

**Exorbitant Prices of Ambulance Rides: What Possible Solutions Exist to Correct the Market Failure of the Air Ambulance Industry?**

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**Nicholas Lu**

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

Advisor

Bryn E. Seabrook, Department of Engineering and Society

## STS Research Paper

### Introduction

In the United States, the average cost for an emergency flight on a medical helicopter, also known as an air ambulance, was over \$40,000 in 2016 (United States Government Accountability Office, 2017). This figure is especially jarring when coupled with the fact that there is no difference in the mortality rate between patients transferred by ground as opposed to by air, and nearly one-third of patients transported by air are “minimally injured,” meaning that a large number of flights are unnecessary (Vercruysse et al., 2015). By the nature of emergencies, patients that are flown on air ambulances are often unconscious or otherwise unable to refuse consent, and the time-sensitivity of the situation leads to no comparison of price or consideration as to if a service provider is in-network of the patient’s insurance (Chhabra et al., 2020). As a result of these circumstances and other factors, there have been no market forces controlling the price of a flight on an air ambulance, so the price continues to increase each year. Due to certain legislation passed in the 1970s, the government is helpless to intervene and regulate the price to correct this market failure (Maryland Health Care Commission, 2006). These problems lead to the question: “What possible solutions exist to correct the market failure of the American air ambulance system industry?” Framing the dilemma of the exorbitant prices and market failure of air ambulances as a wicked problem due to its seemingly unsolvable nature provides a contextual direction from which this research question is answered.

### Research Methods

This report answers the question: “What possible solutions exist to correct the market failure of the air ambulance industry?” This question is primarily explored through the use of policy analysis of relevant legislation, as well as through a case study. The problem of overly

expensive emergency transportation is an active topic of discussion among policy-makers, as a new bill has been in effect since the first of January this year, which was introduced with the goal of alleviating part of the problem (Alexander, 2021). This bill and others like it are analyzed for their efficacy. Finally, a case study establishes an understanding of the purpose and operation of government-owned corporations as a basis for other possible solutions.

## **Historical Background**

### *Emergency Medical Transportation*

While it may be intuitive from a modern perspective, the original idea of a rapidly mobile ambulance was groundbreaking. Originally conceived in 1792 Baron Dominique-Jean Larrey, the general surgeon of Napoleon Bonaparte's army during the Napoleonic wars, the first modern ambulance was a horse-drawn wagon capable of advancing with the forward guard, allowing it to retrieve casualties and transport them to a central treatment center far more rapidly than previously possible. Prior to these "flying ambulances," as Larrey called them, wounded soldiers would be left on the battlefield to tend their own wounds for no less than 24, or even 36, hours after the fighting had stopped (Ortiz, 1998). Today, ambulances serve a few key and critical roles in the treatment of medical emergencies. Firstly, they exist as a way to transport an injured or ill patient to the nearest hospital capable of treating their ailment as rapidly as possible. Secondly, ambulances are equipped with medical equipment and personnel to provide immediate care to the patient before and during transit.

With regards to the rapidity of transportation, the "golden hour principle" is the basis on which all modern emergency medical services (EMS) are predicated. This principle basically states that a patient has roughly 60 minutes after sustaining a traumatic injury to receive treatment at a hospital before their odds of survival drop off dramatically (Lerner & Moscati,

2001). This time goal is rarely difficult to achieve in cities or suburbs, where emergency response times are usually on the scale of minutes. In rural areas, however, it is much more difficult, and it often takes rural healthcare systems hours to respond (McGinnis & Hutton, 2011). It is to this end that air ambulances claim superiority over traditional ground ambulances. Helicopters are able to fly more quickly and directly between locations than is often possible via the highway, and they are also able to access more remote areas far from any roads.

