

Misuse of the Emergency Medical Services system:

Frequent flyers and ambulance abusers

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An emergency communications center alerts an ambulance company for a call: “Ambulance 25, respond for arm pain, patient with minor left arm pain for two days now.” The ambulance responds to the call, to a patient the crew saw earlier that same week. In the United States, and around the world, the continuing problem of Emergency Medical Services (EMS) misuse and abuse has adverse effects on ambulance companies, emergency departments, and healthcare providers as a whole. Some patients call 9-1-1 on a weekly basis, with a few calling daily and a select few calling on a more than daily basis. The ‘frequent flyer,’ as these patients generally get termed because they use the EMS system so much, adds additional stress to an already stretched-thin healthcare system. Those most likely to misuse or abuse the EMS system have differing characteristics that will be discussed later, and solutions to this current problem (that seems to be growing) need to be implemented soon to prevent further problems. This paper will define and discuss the current public health problem, attempt to explain the magnitude of the problem, look at key factors that affect the problem, and finally look at current policy and pose solutions to the current problem at hand.

The problem of EMS misuse and abuse has been researched since the late 1980s. Unfortunately, the research has remained limited and data is sparse. Frequent flyers, or users that utilize the EMS system so much that they are known by name by many of the providers, are one of the major contributors to the problem. I am interested in this topic because I currently work for Centre LifeLink EMS in State College, so I have seen EMS abuse and misuse first-hand. I’ve had the same patients on multiple occasions and even picked up the same patient twice within 24 hours! As an EMS provider for going on three years now, I enjoy research in the field and have done previous research on other EMS-related topics. This past summer I presented at a symposium on issues facing rural ambulance companies that rely solely on

volunteer providers, and some of the unique challenges they currently have and will continue to face in the coming years. EMS misuse and abuse, however, is a new area of research within the field for me. As I've witnessed EMS misuse and abuse firsthand, I have often wondered how we can fix the system to prevent such abuse. This project has afforded me the opportunity to do just that, and this paper will explore not only who is most likely to misuse the system but also some solutions that may work to fix the problem.

EMS abuse and misuse are difficult to define, as even the states have differing definitions of 9-1-1 abuse or EMS over utilization. For the purposes of this paper, EMS abuse is going to be defined as "repeated use of the EMS system in a short period of time by the same individual with complaints that are deemed medically unnecessary for transport via an ambulance." EMS misuse is similar to, but more broad than, EMS abuse, such that it is defined as "utilizing the EMS system in a manner that is deemed medically unnecessary for transport via an ambulance." The main difference between EMS misuse and abuse is that misuse requires only one unnecessary utilization of an ambulance whereas abuse is repeated uses for medically unnecessary transports. A highly cited study (whose data will be referenced later in this paper) defined meeting at minimum one of the following criteria as being a medically necessary transport:

If the physician agreed with [at least] 1 of the following: 1) the patient was unable to ambulate, 2) the patient required/could have required out-of-hospital emergency care, 3) the patient required/could have required expedient transport to an ED, 4) the patient had an imminent potential for harm to self or others, or 5) transport was medically appropriate for some other reason. (Billittier et al., 1996, p. 1047)

For clarification, if a patient does not fall into any of those categories, then the transport is declared medically unnecessary.

EMS abuse and misuse are not new topics, though there does appear to be a slow increase in the number of abusers and misusers, says Gary Stead (personal communication, April 26, 2013), an EMT in Pennsylvania for over thirty years, current part-time staff member at Centre LifeLink EMS, and former Alpha Community Ambulance Service (the service in State College prior to changing its name to Centre LifeLink EMS) president. Stead says that:

“There has always been someone who calls the ambulance when they shouldn’t. That’s been going on since EMS started. However, I think that there are an increase of transports that are really not needed recently, and I think with nursing homes fearing liability and litigation, we transport their patients for the silliest of things that probably don’t even need to go to the hospital.” (personal communication, April 26, 2013)

When asked if he thought this increasing trend would continue, Stead indicated that he feared it would if there were no changes made. Adding support to his argument, a study by Weaver, Moore, Patterson, and Yealy found that from 1997 to 2007, there was an increase from 13% to 17% in the number of medically unnecessary ambulance transports nationally, as part of all ambulance transports as a whole (2011). Though not a large jump, it supports the thoughts by Stead as well as the opinions of other members of Centre County’s EMS providers.

