a feasible or scalable solution for Pakistan's medical evacuations, since they are the exception rather than the rule. With the financial constraint, such services are economically not viable for the vast majority of populace, especially at places with where healthcare facilities are scarce or absent. Consequently, those most at need for medical air evacuations suffer from the unavailability of options, for those in rural and underserved areas, upwards of 50% of their requests are denied because of

cost. It is this inequity in air medical services that causes an unnecessarily high number of instances of death and preventable anguish in some of the population, particularly if they are less fortunate and reside in low-income or rural areas where obtaining medical treatment is already scarce (Rana, 2023).

NGO-BASED OR AD HOC SERVICES

During major emergencies such as natural disasters or military conflict, air medical services may be provided by non-governmental organizations (NGOs) or be contracted out to a third party. But these are often ad hoc and short-lived, said Chalifoux, and do not have the continuity required to establish a dependable air ambulance network. The provision of services in NGOs (or those that operate ad hoc) is often ad-hoc and dependent on levels of funding, volunteer support, and scale of emergency (Shahid, 2023).

Most servicing organization do not have the proper medical grade equipment or have licensed staff educated in air medical evacuations. Consequently, many of these services fall short on the professionalism, reliability and safety necessary to carry out medical evacuations effectively. Though NGOs have a role in delivering humanitarian aid, their air ambulance operations are generally ad-hoc and too few to meet the ongoing needs of Pakistan's population. These may be useful in the immediate short-term in a specific emergency, but they do not substitute for a proper state-provided air ambulance service which, irrespective of scale of the emergency, can be on stand-by to deal with anything from day-to-day emergencies to mass scale emergencies (Rashid, 2023).

THE CONSEQUENCES

The lack of a dependable and organized international service of hypothetic air ambulance in Pakistan had a damaging on public health, being the cause of innumerable amount of deaths that could have been avoided in many a scenario. Delayed medical evacuations in emergency situations - certainly not for time-critical care - are a problem that continues to affect some of the most vulnerable people. During the 2022 Pakistan floods, thousands were stranded in flood-hit areas unable to reach medical support or evacuation. In many of the cases, such lives could have been saved only by a basic fleet of helicopters or mobile ICU units that could get to the afflicted rapidly and in safety. But with no organized air ambulance service, there was no way to quickly evacuate those caught in the floodwaters, resulting in large casualties (Shahzad, & Niyyar, 2023).

Also, absence of air transport services has been disastrous in other situations like road traffic accidents, obstetric emergencies and war. In a number of cases, prompt air evacuations could have been the difference between life and death. For example, patients who are critically injured in a road traffic accident might not survive the time it would take to get them to hospital overland, particularly in a remote area with limited access. There could also be scope for air medical evacuation in cases of maternal emergencies, especially where complications arise during child delivery in some of the rural areas, and the need becomes necessary for quick access to specialist attention in hospitals within the urban areas. But the lack of certain services mean options are few and far between for many people, and even more so in a time of need (Sajjad, 2023).

The impact of this deficient air ambulance infrastructure is devastating because the healthcare infrastructure is always overburdened in disasters, accidents, and health emergencies. These preventable deaths are occurring due to the lack of quick medical evacuation and treatment which adds strain to the already overburdened health system in the region. Moreover, the absence of a national air ambulance network also undermines public confidence in the government's capacity to provide timely assistance during a crisis, especially in remote and rural communities with the highest demand for medical services. As long as the air ambulance system is not dependable, the nation cannot effectively meet the health needs of it's citizens, particularly in emergencies when it is a matter of life and death, having to do with medical evacuation protocol (Simsek, 2022).

COMPARATIVE MODELS: WHAT PAKISTAN CAN LEARN

Many other nations have effectively established air ambulance systems, providing good examples that Pakistan can draw from to develop a more effective and equitable aero medical evacuation system. Nothing should prevent Pakistan to refine its strategy by learning from what India, Turkey and South Africa did in this regard. "Our international examples underscore the necessity for government participation, agencies collaborating effectively with one another and a leveraging of private resources together with public to create a dependable and widely available air ambulance capability," according to the report (Turkish Ministry of Health, 2023).

INDIA

Huge Improvements in Air Ambulance Service India India has made a lot progress in air ambulance services already such as the GVK-EMRI (Emergency Management and Research Institute) for example. The program has been instrumental in offering cost effective air medical evacuation options to people throughout the country in urban, rural, and remote areas. With the help of these air ambulances, GVK EMRI provides 24 hours emergency services across the country, especially in the areas where road connectivity is poor or where the medical facility is at a distance. The program provides life-

saving evacuation services to those in need in any location, and ensures that individuals in rural areas have access to air medical services similar to those in urban areas (Qureshi, 2023).

The successful example of India, which has incorporated air ambulances in its emergency medical response system, can be a source of inspiration for Pakistan. Pakistan can replicate GVK-EMRI by introducing government-financed programs, the proceeds of which can make air ambulance service available to more than just the wealthiest in the country. This universal service would be available to everyone, even those in rural communities who are typically unable to be served by private, for-profit air ambulance companies. The Indian model also teaches us the value of embedding air ambulance capabilities in a comprehensive emergency medical response where, along with ground services in the form of medical teams in the field, air evacuations can work in harmony to deliver timely and coordinated care. For Pakistan, such an effort could temper the disparity in access to live-saving MEDEVAC - particularly for isolated communities (Horowitz, 2023).