### *Airline Deregulation*

In the early days of aviation, when flight was still a fledgling technology, the concept of an air mail service was introduced, as a way of transporting mail faster than previously possible. Because the flights were occurring anyway, some mail carriers offered to carry a passenger or two on their flight to bring in a bit more revenue. By the 1930s, the airline industry had become largely profitable, despite the Great Depression, but it was also still young and chaotic (“History of Airline,” 2018). Political, social, and economic pressures strongly pushed to calm the chaos, so by 1938, all airlines, both passenger and cargo, were heavily regulated. Thereafter, the regulations were immediately of interest to economists and academics and remained controversial for the next several decades (Levine, 1987).

Despite the controversy, the regulations did accomplish the goal of stabilizing the industry, allowing it to prosper. Eventually, though, with their purpose served, many became tired of the regulations, as they forced expensive fares and prevented the efficient operation of the airlines (Smithsonian National Air and Space Museum, 2007). This sentiment, combined with academic consensus, led to the government deregulating air cargo services first in 1977, followed by passenger airlines with the Airline Deregulation Act of 1978 (Peterson, 2018). This act barred the government from dictating airfare prices, requiring approval to fly routes, or

preventing airlines from offering customers new options (FindLaw, 2016). This law originally had no effect on helicopter emergency medical services (HEMS), but as more of these services shift to private corporations, HEMS are increasingly affected as they now technically count as airlines.

### **Wicked Problem Framing**

This STS research topic is framed as a wicked problem. Wicked Problem Framing was developed by Dr. Horst Rittel in the 1960s as a way to more accurately represent problems to be solved in the process of social policy planning (Buchanan, 1992). In his model, wicked problems are described as “that class of . . . problems . . . where there are many clients and decision makers with conflicting values, and where the ramifications in the whole system are thoroughly confusing” (Churchman, 1967). A wicked problem exhibits one or more of the following characteristics:

1. It has no definitive formulation.
2. It has no stopping rule.
3. Solutions to it are not true-or-false, but good-or-bad.
4. There is no immediate and no ultimate test of a solution for it.
5. Every solution to it is a “one-shot operation”; because there is no opportunity to learn by trial-and-error, every attempt counts significantly.
6. It does not have an enumerable (or exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan.
7. Every wicked problem is essentially unique.
8. It can be considered to be a symptom of another problem.

9. The existence of a discrepancy representing it can be explained in numerous ways.

The course of explanation determines the nature of the problem's resolution.

10. The planner has no right to be wrong (Rittel & Webber, 1973).

Wicked problem framing provides an ideal basis for the analysis of the research topic, as the problem of the air ambulance industry's market failure meets several of the above criteria, and all possible solutions will involve some form of public policy adoption. For example, there are no objectively "right" or "wrong" solutions to the problem. As will be discussed later, solutions that are appealing to one party are often undesirable to another. More significantly, it is impossible to know exactly what effect a solution will have in the long term without watching it run its course, and solutions cannot be tested without consequence. Predictions can be made about the effect of a new policy, but just as Airline Deregulation had the unexpected consequence of creating this market failure, attempting to correct the problem could cause additional problems. Furthermore, every attempt at a solution will take a significant amount of time and have long-term consequences. Solutions cannot be quickly and easily tested in the same location. The closest policy-makers could get to comparable tests would be to push various solutions to multiple cities to see how they respond differently.

One of the chief critiques of wicked problem framing is that it is too absolute (Turnbull & Hoppe, 2019). Problems are considered either "wicked" or "tame," with no consideration about the degree of its wickedness. Additionally, some critics challenge the claim that an optimal solution cannot be determined. They argue that wicked problem framing exists in opposition to a purely rational approach to policy, and that given sufficient and correct information, the best policy decision can be calculated (Termeer et al., 2019). This paper addresses these concerns by

considering the degree to which possible solutions could relieve the problem, as well as attempting to rationally derive a solution.

### **Possible Solutions to the Problem**

When faced with a market failure, the only possible course of action to resolve it involves some form of government intervention (Pettinger, 2019). There have been many solutions proposed or attempted to relieve the problem, to varying degrees of success and failure. These solutions have typically involved trying to change the way air ambulances or hospitals are regulated, all of which have been ineffectual. The most recent solution has been to reduce medical bills across the board by prohibiting out-of-network insurance costs, but this solution will not be sufficient to alleviate the air ambulance market failure. Finally, the end of this discussion proposes an original solution to create a government-owned and operated air ambulance service, using Amtrak as a case study for its operation and efficacy.