While historical data is limited, an English study from 1998 used a panel of emergency room physicians who voted whether or not transports were medically necessary and found that 16%, or approximately 75,000, of transports were medically unnecessary by unanimous vote (Donovan, 2009). That same study found that an *additional* 20%, or approximately 93,000, of transports were ‘possibly’ medically unnecessary, meaning that at least one of the panelists

thought that the transport was not medically necessary (Donovan, 2009). A small study a year earlier focused on pediatric patients being brought into an urban, university-affiliated, children's hospital. This study found that a staggering 61%, or 56 out of the 92, of transports were not medically necessary (Camasso-Richardson, Wilde, & Petrack, 1997). One additional study, this one more recent, looked at patients brought in via ambulance to a level I trauma hospital in the Bronx, New York. 94 of the 638 sampled trauma transports, or 15%, were deemed medically unnecessary to require an ambulance transport, though the authors of this study openly stated that they used a conservative metric to determine if a transport was medically necessary or not (Cho, Eckardt, Kilbury, & Acosta, 2007). The authors of this study indicated that the results could have been as much as double if they utilized more liberal metrics (Cho et al., 2007).

While it is relatively easy to determine which calls meet the criteria to be medically necessary or not, determining costs to the EMS system (and healthcare system as a whole) is much more difficult. As different services bill at different rates (and insurances reimburse at different rates depending on geographic location), estimating costs for the entire country is a nearly impossible task. However, a recent news story on unnecessary ambulance transports in Johnson County, Kansas, found that "50% of the 35,000 911 medical calls in [the] county are not really emergencies. And for each 911 call, it costs between \$400 to \$500 to transport a person via ambulance to a hospital" (Kavilanz, 2009). Kavilanz also reported that many of these unnecessary transports were provided to patients who had inadequate or no medical insurance coverage, and the county instituted a \$30 annual fee that covers these patients, as opposed to funding improvements that the fee was originally intended for (2009).

There are many factors associated with those that abuse or misuse the EMS system. There are few biological factors that influence abuse/misuse of the EMS system (someone is not

genetically prone to abusing 9-1-1), though one study found that those under the age of 40 were more likely to misuse or abuse the EMS system (Billittier, 1996). However, there are some behavioral factors that may have biological influences. A study done in Albuquerque, New Mexico, found that those suffering from alcohol-related illness, chronic respiratory problems, and seizures were the most likely to utilize the EMS system multiple times (though they did not identify if these transports were medically necessary or not), and of those three groups, 260 of 369 patients transported at least five times were for alcohol-related problems (Brokaw, Olson, Fullerton, Tandberg, & Sklar, 1998). These three groups accounted for only 4.3% of the patients seen at the Albuquerque facilities, but were responsible for an astounding 28.4% of the total transports (Brokaw, et al., 1998). Additionally, Bryan Bledsoe, involved in EMS since 1974, says that “psychiatric conditions and substance abuse issues account for many EMS frequent flyers” (2011). While data is limited, this leads into other factors that indicate the likelihood that someone is destined to be a frequent flyer.

In terms of social determinants, one of the biggest factors in determining if someone will misuse or abuse the EMS system is homelessness (Bledsoe, 2011). Because those who are homeless generally have higher rates of mental illness and substance abuse problems, this comes as no surprise. Another social factor relating to abuse or misuse of the EMS system are those that claim to lack any other mode of transportation to the hospital. In the pediatric study, Camasso-Richardson, et al., found that 40% of the respondents felt they had no other form of transportation to make it to the hospital, though the study took place in an inner-city environment where it may be possible that less people own and operate vehicles (1997). In Billittier, et al’s., study, they found that 39% of cases surveyed did not have access to any other mode of transportation (1996). Again, however, the study looked at a primarily urban population which

may have acted as a contributing factor to this data. Another factor is education, namely the less a person has, the more likely they are to use or abuse the EMS system. This could be a lack of education in terms of medical literacy, in terms of when to utilize EMS and when not to, or even in terms of public/private schooling. One study found that of those who had a medically unnecessary transport, 84% had a high school degree or less (Billittier, et al., 1996).