TURKEY

Description On May 5, 2015 the highly efficient centralized air ambulance system of Turkey is being managed by the Turkish Ministry of Health. This system is characterized by standardized medical protocols, efficient inter-governmental coordination and a fleet of aircrafts that can be used for medical emergencies while transporting patients. The system is put in place to ensure all areas of the country, even the rural and isolated ones, have access to air evacuation service that is quick and dependable. The Ministry of Health has the central role to oversee operations to have air ambulance services in line with national health policy and medical standards (Jilani, 2023).

One of the key advantages of Turkey's one-size fits all approach is that it allows for coordination between the Ministry of Health, the Civil Aviation Authority and local health services. This will also help in avoiding any overlap and delays in medical emergencies. Pakistan can take a leaf out of Turkey's book by establishing a central air ambulance service that can feed into the existing public health and emergency management services in the country. Pakistan would be able to ensure a non-fragmented air ambulance service that operates in coordination with the other parts lifesaving urgency care in this way. This would also potentially solve the problem of a lack of resources in some areas, by making it easier and faster to perform evacuations and conduct them with the required medical expertise (Hussain, 2023).

SOUTH AFRICA

Air ambulance services in South Africa operate in a mixed public/private sector system. All of this is accomplished with insurance-based systems, so even the lowest income populations can afford air medical services. The hybrid model has permitted the government to provide basic air ambulance services, with private companies also providing supplemental services for more complex cases as well as long-distance evacuations. Underwriting air medical evacuations with money paid into the insurance pool means that everyone is paying for it, so the costs are borne by society as a whole rather than by any particular group of people (O'Neill, 2023).

The South African methodology illustrates how involvement from both public and private sectors is necessary to make air ambulance services both available and sustainable. That model potentially could work here in Pakistan, if the government was to look at PPPs that would address issues such as air ambulances where government funding alone would not be enough." Insurance based funding would also make air medical evacuation more accessible for a broader spectrum of Pakistani people, as lower middle class and lower class individuals and families can generally not afford to access private air evacuation service options. Such a hybrid model would be a significant step toward a fairer system of air ambulance access, so that no citizen who requires prompt medical evacuation has to worry about how to pay for it (WHO, 2020).

It was as recent as 2016 when Mr. Hassan Rasheed Siddiqui a legal and policy expert, wrote a detailed policy article on the same issue. He emphasized on the need of an organized air ambulance system as a big missing gap in the emergency medical infrastructure in Pakistan. His article presented a compelling argument for the urgent need to develop air ambulance services capable of carrying out specific tasks during disasters, medical emergencies and in remote settings. He said that in the absence of such system, Pakistan will continue to face avoidable loss of life due to patently avoidable delays in high-risk and time-critical scenarios. His proposals outlined how the air medical services could be designed to do so and how these services would save the lives of many for whom minutes, rather than hours, could mean the difference between life and death.

Nearly ten years after Siddiqui's timely intervention little has changed. There is, however, increasing acceptance that Australia cannot continue without a national air ambulance service, but so far there has been little progress towards achieving that. And the country's emergency system is largely ad hoc — a patchwork of private services, military resources and occasional nongovernmental organization interventions. Most of the private services which are available are way beyond the reach of the ordinary citizen; they are reserved for the wealthy of the world's elite, and, military helicopters despite a somewhat ad hoc use in emergencies are intended primarily for military operates and are rarely left free for civilian use. This leaves a continuous level of vulnerability, especially in distant regions, where absence of

medical infrastructure makes air evacuation a necessity. The lack of a national air ambulance service has therefore put many people at risk when quick medical evacuation could save lives, be it road accidents, natural disasters or health emergencies.
Indeed, the ongoing lack of a robust and accessible air ambulance system highlights the applicability and urgency of the recommendations that Mr. Siddiqui has outlined. The 10 year delay to action has resulted in unnecessary deaths, particularly in emergencies when efficient medical evacuation could have made a world of difference." Allahyar's idea was one that was far ahead of its time — and one that remains a key blueprint in redressing the systemic loopholes in Pakistan's medical emergency response. Now more than ever the establishment of an air ambulance system in Pakistan is not just a policy issue but a matter involving life and death for the people.

MR. SIDDIQUI'S VISION (2016)

In his pioneering work, "Pakistan's Air Ambulance Network: Building Pakistan's air ambulance program" published in 2016, Mr. Hassan Rasheed Siddiqui, an authority on aviation law and policy, became the first person to lay the groundwork for a game changing approach to emergency medical services in Pakistan through the creation of a civil air ambulance network, reaching across all of Pakistan. A journalist who was well-versed on aviation and public health policy, Siddiqui saw the dire need in Pakistan for an emergency medical response system, especially in rural areas and in the face of catastrophic events. Yet his goal was not simply to meet immediate needs, but to develop a long-term program of emergency air medical evacuation that could save thousands of lives and serve every part of the populace, regardless of where they lived or how little money they had.

