

Estimating the Cost of an EMS Transport

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One of the more difficult aspects of the research we are presenting in our poster “The Prehospital and Hospital Costs of Emergency Care for Frequent Emergency Department Patients” was estimating the cost of EMS Transport for this group. This was particularly important for our study for 2 reasons:

- 1) The population we were studying, patients who frequently visit the Emergency Department for care, were transported by EMS almost 70% of the time, in stark contrast to 28% of the time for non-frequent patients. The 3.25% of patients that were identified as frequent patients accounted for over 30% of the total EMS transports.
- 2) Our ED serves a large, rural area in which transport times are often over 1 hour each direction. In this setting, the variable costs that include material resources and personnel, and the opportunity costs of having an ambulance unable to respond while transporting, are magnified.

Studies have examined the cost of EMS systems as a whole¹, but peer-reviewed articles on the cost of an individual transport are lacking. A recent Government Accountability Office report² on the cost of transport of Medicare patients found costs varying from \$224 to \$2,204 per transport, with the highest costs for agencies with lower volumes, rural areas, higher intensity transports, and higher government subsidies. With the wide variation, we felt an estimate of transport using a calculation based on these figures would be inaccurate.

The difficulty of obtaining a true estimate of the cost of a single additional call stems from the fact that most EMS costs are fixed and expenditures to the EMS system are minimal from on individual transport. However, any measure of EMS cost should account in some way for costs associated with operating a capable EMS Agency. We chose a different approach: to estimate the actual cost to the payer by using the 2012 Medicare Reimbursement formulas and transport distance for each visit. For the publicly insured, this figure represents an accurate estimate of the cost of frequent EMS use to the payer. For the uninsured and privately insured, it serves only as an approximation.

Despite the difficulty of obtaining an exact figure for the cost of frequent EMS use, our estimate shows that this is an expensive method of getting to the hospital and obtaining care. Beyond the monetary value of a transport, frequent EMS use comes with additional, less tangible costs. In our area, depending on the chief complaint of the caller, many calls receive a response of multiple units, including a Fire Engine and Medic Car. The opportunity cost of having these units unavailable to respond to another emergency is unknown and would be very difficult to quantify, but is certainly worth taking into consideration. Additional considerations, such as the impact of arriving via ambulance on treatment and admission decisions, may be relevant as well.

We hope our estimate, along with the less tangible effects associated with frequent EMS use, will serve as a source of justification for designing new interventions aimed at improving health and lowering the costs associated with the population we studied. We anticipate that policymakers can take this information into account when developing new efforts to both improve outcomes and cut costs. A recent review³ showed promise for many such approaches, and we hope to see more alternatives to this pattern of EMS and ED use available in the near future.

¹ Lerner EB, et al. An economic toolkit for identifying the cost of emergency medical services (EMS) systems: detailed methodology of the EMS Cost Analysis Project (EMSCAP). *Acad Emerg Med*. 2012 Feb;19(2):210-6.

² United States Government Accountability Office. Ambulance Providers: Costs and Medicare Margins Varied Widely; Transports of Beneficiaries have Increased. [Internet]. 2012 [Cited 2015 Sept 1]. Available from: <http://www.gao.gov/products/GAO-13-6.37>.

³ Althaus F, Paroz S, Hugli O, et al. Effectiveness of Interventions Targeting Frequent Users of Emergency Departments: A Systematic Review. *Ann Emerg Med* 2011;58:41,52.e42.