Economic factors also play a large role in who will abuse or misuse the system. Billittier, et al.'s study found that those making less than \$20,000 per year constituted 84% of those that had unnecessary ambulance transports, and those that were unemployed made up a staggering 86% of the unnecessary transports (1996). There is conflicting information, however, as to whether or not the type of insurance a patient has can be a viable determinant as to if they will abuse or misuse the system or not. Billittier et al. found that those on Medicaid were much more likely to have a medically unnecessary transport as compared to private insurance and Medicare recipients (1996). However, in their ten year review of data, Weaver et al. found no correlation between type of insurance coverage and the rate of unnecessary ambulance transports (2011). They said:

The proportion of patients with private health insurance or no insurance coverage was found to be similar between medically necessary and unnecessary groups across years. This is in contrast to research suggesting that patient insurance status predicts ambulance misuse. The bulk of research examining this issue noted that patients covered by Medicaid are more frequently identified as inappropriate users of EMS. Although the proportion of all ED visits by patients covered under Medicaid changed over time, our analysis suggests that these period trends were not different between necessary and unnecessary EMS transport groups. (Weaver et al., 2011, 253)

EMT Stead, of Centre LifeLink EMS, said that “anyone can abuse the system, but in my own personal experience those on Medicaid seem to do it more often” (personal communication, April 26, 2013). Clearly, more research is needed on this specific area of this topic. One final economic factor, that could also be related to behavioral factors, is the willingness to pay one’s bill. Almost 30% of patients that were taken on medically unnecessary transports indicated that if they received a bill, they would not pay it (Billittier et al., 1996). Additionally, over 50% of those they surveyed that received medically unnecessary transports indicated that they thought the cost of the ambulance trip would be less than \$100 (Billittier et al., 1996). In reality, ambulance transports can cost hundreds of dollars.

One final area of key determinants is that of political factors. Many states have laws forbidding 9-1-1 abuse (though this does seem to be different from EMS abuse or misuse). In Pennsylvania, false reporting to 9-1-1 can land someone up to five years in prison, and even more if resources are delayed getting to someone else that is in need (Gushard, 2012). However, these laws are more applicable to someone prank calling the emergency communications center or reporting false incidents. There are no clear-cut laws against EMS abuse by a patient, though stretching the law may be an option in extreme cases.

Historically, there have been attempts to use policy to rectify the problems of EMS abuse and misuse. Dallas, Texas was at the forefront for many years to attempt to curtail unnecessary ambulance transports. In the 1970s, the Dallas Fire Department allowed their paramedics to make the decision about whether or not a call was a true emergency and if a patient actually needed transport to the hospital (Bledsoe, 2011). Unfortunately, training for paramedics in the 1970s is not up to the same level that it is now, so the policy was abandoned. In the 1980s, Dallas again attempted to cut down on the number of unnecessary transports by establishing

nurse call screening (Bledsoe, 2011). Again, unfortunately, training was not as good as it is today, and the program was stopped when someone died because a nurse refused to send an ambulance to a caller's location.

Because each state controls the EMS system in their state, there are no nationwide policies for preventing EMS abuse and misuse. One recent action taken in Fresno County, California, actually blocks EMS abusers from using ambulances and the emergency room (Herr, 2012). The county emergency communications supervisor compiled a list of the top abusers, and declared that the top two – who called 710 and 653 times respectively in 2011 – were no longer allowed to use the ambulance unless they had a legitimate emergency (Herr, 2012). While this policy may seem drastic, it appears to be a last-ditch effort to control an out of control problem. However, there are serious liability concerns associated with simply refusing to send an ambulance to someone, regardless of their abuses to the system. Unfortunately, there are currently little to no efforts being taken to control this growing public health problem in many parts of the country.