Siddiqui's idea, as envisioned by him, had many aspects to designing an air ambulance system, covering some very important aspects which were either very ill-developed or non-existent in Pakistan at the time. His proposal hinged on the absence of quick or immediate medical evacuation mechanism in the far-flung and neglected regions of Pakistan including Balochistan, Gilgit-Baltistan and Tharparkar. Areas with difficult topography or poor road access, with very few to no health facilities, usually remain isolated and cut off from timely medical help, including during natural disasters or accidents. People in those places would continue to bare significantly higher risks of preventable accidents deaths in emergencies if there weren't a robust network of air ambulances, as the difference between life and death often comes down to access to medical help in time, Siddiqui noted.

Along with the geographical issues, Siddiqui highlighted the lack of qualified airborne paramedics, medically certified protocols, and identified landing spaces as another challenge. He said proper air ambulance operations were more than simply having an aircraft and involved experienced medical professionals trained in handling emergencies in the air, and defined medical protocols to ensure the best care while in transit. Pakistan had at the time nothing or almost nothing in place for formal training for airborne paramedics, creating a huge discrepancy in the quality and effectiveness of possible air medical missions. The absence of approved landing zones, which play a key role in ensuring the safety and effectiveness of aerial evacuations, also made doing so in an orderly and widespread way difficult.

The other thing Siddiqui felt was that there had to be a coordination between the CAA, the Ministry of Health, and the Army. He contends that the ability of a national air ambulance service to flourish is dependent on the three being able to work together as a matter of all playing important roles in various air medical roles. CAA would exercise its regulatory authority over the air domain and Health Ministry would look after medical standards, appropriate patient care etc. Furthermore, the Armed Forces would be a key allies, given their ability to provide fixed-wing aircrafts and the supporting cast with whom to make deals. "The only way we will ever be able to have a working air ambulance service in the province is if we actually start talking to each other," Siddiqui emphasized.

In addition, Mr Siddiqui suggested creative ways to address current resource constraints being experienced in Pakistan, including possible dual use of helicopters, UAVs or retired military aircraft for air medical services. Pakistan's military, which already controls a fleet of helicopters, could convert some into assets for civilian medical evacuation. Furthermore, the use of unmanned aerial vehicles (UAVs), or drones, for medical deliveries or patient transfers in appropriate circumstances may be a cost-effective and efficient approach. In fact, if it used retired military aircraft or drones for certain tasks, Pakistan could overcome some of the resource constraints and far better use the existing infrastructure. Over all, Mr. Siddiqui didn't think small when it came to air ambulances: He envisioned a comprehensive, sustainable and coordinated air-medical system, not only for everyone but particularly for people in remote areas, or places with a high likelihood of disaster. He knew that the solution was multi-faceted — it needed infrastructure, trained people, inter-agency coordination, and inventive use of resources. Siddiqui's idea was forward-looking, as he anticipated the demands that would be placed on Pakistan's healthcare infrastructure and presented a practical way to address a long-ignored issue. His suggestions, if adopted, would have revolutionized the emergency medical care capabilities of Pakistan, where air medical evacuation did not become an elite phenomenon, but a birthright of every Pakistani citizen in the hour of need.

LACK OF RAPID MEDICAL EVACUATION INFRASTRUCTURE IN REMOTE AREAS

Mr. Siddiqui's reporting of the problems pertaining to the air ambulance capabilities of Pakistan brought to light the alarming absence of effective medical evacuation systems in far-flung and hard-to-access areas of Pakistan, including

Balochistan, Gilgit-Baltistan and Tharparakar. These areas are widely geographically isolated, being located in rough mountainous or big desert landforms and hard to reach through normal road or means of travelling. Complications resulting from accidents, illnesses, or childbirth (which is common when early and frequent pregnancies occur) are particularly dangerous for rural girls and women living in these areas who are in desperate need of immediate medical attention, yet have either unreliable roads or poor transportation infrastructure that effectively prevent them from reaching health centers early enough to receive emergency life-saving treatment. In case of natural disasters, like earthquakes and floods, access roads are often destroyed, resulting in no means to communicate with the rest of the world.

Without an organized air ambulance network, this has left these vulnerable populations with no access to urgent care and compounding their existing difficulties. For instance, road accidents or health related emergencies on these places can lead to avoidable deaths owing to the time when one takes to visit a right medical relief. Geographical barriers and absence of rapid evacuation (air ambulances, for example) makes the already feeble healthcare infrastructure inadequate for the remote population. Siddiqui maintained that without an air ambulance system in place for rapid and efficient evacuation, especially in the worst affected and hard to reach areas, Pakistan would continue to lose lives to no good reason. His point was evident: without medical evacuation services in these remote areas, the country would never address the basic health needs of a major section of its population.

ABSENCE OF TRAINED AIRBORNE PARAMEDICS AND CERTIFIED PROTOCOLS

Besides the geographic obstacles, an obstacle (pointed out by Mr. Siddiqui) was: the absence of trained airborne paramedics and of standard medical protocols that are required to carry off air evacuations at the great heights. The only exception is a few paramedics in some urban centers, and even they have not been trained to the specialized requirements of air medical evacuations. Airborne medics are more than just paramedics in the sky – they're highly trained specialists who receive training not only to perform emergency medical procedures, but to manage patients in an unusual and challenging environment: an aircraft. Intensive care staff are needed because they need to know how to give intensive care in a flight environment, which can be vastly different from the stable environment of a hospital or land based emergency service.