A 2006 study by the Maryland Health Care Commission (MHCC) was conducted to determine if any solutions to the problem existed. In light of airline deregulation and other Maryland state laws, five options were suggested, and are as follows:

- Option 1. Regulate air ambulance services as a Medicare Part B hospital service, provided by the hospital through contracts with air ambulance services.
- Option 2. Require insurers to provide air ambulance services under network adequacy standards.
- Option 3. Establish a payment floor for air ambulance services.
- Option 4. Use improved market information to encourage air ambulance companies, hospitals, and payors to negotiate in good faith.

Option 5. Monitor patient complaints and air ambulance companies' losses on scene transport. (Maryland Health Care Commission, 2006)

Despite stated consideration for restrictions on regulation such as the Airline Deregulation Act and other Maryland state laws, each of these proposed options would be largely ineffectual, due to either a lack of legal support or not sufficiently addressing the problem.

The first option proposed would require hospitals to provide air ambulance services to patients. This approach would allow the state to limit how much the hospital could charge, without directly regulating any air ambulance company. Hospitals would be allowed to contract the service to the existing air ambulance companies, but it would incentivize the hospitals to shop around to find the best price. Through discussions with interested parties, the MHCC finds this solution to be widely unpopular. Firstly, hospitals are not keen on charging patients for a service they do not directly provide. The price charged to the patient is dependent on contracts between the air ambulance and insurance companies, in which the hospital has no hand. Including hospitals in this process would only serve to add processing costs and delay payments, it is argued. Secondly, it is found that private insurance companies typically have to pay more for in-network services than when they are out-of-network, which would result in higher insurance premiums for privately insured individuals.

The second option would require insurance companies to cover air ambulance services for their patients. The proposed legislation to accomplish this would stipulate that the insurance company of privately insured individuals could not require their members to pay more than they would for in-network air ambulance service, provided that there was no actual in-network provider reasonable available, and they were forced to use out-of-network services. The biggest strength of this option as a solution to the air ambulance market problem is that, since it does not



directly relate to the air ambulance companies themselves, it is not restricted by airline deregulation. However, it would not be a successful solution due to its extremely limited scope. Only privately insured individuals would benefit from it, and even then, it only reduces the bill from out-of-network to in-network levels, which are still extremely high. Furthermore, self-insured plans would also not be covered by this law. As far as the insurance itself is concerned, as with the previous option, requiring insurance companies to take on the additional liability of covering out-of-network expenses of air ambulance services would inevitably increase premiums, and would prohibit customers from negotiating a lower premium by omitting this seldom-used service.

Third, the MHCC proposes adjusting Maryland law so that insurance companies pay a fixed local value to air ambulance companies when they do not have already have a contract with them. This option has the benefit of standardizing the payment fee for air ambulance services, making the expense transparent and predictable. The amount that will be covered by the insurance company for the service will be known, making the amount the patient must pay known before service is rendered. This solution would be very difficult to implement as it requires regulating the amount that air ambulance companies would be compensated for their services, violating airline deregulation. Additionally, the nature of this solution would make it hard to contain its scope to only air ambulances. It would set a precedent for a payment floor for health care services, which would have dramatic bleed-over effects across the board, resulting in up to 8% higher health care premiums for privately insured individuals, which is directly counterproductive. Another major problem with this solution is that setting a payment floor for air ambulance companies who do not have contracts with insurance companies would further disincentivize them from joining a network.