There are many policy proposals offered up to fix the problem of EMS abuse and misuse. However, as Bryan Bledsoe notes, “there are no simple solutions” to this problem (2011). Some solutions include increasing education, increasing financial responsibility, and increasing autonomy for EMS providers. As revealed in the data above, many patients who misuse or abuse the EMS system have less than a high school education, while others have mental handicaps. Simple education programs that tell people when an ambulance should be called versus when an ambulance should not be called could reduce some of the medically unnecessary transports. A solution posed by Dr. Donovan suggests adding “a nominal fee that comes from the patient's pocket” with the end goal of making them think twice before calling for an ambulance (2009).

He points to studies from other countries that had success in reducing the overutilization of ambulance services for non-medically necessary transports (Donovan, 2009). Though it did not work in Dallas in the 1970s, implementing a program that allows on-scene EMS providers to determine if a call actually warrants an ambulance ride is another viable solution. Because of the advancements in training and treatment techniques, EMS providers are now more apt than ever to decide if a patient is truly having an emergency or not. Similar to this, allowing providers to treat patients on scene, fix their ailment, and not transport them to the hospital has also been proposed. The one major sticking point with this solution, though, is the current lack of reimbursement structure for EMS providers when they do not transport a patient to the hospital. Similar to the treat-and-release solution, MedStar, the ambulance service that covers Fort Worth, Texas, has implemented a new outreach program with surprisingly good results. MedStar realized that many of their frequent flyers, especially those with chronic diseases, simply did not know how to manage their disease, but were also too poor to be able to regularly visit a doctor. MedStar established a visitation-style program to their most frequent users of EMS, and had a few specially trained medics assigned to perform weekly or bi-weekly checkups to see how the patient was doing (Matthews, 2011). At these meetings, the medic assesses the patient vital signs and also teaches them way to self-manage their disease so that they do not have to go to the hospital. According to MedStar, the program has had outstanding results, saving the ambulance company roughly \$1 million annually and the hospitals they service around \$4 million (Matthews, 2011). One final suggestion, again from Dr. Donovan, suggests using advice nurses who can provide information to patients so that they do not have to go to the hospital (2009). This would be different from the nurses used by Dallas in the 1980s as people who still wanted an ambulance would be able to get one.

I think that there is no one-size-fits-all type solution out there. I favor a combination of many of the solutions listed above. Specifically, I think that there should be better public education about when to call for an ambulance and when not to (the “ambulance is not a taxi” billboards in Miami seem to have had some success). Additionally, I think that EMS providers should be more apt and willing to treat patients on scene, and then decide if the patient still needs to go to the hospital. As mentioned above, however, there would need to be a well-established method for ambulance services to get paid for performing this public service. Finally, I also think that allowing EMS providers more autonomy and freedom to determine if a patient actually needs an ambulance or not should also be explored. However, there would need to be strict standards set up that would help providers clearly and easily determine if a patient should go to the hospital. If there is any doubt, the patient would be transported. However, I think that Bryan Bledsoe makes a very valid point when he says, “We can never solve the issue of EMS system abuse until we solve society’s ills: poverty, homelessness, mental illness, substance abuse, domestic abuse, lack of primary care and education. Virtually all patients who abuse the EMS system have one (and often many) of these issues” (2011).

To conclude, the issues of EMS abuse and misuse continue to be a public health problem by tying up ambulances that could be needed for true emergency calls and by increasing resources needed to handle the additional medically unnecessary transports. The problem has limited research, but of the research that is available, there is clear evidence that as many as one-fifth of all ambulance transports nationwide are medically unnecessary, costing millions or even billions of dollars and thousands of man-hours. There have been attempts in the past to rectify the problem, though they have generally failed or been ineffective. Currently there are limited actions being taken, but there are many viable, low-cost solutions available to fix and conquer

this problem once and for all. EMS abuse and misuse is going to be difficult to stop, but with more education, more outreach programs, and more availability to low-cost healthcare, the problem could be greatly reduced.

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