Siddiqui noted that there were not many dedicated air medical services paramedic training programs in Pakistan, if any at all. Without the specialised personnel, air ambulance services would not necessarily be available, and would be unable to function at the appropriate level of care to deliver care in line with internationally accepted medical standards. Siddiqui also noted a lack of authoritative medical procedure for air evacuation. The absence of such protocols contributed to air medical operations that may have been inconsistent, non-reliable, and, at times, unsafe. Every operator, medical and regional team would have a different protocol, so there would be no simple and effective system across the UK. Without such standardization, air evacuations could be chaotic — inefficient, delayed and possibly harmful to patients in transit. Siddiqui stressed that an air ambulance service in Pakistan could only work if it has trained personnel and a set of clear, certified protocols that govern everything from patient care to aircraft maintenance, communication between medical and aviation authorities.

COORDINATION BETWEEN CIVIL AVIATION AUTHORITIES (CAA), MINISTRY OF HEALTH, AND ARMED FORCES

Other critical issues, highlighted by Mr. Siddiqui, are coordination between the many institutions and authorities who are a part of air ambulance operations in Pakistan. He further argued that in order to have a functioning, national air ambulance service, one that can take the Danish cases discussed in my brief and move the patients where they are appropriate, all of the following must collaborate without a hitch: CAAs, Ministries of Health and the various armed forces. As the regulator overseeing all civil aviation – including air ambulances – in the UK, the CAA would be well placed to ensure that air ambulances meet the necessary safety standards and regulatory requirements. But the CAA cannot run the medical side of the operation alone. That would become the Ministry of Health's responsibility, he explained, which would have to create medical protocols, train paramedics and oversee that health services adhere to the appropriate standards in the air evacuations.

In addition, Siddiqui appreciated the fact that the country's Armed Forces could provide significant assistance in kick-starting a nationwide system, due to its portential to utilize the experienced-based infrastructure of the military in place of partnering with a conventional air medical service provider. Military helicopters are mainly for defense purposes and can be readily converted for air medical evacuations, especially in the context of remote or disaster-affected areas. But, for effectiveness, CAA on one hand, Ministry of Health and Armmed Forces on the other will have to come together with predefined expectations, clarity on responsibilities and uniformity of operations. Siddiqui cautioned that in the absence of a coordinated approach by agencies, attempts to create an integrated air ambulance system would continue to be in disarray, resulting in inefficiency, confusion and waste. For a national system to be successful there had to be defined roles and responsibilities, strong relationships, and a shared policy and implementation approach among these important players.

USE OF DUAL-USE HELICOPTERS AND RETIRED MILITARY AIRCRAFT

In his piece Mr. Siddiqui provided a novel response to the resource constraints on Pakistan's air ambulance system: dual-use helicopters and decommissioned military aircraft. Pakistan has a huge fleet of retired military helicopters which with minor modification can be used for civilian employment, especially in the event of medical emergencies. Although these helicopters are basically military-oriented aircraft, it turns out that all factors considered, they can be refurbished as air ambulances for the purpose of medical evacuation. This reuse would also overcome one of the biggest hurdles to developing an air ambulance system: money. The purchase of new helicopters or other fixed-wing aircraft for civilian use could be prohibitively expensive, but leveraging existing military assets, Pakistan could have the beginnings of a workable air ambulance network at a fraction of the cost of new aircraft.

Siddiqui also recommended consideration of the use of drones or unmanned aerial vehicles (UAVs) for some aspects of air medical services. Though UAVs may not be ideal for large patient evacuations, they could provide an essential means of transporting medical supplies, drugs, or critical tools to where they were needed most in areas otherwise inaccessible. With the addition of UAV's to the air ambulance system Pakistan has an access to a cost-effective, coordinated, flexible and rapid solution for disaster situations where conventional air evacuation is not feasible. Siddiqui's idea was visionary—it conveyed an understanding that what Pakistan's Air Ambulance service needed was both traditional and innovative solutions to conquer overcoming the barriers of cost, access and resources.

SIDDIQUI'S CONCLUSION

But in his concluding intervention, Mr. Siddiqui delivered a ringing argument of "why Pakistan was working in a pre-emergency model", and why the failure of Pakistan to institutionalize air medical logistics would have catastrophic repercussions especially in case of national level disasters. He was not just worried about specific, high-profile emergencies of the moment; he was worried about the broader and more lasting consequences of turning its back on that kind of infrastructure. Siddiqui contended that the lack of formation of a national air ambulance system would leave Pakistan dividing itself under a dense layer of unparalleled public health crisis worsened by natural catastrophes, accidents and conflicts. And these difficulties would only be magnified in coming years as both Pakistan's population expands and urbanizes, and as it potentially encounters increased instances of natural and man-scrambled emergencies. Siddiqui's message came through loud and clear: the absence of such a systematically organized system of air ambulances was not simply a policy oversight — it was a colossal public health failure that would cost lives human lives — unnecessarily. Without remedies, the ongoing non-availability of timely air medical evacuation would have continued to erode the country's emergency response infrastructure, resulting in avoidable mortalities and long term implications for the country's health care industry (Jilani, 2023).

