



Topic Brief: Support Role of Community Paramedics in Transitional Care

Date: 5/12/2022

Nomination Number: 0976

Purpose: This document summarizes the information addressing a nomination submitted on May 6, 2022, through the Effective Health Care Website. This information was used to inform the Evidence-based Practice Center (EPC) Program decisions about whether to produce an evidence report on the topic, and if so, what type of evidence report would be most suitable.

Issue: This topic was nominated by a healthcare data analytics company that is interested in evaluating the benefits and harms, cost effectiveness, and potential unintended consequences of acute care services by provided by community paramedics. The nominator hopes that a systematic review would ultimately support the expansion of community paramedicine programs and help advocate for a change in payment coverage of these programs by health insurers.

Findings: The AHRQ EPC Program will not develop a new evidence review on this topic because we found two systematic reviews that address the scope of the nomination.

Background

Emergency department (ED) crowding is a widespread problem that negatively impacts care quality and can cause patient harm.¹ In 2019, there were over 150 million ED visits in the United States, and 15.5 percent of them were brought in by 911 response ambulance.² Evidence shows that approximately 37 percent of all ED patients could have been triaged to less acute care settings.³ One retrospective analysis of over 3,000 patients transported to emergency rooms of three different hospitals found that nearly 80 percent did not require hospital admission and over a quarter required no emergency treatment.³

Until recently, one of the causes behind inefficient and costly ED care was misaligned payment incentives for 911-based emergency services, which required transporting patients to a hospital to qualify for reimbursement even when a lower acuity, less costly destination may have been appropriate.³ In 2019, in an effort to incentivize more efficient and patient centered acute care, the Centers for Medicare and Medicaid Services (CMS) launched the Emergency Triage, Treat, and Transport (ET3) initiative.⁴ The ET3 model allowed paramedic service providers to triage individuals to appropriate care settings or deliver on-site or telehealth-based care.

Community paramedicine is a relatively new healthcare model, which allows expanded roles of paramedics and emergency medical technicians (EMTs). They provide primary healthcare and

preventive services, such as blood draws, wound care, and vaccinations.¹ Early evidence of the effectiveness of community paramedicine programs found that they improved patient satisfaction, reduced levels of ED and hospital care utilization, and potentially improved patient health outcomes, particularly among high risk and elderly patients.⁵⁻⁷ Despite these encouraging findings, examinations of the broader role of paramedicine services within primary care identified several key issues that must be addressed to ensure sustained effectiveness of the ET3 model.⁸ These areas include ensuring the delivery of safe and appropriate patient-centered care, implementing performance metrics to monitor and incentivize quality care, addressing variability in state policies, and minimizing opportunities for potential misuse of paramedic services for nonemergent low acuity conditions.

Last year, CMS announced their selection of 184 participant organizations that will receive agency’s funding to participate in the ET3 model experiment.⁹ Evidence generated during this process should pave the way towards addressing the above questions.

Scope

What are the effectiveness and harms of community paramedic services?

Table 1. Questions and PICO’s (population, intervention, comparator, outcome)

Questions	Community paramedic services, effectiveness, and harms
Population	Adults (>18 years). Subgroups: elderly/frail patients, palliative care patients
Interventions	Community paramedicine (i.e., emergency medical service agencies providing care to low-acuity patients outside of the emergency department)
Comparators	Standard care (i.e., emergency medicine); none
Outcomes	Health outcomes, patient satisfaction, provider satisfaction, emergency services utilization

Assessment Methods

See Appendix A.

Summary of Literature Findings

We found two recent systematic reviews that address the nomination: a 2019 systematic review of community paramedicine and emergency medicine services mobile integrated health care interventions in the United States found that these programs were generally successful at reducing emergency service utilization;¹⁰ and a 2021 systematic review on the role of community paramedicine in healthcare delivery for elderly patients demonstrated evidence that community paramedic programs, which involved assessment, referral, education, and communication, had a positive impact on patient health and the healthcare system.⁷

See Appendix B for detailed assessments of all EPC selection criteria.

Summary of Selection Criteria Assessment

Emergency department overutilization is a widespread problem. The nominator would like to see the development of a new systematic review on the effectiveness and harms of community paramedic services to ultimately support the expansion of such programs and help advocate for a

¹ Guo B, Corabian P, Yan C, et al. Community Paramedicine: Program Characteristics and Evaluation [Internet]. Edmonton (AB): Institute of Health Economics; 2017 Sep. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK549096/>

change in payment coverage of these programs by health insurers. We found two systematic reviews that address the scope of the nomination.

Please see Appendix B for detailed assessments of individual EPC Program selection criteria.