The fourth option would be to encourage good-faith negotiation between all involved parties by making the market information publicly available. By incentivizing air ambulance companies to provide financial information to the MHCC, it could create regular reports on the state of the market, including participating air ambulance companies, the rates, the charge, the number of patients, and insurance company networks. This transparency would encourage normalcy to return to the free market, hopefully driving prices to become competitive with each other again. While this solution would ideally help lower prices, it is possible that it could work detrimentally, having prices stagnate at a high level. Additionally, most air ambulance companies oppose this solution, arguing that publishing data without context could mislead the public on the quality of service. As proposed, the information would be published on a website that reports hospital quality. This policy makes the solution unpopular with hospitals as well, who do not want to be associated or responsible for the service quality and cost of air ambulances that they do not govern. Despite the opposition, this solution would technically be legal to implement, but due to the lack of direct governmental intervention, it is unlikely that it would yield any useful product, in addition to possibly introducing more risk than is worthwhile.

The fifth and final option would be to establish the Maryland Institute for Emergency Medical Services System (MIEMSS) as the official monitor of patient complaints for air ambulance services. Patients or any other dissatisfied party could submit a report to the MIEMSS, which could then review the complaint and act on it if applicable. The chief benefit of this solution is that at the time when the study was performed, there was no official avenue to complain about air ambulance services. Without this program, the only way to complain would be to contact elected officials, which would be inefficient and unlikely to result in any action. One problem, though, would be that even if the MIEMSS did receive fair complaints, it still

could not violate airline deregulation or other state laws, limiting how much it could legally do. This difficulty notwithstanding, this solution still only covers a very limited scope and only tangentially addresses the problem of the market failure. As such, it is unlikely that it would actually result in any appreciable change in the current situation, especially since it is likely that the number of complaints submitted would be very small (Maryland Health Care Commission, 2006).

After the study, none of these five solutions were considered worthwhile or effective, and consequently, no action was taken to rectify the problem. The problem was consequently left alone for several more years to continue to fester and grow unchecked. Eventually, on December 27, 2020, Congress passed the No Surprises Act (NSA) in an effort to protect patients against surprise out-of-network medical bills (Brown et al., 2021). Effective since January 1, 2022, the bill is specifically targeted at patients who unintentionally find themselves receiving care from hospitals or other services, such as air ambulances, that they themselves did not pick. The NSA will accomplish this goal in two ways. First, it will “require private health plans to cover these out-of-network claims and apply in-network cost sharing . . . [applying to] both job-based and non-group plans” (Pollitz, 2021). Secondly, it will “[prohibit] doctors, hospitals, and other covered providers from billing patients more than in-network cost sharing amount for surprise medical bills” (Pollitz, 2021).

As discussed in the background section of this report, most air ambulance flights are out-of-network for their patients, so this bill will help reduce the cost to the patient. While this bill could go a long way in reducing the financial burden to patients in the American health care system, it will not solve the underlying problem with the American air ambulance industry and is merely treating a symptom of it.

The first and most obvious problem with the NSA as a solution to high air ambulance service prices is that even when in-network, the prices are still extremely high and unmanageable for many patients. Patients may not be required to pay the out-of-network costs for the flight, but this does not help the fact that the majority of flights are unnecessary to begin with, and patients who are unable to refuse the service are still expected to pay these high prices.

The second main problem is that the NSA will not stabilize the air ambulance market; prices will continue to climb as they have for the last many years. If the payer and provider fail to agree on a rate through negotiation, they may submit their proposed rates to an arbitrator, who will then select which party's rate will apply (Brown et al., 2021). The arbitrator, however, may not consider the Medicare reimbursement rate when making their decision, but must rather consider other specific factors such as the median in-network rate (Alexander, 2021). If the market is already reasonable, this arrangement would work well, but given the market failure of the system, it will only result in cementing the prices at their extreme highs (Alexander, 2021). Even with insurers being required to pick up more of the bill for air ambulance services across the board, it is unlikely that they will invest the time, effort, and money required to negotiate with air ambulance providers to bring the prices down significantly, due to the fact that air ambulance services are extremely infrequent compared to other medical services and only contribute very slightly to insurers' total expenses (Brown et al., 2021).

While the NSA is an important step forward in American healthcare economics, with these problems it is naïve to expect it to solve the problem of the market failure of the American air ambulance market. It is obvious, then, that a more pointed and robust solution is required to correct the problem. As a final solution, then, this report proposes that the US government create

and operate a federal air ambulance system, similarly to how it operates the National Railroad Passenger Corporation, also known as Amtrak.