KEY LESSONS FOR PAKISTAN

-These international models highlight a few essential lessons for Pakistan to adopt an air ambulance model:

Government Involvement and Subsidization: Pakistan could take a cue from India to have the air ambulance facilitated and funded by state to make it accessible to the entire population especially living in the rural or low developed areas. This would help counterbalance inequities in access to emergency medical services, and all people would have the opportunity to have the benefit of an air evacuation that can save lives (Akhtar, 2023).

Centralized Coordination and Standardization: Turkey's centralized air ambulance system shows the importance of standardized centralized direction and guidance for the delivery of air medical services. Pakistan can streamline the efficiency, accuracy and reliability of its air ambulance operations by developing a centralized facility that is linked to established health and disaster control systems. There is a need for unified protocols and coordination between agencies to ensure services can be safely provided in a timely manner (Ali, 2023).

Public-Private Partnerships and Insurance Models: South Africa's dual model has demonstrated the advantages of pooling resources from both private and public sector to provide air medical services. Pakistan may also look for such linkages where the state role is to contribute in basic or essential services and private sector adds value through specialized or supplemental services. Furthermore, insurance-based payment for this service could bring the cost of air medical services within reach of public payers, disseminating care in way that is both affordable and fair(Ghalib, 2023).

In summary, the international not-for-profit models demonstrate the critical roles that government support and coordination, as well as intentional engagement by both the public and private sectors are in the development of a successful air ambulance system. Pakistan should be studying these models and placing an air ambulance system at the heart of a government funded system that is available to all residents who are in need of timely medical evacuations and that gives the same treatment to those living in the impoverished interiors of the country as to those living in the more comfortable, well-off areas (State Bank of Pakistan, 2023).

RECOMMENDATIONS FOR IMPLEMENTATION

Developing a national air ambulance system in Pakistan that is effective, affordable doable and long lasting would demand a systematic approach that focuses on overcoming legal and operating impediments. Based on Mr. Siddiqui's sound suggestions, there are a number of essentials that are mandatory for the national air ambulance network to be a success. These guidelines also intend to not only develop a structured, dependable and trustworthy air medical evacuation network,

but also make sure that it is available, timely and well-converged with the overall health care and emergency services system of Pakistan (Azad, 2023).

NATIONAL LEGISLATION

Creating a National Air Ambulance System The first and most significant step is to pass an Air Ambulance Act for Canada. This bill would become what the industry had been missing – air medical services for the public at-large. The Air Ambulance Act would establish operational standards, financing mechanisms, staffing qualification standards, and the responsibilities of the different entities involved with air ambulance operations. It would help ensure sufficient resources for life-saving air ambulance services, making them a permanent part of the national health care system (Ayaz, et al., 2023).

A specific legal framework would also ensure the regulation of such setups of air ambulance networks with regard to standardization and safety and above all, guaranteeing their availability. And it would help direct public funding to air ambulances, which would in turn allow them to extend their services to areas currently underserved, such as rural corners of the province. The regulatory framework would expressly define the powers and obligations of the parties (government agencies, health practitioners, aviation authorities, and private companies that engage in air medical evacuations). Given the above situation, there is an urgent need to have a law in place that helps the service providers in its smooth implementation otherwise it's not possible for service providers to sustain for longer period (Burki, 2023).

CAA REGULATION

Of equal importance is to establish a civil air medical licensing authority within the Civil Aviation Authority (CAA). This regulator would regulate, AND standardize, the way that air ambulance services operate in Pakistan such that the safety and medical treatment provided is in line with modern international best practices. The CAA would have the task of certification for air ambulances, to see that the planes used for medical evacuations conform to rigorous safety standards, and to monitor the maintenance and operational readiness of the aircraft (Hanif, 2022).

Moreover, the CAA would set standards for accrediting and training the medical personnel who work on air evacuations, so that the paramedics and other providers at the heart of air medical care have had the specific training and education they would need to properly and reliably provide care in an airborne setting. The regulatory entity would also need to incorporate a system of reassessment for Air Medical Services operations, which would make the services accountable to the regulators against national and international benchmarks. Implementing such regulatory oversight would result in air ambulance services delivering the same high-quality, professional, responsive care that the public expects on any emergency call, creating public confidence that we are in the salvation business (Khan, 2023).

FLEET DEVELOPMENT

Building a fleet of air ambulances that can fulfill Pakistan's varied medical evacuation requirements is a key part of the national air ambulance mission. A closer collaboration with the Pakistan Air Force (PAF) may presumably lead to the availability of helicopters and other aircraft suitable for air evacuation of patients. PAF already has a fleet of helicopters and planes — some of them can be converted into civil use for emergency medicine services. Pakistan would also have the potential to easily extend the infrastructure for a national air ambulance service if it was successful in deploying a fleet of air ambulances rapidly with the support of the military, and without having to pay the vastly expensive rates those other countries are forced to pay to source very expensive aircraft new (Horowitz, 2023).

