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# Abstract – Telephone Triage

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## The Impact of Telephone Triage on Healthcare Costs – An analysis of Caller Intent and Outcomes.

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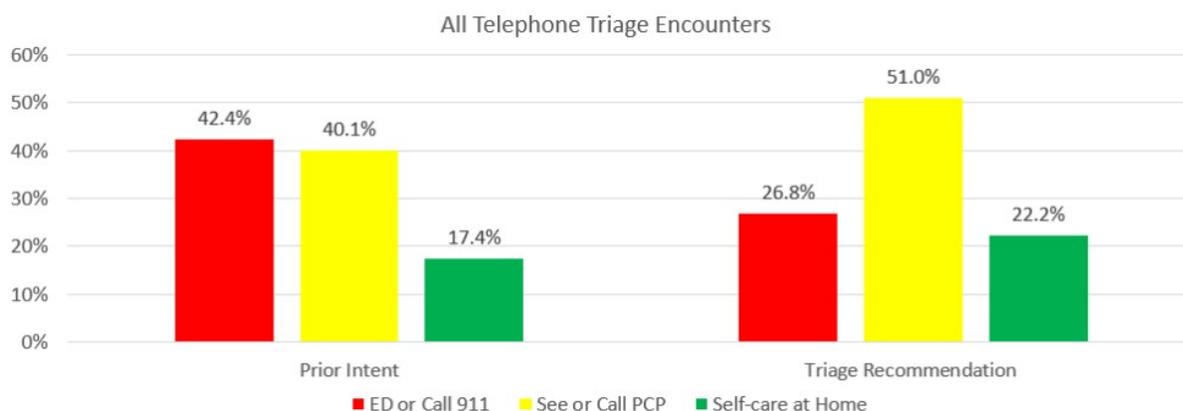
**Background.** Telephone triage is performed in medical call centers, also called nurse advice lines. A telephone triage nurse talks to a patient by phone and asks detailed questions about the patient's injury, problems, or symptoms. The nurse uses guidelines, typically in an electronic format, as a script and for decision-support. At the end of the telephone triage encounter the nurse provides a recommendation for level of care (disposition), education (health information), and care advice. Telephone triage in medical call centers has been shown to provide safe and effective care with additional benefits of patient and provider satisfaction. This study investigates the potential impact on healthcare costs of patient re-direction to different levels of care from telephone triage.

**Methods:** People who called the [TeamHealth Medical Call Center](#) in calendar 2017 were asked before triage their prior intent, that is, what would they have done if they had not phoned the call center. Three responses were allowed and recorded in the call center software: ED (emergency

department) or 911, See or Call Doctor, or Self-Care. The triage nurses utilized [Schmitt-Thompson Clinical Content](#) telephone triage guidelines for decision support. The nurse-determined triage dispositions was recorded in the call center software for each encounter.

**Results.** Prior intent survey data was successfully collected for 202,021 telephone triage encounters. There were 116,384 (57.6%) pediatric encounters (age less than 18 years) and 85,637 (42.4%) adult encounters (18 years and older). Parents, calling on their children's behalf, reported that they would have called 911 or gone to the emergency department (40.1%), called or seen their doctor (40.6%), or cared for their child at home (19.3%). Adult callers, calling on their own behalf, reported that they would have called 911 or gone to the emergency department (45.7%), called or seen a doctor (39.5%), or treated themselves at home (14.8%). For 61.9% of callers with a prior intent of Call 911 or ED, the triage nurse recommended a lower level of care. Re-direction to a lower level of care occurred more often for pediatric encounters (74.0%) than adult encounters (47.6%). The following cost assumptions were used in calculating potential cost savings: \$752 per ED visit, same cost per ED visit with 911 transport, \$166 per primary care doctor visit, \$0 for self care at home, \$20 per telephone triage encounter, and callers always followed triage recommendations given by triage nurse. The average estimated savings were \$84.58 dollars per call. Seventeen percent of cases in which people would have treated themselves or their children at home were given an emergency disposition by the triage nurse.

**Conclusion.** In nearly two thirds of call center encounters in which the initial caller intent was to seek emergency care, the triage recommendation was non-emergent care. In one in six encounters in which the initial caller intent was self care at home, the triage recommendation was emergency care. Using broad assumptions, including that call-center triage recommendations are followed compliantly, this study suggests that there could be substantial potential improvements in patient safety and cost savings for the health care system.



The chart compares prior intent (pre-disposition) with triage recommendation (disposition outcome) for all telephone triage encounters (all ages).

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