Originally established in 1970 and beginning operations in 1971, Amtrak is a quasi-public corporation that operates the vast majority of passenger rail routes in the US (Britannica, 2015). It was founded as a federal strategy to alleviate the financial strain on passenger rail companies, allowing the routes to continue and improve in quality. In the years prior to its inception, the passenger rail industry had been declining steeply, continuously losing riders and increasing route fares. As a result, many routes were dropped to mitigate losses; while around 9000 trains were in operation in 1950, by 1970 that number had dropped to only around 450. In order to prevent the total collapse of American passenger rail travel, the government intervened by introducing Amtrak. Nearly every railway signed contracts with Amtrak, who would pay the railroads for the use of their tracks on which they would run their own passenger trains. Amtrak would also pay the railroads for the use of their facilities, such as their stations. Furthermore, Amtrak handles all of the administrative costs of the railroad, including new equipment and ticketing (Britannica, 2015).

Amtrak is managed as a for-profit company, but it is not intended to be necessarily profitable. Fares are collected from passengers to pay for operational costs, but Amtrak also receives a substantial quantity of subsidies from the government each year (Eckstein, 2022). As a government-owned corporation, however, it effectively exists in the public sector, meaning that it cannot legally seek a profit. This situation is not a negative outcome, though, since as a government entity, Amtrak exists to provide a service to the American public. Strictly speaking, any profit turned by a government entity is an inefficiency, meaning that as a public service fares are more expensive than they need to be (Technology Connextras, 2021).

This business model could be adapted for the use of air ambulances to nearly eliminate the problem plaguing the current market. If the government was to operate its own air ambulance service, it would be able to provide the service at, or even just below, cost, preventing patients from having to deal with the unexpected bills they currently face. Additionally, by charging patients the actual cost of the service, the cost to the government, and thereby the taxpayer, would be virtually nothing, so there would be no basis for political opposition, regardless of party. By rolling out the program gradually in a few cities at a time, the concept would be able to be tested to ensure proper function before full-scale investment and organization would be required. If successful, the government could require that every city or region have at least one government operated air ambulance service. This requirement would ensure access to affordable emergency medical transport for all patients. Individual patients could still elect to fly with private air ambulance companies, but the public option would always exist. By nature of having the government option available, private companies would finally have incentive and market forces to lower their prices to a reasonable level, finally stabilizing the broken market.

At the time of writing, the No Surprises Act has been in effect for less than three months. By the nature of law, it is impossible to know precisely how a bill will affect the market, severely limiting the scope of this analysis to postulation. It is probable that this act will affect the air ambulance market in additional, different, or unforeseen ways. Follow-up research should therefore be conducted after several years have passed to provide a thorough analysis of the long-term effects of the NSA. Additionally, as the purpose of this project is only to present potential solutions to the air ambulance market failure, only the proposed function of the final proposed solution has been researched. The full nuance of the law regarding government owned corporations is beyond the scope of this project. Therefore, a future project should further expand

this proposal, researching all points of legality and developing a complete and actionable program.

## **Conclusion**

Despite many proposed and attempted solutions to the market failure of the air ambulance industry, none of them have proven to be both legal or effective. The most recent solution to prohibit surprise medical bills will possibly help with the problem of extreme medical bills, but it will not be sufficient to alleviate the problems with the air ambulance market. With all of the failed solutions, it is apparent that any solution that will actually work will need to approach the problem from an entirely new angle, so having the government own and operate its own air ambulance service, similarly to how it handles Amtrak, could be a viable new solution if it were to be considered by Congress. This market failure only affects a very small proportion of Americans due to the nature of the service, but it can be a financially crippling encounter for anyone that must experience it. As a result, it is critical that a solution be found and adopted as soon as possible. The wicked nature of the problem makes finding a solution extremely difficult, which is why a non-conventional solution is very likely to be the only effective option.

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