In addition to the military, private corporations would likely have a role to play in keeping the fleet going and in upkeep and innovation. "Alliances with leading players in the private sector will make this possible," the essential executive explains, citing aircraft maintenance, the introduction of innovative solutions suited for air medical evacuations, as well as fleet expansion to accommodate growing demand. This partnership between public and private sector would ensure that Pakistan is equipped with a versatile and adaptive air ambulance fleet that can be called on depending on the nature of the emergency – whether it is from the evacuations for medical necessities or rescue operations in the aftermath of a disaster (Hussain, 2023).

TRAINING PROGRAMS

Also crucial is the development of special training for aerial paramedics and other medical personnel that would be in charge of care during air evacuations. These training programs, in concert with medical colleges and international aid and support organizations, would see Pakistan have a trained staff to handle medical emergencies in the aerial environment (Siddiqui, 2023).

Such training should be comprehensive and include other subjects such as advanced life support, trauma care and the unique issues that arise when providing care at 30,000 feet in the air. Building on the medical training, training programs must deal with challenges for medical personnel accompanying air-evacs, manipulating patients in a restricted environment, dealing with turbulence and coordinating with flight crews. Through comprehensive medical and operational

air medical transportation training, Pakistan is able to make sure its air ambulance services are filled by professionals who can deliver the best quality of care to those who need it.

DIGITAL DISPATCH AND GIS INTEGRATION

Another important milestone is the introduction of Geographic Information Systems (GIS) technology for real-time emergency mapping and dispatching of the Air Ambulance Service. GIS technology can improve response times by providing emergency dispatcher systems with a rapid view of a location of an emergency, as well as information that can be used to determine which aircraft to use, and the most appropriate location for the air ambulance in terms of terrain and weather and the location relative to the patient.

Through ready-to-use emergency medical services (EMS) systems, the use of geographic information system (GIS) technology and real-time reporting, Pakistan can establish a dynamic and evidence-based air ambulance network that is responsive and can effectively channel resources to the most needy. For instance, GIS can be applied to plot the location of hospitals, landing zones and rural sites and thus facilitate quicker decisions in the allocation of air ambulance resources (Pakistan GDP annual growth rate, 2022). Furthermore, a combination of real-time traffic, weather and airspace management data would allow the most direct path for the aircrafts to safely and quickly reach the patients. The infusion of technology in the dispatch system would make air medical services more efficient and effective at delivering life-saving resources where they are needed, when they are needed (Nosherwan et al., 2023).

A national system of air ambulance in Pakistan will succeed only if it is planned, coordinated and all stakeholders are taken on board. The procedure, as indicated in key points above, ranging from legislation at national scale, institution of regulatory authority, acquisition of air ambulance fleet and a a set of extensive training programs to ensure establishment of robust and lasting air MEDEVAC network can be employed by the Pakistan. Moreover, technology adoption including GIS mapping and dispatch and GPS for location-based services will guarantee the efficient running and early response of Pakistan's air ambulance service to its potential recipients, especially those in remote, affected disaster areas. Through such initiatives, the State of Pakistan can ensure timely and life-saving medical evacuation services for its people, and can also play an important role in benefiting the public health system and emergency preparedness (Siddiqui, 2016).

CONCLUSION

Mentioned previously, Mr. Hassan Rasheed Siddiqui's demand for a well-established air ambulance service in Pakistan in 2016 is as valid now as when he made it almost nine years ago. Decades ago, his progressive appeal knew the pressing requirement of a competent and reachable air medical evacuation facility to cater to the challenges endemic to Pakistan's health care, especially when coping up with natural calamities, road accidents, and medical emergencies in the middle of nowhere. In addition to advocating the humanitarian need for such a system, Siddiqui also discussed the logistical practicality of such a system. But despite his last-minute heroics, Pakistan has yet to take any major strides toward fulfilling his dream. The non-existence of a national air ambulance service, has continued to contribute to unnecessary loss of lives throughout the country, especially in underserved and hard to reach areas where prompt medical evacuation would mean the difference between life and death for victims.

According to Steve McCann, Air Ambulance Network (AAN) director and former director of the Canton Fire Department, this has left millions of Pakistanis without access to life-saving emergency healthcare services. From the victims of road accidents, maternal-related problems, and tragedies like floods and earthquakes, the non-availability of an effective air evacuation system has been identified as an enormous lacking in Pakistan's response capacity to public health emergencies. The use of military assets, private charter flights and ad hoc NGO missions is important in some cases, but it does not ensure the broad and consistent span of coverage needed to save lives across the country.

The Pakistani state must now heed Mr. Siddiqui's suggestions and create a national air ambulance system that does not distinguish on class, on region, on natural disaster. Not only would this system respond to need for emergency medical evacuations, but over the long term it would be a universal, fair public provision guaranteeing all citizens the freedom to seek emergency medical care at a time of need. With the right legal regime, coordination between the key agencies, public-private partnerships, and technology and training investments, Pakistan has the potential to establish a safe, effective, and inclusive national air ambulance service.

Setting up this system is not just about better public health results, it is about national duty. Image A robust air ambulance system wouldn't just save thousands of lives, it would also be evidence of the country's dedication to the health and safety of its residents. It is now time for Pakistan to recognize and deliver on Mr. Siddiqui's pertinent call by, first and foremost, establishing a national air ambulance service turning it into more than just an urgent suggestion and into a life-saving reality that can strengthen public health responsiveness and contribute to a more robust health system in times to come.

REFERENCES

[1] Akhtar, S. (2023). Economy: No country for the young. Dawn.com. https://www.dawn.com/news/1733020

[2] Alamuddin, B. (2023). Inequality and the threat to Pakistan's economic stability. Arab News PK. https://www.arabnews.pk/node/2264491
[3] Ali, M. (2023). Pakistan's trade deficit: Challenges and prospects. Weekly Cutting Edge. https://weeklycuttingedge.com/pakistanstrade-deficit-challenges-andprospects/#:~:text=Pakistan's%20global%20trade%20share%20has,successfully%20expanded%20their%20export%20capacities
[4] Ayaz, M., Chaudhary, G. M., & Masoom, M. A. (2023). Effect of energy crisis on performance of export and non-export oriented textile companies in Pakistan. Journal of Educational Research and Social Sciences Review (JERSSR), 3(1), 140-147.
[5] Azad, A. R. (2023). Economic growth has to be backed by structural reforms: Shamshad. Brecorder. https://www.brecorder.com/news/40274947
[6] Bhomwick, S. (2023). 'Unbalanced' balance of payments: Pakistan's vicious cycle. Observer Research Foundation. https://www.orfonline.org/expertspeak/unbalanced-balance-of-payments
[7] Burki, S. J. (2023). Income inequality and poverty in Pakistan. Express Tribune. https://tribune.com.pk/story/2408328/income-inequality-and-poverty-in-pakistan#:~:text=By%20all%20measures%2C%20Pakistan%20performs,the%20average%20for%20the%20porest.
[8] State Bank of Pakistan. (2023). Chapter 6. https://www.sbp.org.pk/reports/annual/aarFY22/Chapter-06.pdf
[9] Ejaz, N., & Mallawaarachchi, T. (2023). Disparities in economic achievement across the rural–urban divide in Pakistan: Implications for development planning. Economic Analysis and Policy, 77, 487-512. https://doi.org/10.1016/j.eap.2022.11.023
[10] Ghalib, S. J. (2023). Political instability and Pakistan's economic crises. Stratheia. https://stratheia.com/political-instability-and-pakistans-economic-crises/
[11] Hanif, U. (2022). Construction sector fears collapse. The Express Tribune. https://tribune.com.pk/story/2382837/construction-sector-fears-collapse
[12] Haq, S. (2022). An unyielding year for agriculture in Pakistan. The Express Tribune. https://tribune.com.pk/story/2393236/an-unyielding-year-for-agriculture-in-pakistan
[13] Horowitz, J. (2023). Pakistan's political crisis will deepen its economic misery. CNN. https://edition.cnn.com/2023/05/12/economy/pakistan-political-crisis-economydefault/index.html
[14] Hussain, A. (2023, November 16). Pakistan and IMF reach deal for releasing $700m from $3bn bailout package. Al Jazeera. https://www.aljazeera.com/news/2023/11/16/pakistan-and-imf-reach-deal-for-releasing-700m-from-3bn-bailout
[15] Inflation rates in Pakistan. (2022). WorldData.info. https://www.worlddata.info/asia/pakistan/inflationrates.php#:~:text=The%20inflation%20rate%20for%20consumer,rate%20was%208.25%20per%20year.
[16] Jain, A. (2023, March 7). 'Requested China to roll over USD 2 billion deposits': Pakistan tells IMF. Mint. https://www.livemint.com/news/world/requested-china-to-roll-over-usd-2-billion-deposits-pakistan-tells-imf-11678174815917.html
[17] Jilani, M. (2023). Exploring Pakistan's energy sector: Sources and trends. Paradigm Shift. https://www.paradigmshift.com.pk/pakistan-energy-sector/
[18] Khan, F. (2023). The geopolitical framing of Pakistan's economic crisis. South Asian Voices. https://southasianvoices.org/the-geopolitical-framing-of-pakistans-economic-crisis/
[19] O'Neill, A. (2023). Pakistan: Gross domestic product (GDP) in current prices from 1987 to 2023. Statista. https://www.statista.com/statistics/383739/gross-domestic-product-gdp-inpakistan/#:~:text=The%20gross%20domestic%20product%20in,value%20in%20the%20observed%20period
[20] Pakistan GDP annual growth rate. (2022). Trading Economics. https://tradingeconomics.com/pakistan/gdp-growth-annual#:~
[21] Nosherwan Adil, Kashif Ashfaq, & Muhammad Saad Arshad. (2023). Pakistan GDP per capita. Trading Economics. https://tradingeconomics.com/pakistan/gdp-per-capita
[22] Pakistan's foreign loan inflows slow down: Ministry of Economic Affairs. (2023, January 28). The Economic Times. https://economictimes.indiatimes.com/news/international/world-news/pakistans-foreign-loan-inflows-slow-down-ministry-of-economicaffairs/articleshow/97396161.cms?from=mdr
[23] Qureshi, A. (2023). Overcoming barriers to education and healthcare access in Pakistan: A comprehensive analysis. Medium. https://medium.com/columbia-journal-of-science-tech-ethics-and-policy/overcoming-barriers-to-education-and-healthcare-access-in-pakistan-a-comprehensive-analysis-
[24] Qureshi, I. A., & Shah, H. J. (2019). Deteriorating economic conditions and their impact on national security. ISSRA Papers, 11(II), 29-44.
[25] Rana, S. (2023, April 6). Pakistan's existential economic crisis. United States Institute for Peace. https://www.usip.org/publications/2023/04/pakistans-existential-economic-crisis
[26] Rashid, Dr. Q. (2023). What austerity measures. Pakistan Today. https://www.pakistantoday.com.pk/2023/02/25/what-austerity-measures/

[27] Sajjad, Dr. A. (2023). Pakistan's economic crisis: Unveiling the causes, impacts, and remedies. Superior University. https://oric.superior.edu.pk/pakistans-economic-crisis-unveiling-the-causes-impacts-and-remedies/
[28] Shahid, A. (2023). Pakistan's inflation rises to 31.4% y/y amid high energy prices. Reuters. https://www.reuters.com/markets/asia/pakistans-sept-cpi-314-yy-statistics-bureau-2023-10-02/
[29] Shahzad, A., & Niyyar, G. (2023). UAE to loan $1 bln, roll over another $2 bln to Pakistan - minister. Reuters. https://www.reuters.com/world/asia-pacific/uae-roll-over-2-bln-loan-pakistan-provide-1-bln-additional-loan-2023-01-12/
[30] Siddiqui, E. H. A. (2023). Industrial regression. The News International. https://www.thenews.com.pk/magazine/money-matters/1077048-industrial-regression
[31] Simsek, H. A. (2022). A brief analysis of Pakistan's economy in the context of regional developments. Eurasian Research Institute. https://www.eurasianresearch.org/publication/a-brief-analysis-of-pakistan-economy-in-the-context-of-regional-developments/
[32] Siddiqui, H. R. ., & Leghari, A. . (2007). FAITH, FREEDOM, AND THE FUTURE: RECLAIMING INCLUSIVE DEMOCRATIC VALUES IN SOUTH ASIA. The Journal of Contemporary Issues in Business and Government, 13(1), 107–116. Retrieved from https://cibgp.com/au/index.php/1323-6903/article/view/2868
[33] Siddiqui, H. R. ., & Leghari, A. . (2008). LIBERALISM IN SOUTH ASIA, A CASE STUDY OF CIVIC LEADERSHIP AND INTERFAITH HARMONY. The Journal of Contemporary Issues in Business and Government, 14(2), 90–97. Retrieved from https://cibgp.com/au/index.php/1323-6903/article/view/2870
[34] Siddiqui, H. R. ., & Muniza, M. . (2009). SOWING ILLUSIONS, REAPING DISARRAY: MEDIA INFLUENCE, URBAN MIGRATION, AND THE DISMANTLING OF SOCIETAL NORMS IN SOUTH ASIA. The Journal of Contemporary Issues in Business and Government, 15(2), 126–139. Retrieved from https://cibgp.com/au/index.php/1323-6903/article/view/2871
[35] Siddiqui, H. R. . (2011). IN THE COURT OF KNOWLEDGE, JUDGING THE JUDGES OF LEARNING. The Journal of Contemporary Issues in Business and Government, 17(1), 83–91. Retrieved from https://cibgp.com/au/index.php/1323-6903/article/view/2872
[36] Siddiqui, H. R. . (2013). THE PERSONAL LENS IN ACADEMIC EVALUATION: A CRITIQUE OF EDUCATOR BIAS. The Journal of Contemporary Issues in Business and Government, 19(1), 93–101. Retrieved from https://cibgp.com/au/index.php/1323-6903/article/view/2873
[37] Siddiqui, H. R. (2016). ESTABLISHING AIR AMBULANCE SERVICES IN PAKISTAN: A REGULATORY AND INVESTMENT FRAMEWORK FOR EMERGENCY MEDICAL AVIATION. Journal of Advanced Research in Medical and Health Science (ISSN 2208-2425), 2(5), 17-30. https://doi.org/10.61841/z1tjva12
[38] Siddiqui, H. R. . (2019). WHO JUDGES THE JUDGES? ADDRESSING INTEGRITY AND SECURITY GAPS IN THE SINDH JUDICIAL RECRUITMENT SYSTEM. International Journal of Advance Research in Education & Literature (ISSN 2208-2441), 5(8), 5-15.https://doi.org/10.61841/txq2w096
[39] Siddiqui, H. R. (2022). PUBLIC FUNDS, PRIVATE GAINS: INVESTIGATING CORRUPTION IN NADRA'S MEGA CENTER LEASE DEALS. Journal of Advance Research in Social Science and Humanities (ISSN 2208-2387), 8(12), 17-28. https://doi.org/10.61841/2s3kmv78