References

1. Kelen G, Wolfe R, D’Onofrio G, et al. Emergency department crowding: the canary in the health care system. *NEJM Catalyst*. 2021 Nov 3, 2021.
2. Cairns C, Kang K. National Hospital Ambulatory Medical Care Survey: 2019 Emergency Department Summary Tables. 2022. doi: <https://dx.doi.org/10.15620/cdc:115748>. PMID: cdc:115748.
3. Emergency Department Crowding: High-Impact Solutions. Emergency Medicine Practice Committee Report. 2016. Accessed on May 18, 2022 at https://www.acep.org/globalassets/sites/acep/media/crowding/empe_crowding-ip_092016.pdf
4. Centers for Medicare & Medicaid Services (CMS). Emergency Triage, Treat, and Transport (ET3) Model Fact Sheet. 2019. Accessed on May 18, 2022 at <https://www.cms.gov/newsroom/fact-sheets/emergency-triage-treat-and-transport-et3-model>
5. Gregg A, Tutek J, Leatherwood M, et al. Systematic Review of Community Paramedicine and EMS Mobile Integrated Health Care Interventions in the United States. *Population Health Management*. 2019;22(3):213-22. doi: <https://doi.org/10.1089/pop.2018.0114>. PMID: 30614761.
6. Thurman W, Moczygamba L, Tormey K, et al. A scoping review of community paramedicine: evidence and implications for interprofessional practice. *J Interprof Care*. 2021 Mar-Apr;35(2):229-39. doi: <https://doi.org/10.1080/13561820.2020.1732312>. PMID: 32233898.
7. van Vuuren J, Thomas B, Agarwal G, et al. Reshaping healthcare delivery for elderly patients: the role of community paramedicine; a systematic review. *BMC Health Serv Res*. 2021 Jan 6;21(1):29. doi: <https://doi.org/10.1186/s12913-020-06037-0>. PMID: 33407406.
8. Munjal K, Margolis G, Kellermann A. Realignment of EMS Reimbursement Policy: New Hope for Patient-Centered Out-of-Hospital Care. *Jama*. 2019 Jul 23;322(4):303-4. doi: <https://doi.org/10.1001/jama.2019.7488>. PMID: 31225862.
9. CMS announces final 184 participants in the Emergency Triage, Treat, and Transport Model. *Healthcare Finance*.
10. Gregg A, Tutek J, Leatherwood MD, et al. Systematic Review of Community Paramedicine and EMS Mobile Integrated Health Care Interventions in the United States. *Popul Health Manag*. 2019 Jun;22(3):213-22. doi: <https://doi.org/10.1089/pop.2018.0114>. PMID: 30614761.
11. Costs of Emergency Department Visits in the United States, 2017. Agency for Healthcare Research and Quality. doi: <https://www.hcup-us.ahrq.gov/reports/statbriefs/sb268-ED-Costs-2017.jsp>.
12. Community Paramedicine, Evaluation Tool. U.S. Department of Health and Human Services HRSA. doi: <https://www.hrsa.gov/sites/default/files/ruralhealth/pdf/paramedicevaltool.pdf>.

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Conflict of Interest: None of the investigators have any affiliations or financial involvement that conflicts with the material presented in this report.

Acknowledgements

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This report was developed by the Scientific Resource Center under contract to the Agency for Healthcare Research and Quality (AHRQ), Rockville, MD (Contract No. HHS-290-2017-00003C). The findings and conclusions in this document are those of the author(s) who are responsible for its contents; the findings and conclusions do not necessarily represent the views of AHRQ. No statement in this article should be construed as an official position of the Agency for Healthcare Research and Quality or of the U.S. Department of Health and Human Services.

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Appendix A: Methods

We assessed nomination for priority for a systematic review or other AHRQ Effective Health Care report with a hierarchical process using established selection criteria. Assessment of each criteria determined the need to evaluate the next one. See Appendix B for detailed description of the criteria.

Appropriateness and Importance

We assessed the nomination for appropriateness and importance.

Desirability of New Review/Absence of Duplication

We searched for high-quality, completed or in-process evidence reviews published in the last three years July 2019 to July 2022 on the questions of the nomination from these sources:

- AHRQ: Evidence reports and technology assessments
 - AHRQ Evidence Reports <https://www.ahrq.gov/research/findings/evidence-based-reports/index.html>
 - EHC Program <https://effectivehealthcare.ahrq.gov/>
 - US Preventive Services Task Force <https://www.uspreventiveservicestaskforce.org/>
 - AHRQ Technology Assessment Program <https://www.ahrq.gov/research/findings/ta/index.html>
- US Department of Veterans Affairs Products publications
 - Evidence Synthesis Program <https://www.hsrd.research.va.gov/publications/esp/>
- Cochrane Systematic Reviews <https://www.cochranelibrary.com/>
- PROSPERO Database (international prospective register of systematic reviews and protocols) <http://www.crd.york.ac.uk/prospéro/>
- PubMed <https://www.ncbi.nlm.nih.gov/pubmed/>

Appendix B. Selection Criteria Assessment

Selection Criteria	Assessment
1. Appropriateness	
1a. Does the nomination represent a health care drug, intervention, device, technology, or health care system/setting available (or soon to be available) in the United States?	Yes.
1b. Is the nomination a request for an evidence report?	Yes.
1c. Is the focus on effectiveness or comparative effectiveness?	Yes.
1d. Is the nomination focus supported by a logic model or biologic plausibility? Is it consistent or coherent with what is known about the topic?	Yes.
2. Importance	
2a. Represents a significant disease burden; large proportion of the population	In 2019, there were over 150 million ED visits in the United States, and 15.5 percent of them were brought in by 911 response ambulance. ² Evidence shows that approximately 37 percent of all ED patients could have been triaged to less acute care settings. ³ One retrospective analysis of over 3,000 patients transported to emergency rooms of three different hospitals found that nearly 80 percent did not require hospital admission and over a quarter required no emergency treatment. ³
2b. Is of high public interest; affects health care decision making, outcomes, or costs for a large proportion of the US population or for a vulnerable population	Yes. In 2017, there were 144.8 million total emergency department visits in the United States, which cost \$76.3 billion. ¹¹
2c. Incorporates issues around both clinical benefits and potential clinical harms	Yes.
2d. Represents high costs due to common use, high unit costs, or high associated costs to consumers, to patients, to health care systems, or to payers	Yes. Yes. In 2017, there were 144.8 million total emergency department visits in the United States, which cost \$76.3 billion. ¹¹
3. Desirability of a New Evidence Review/Absence of Duplication	
3. A recent high-quality systematic review or other evidence review is not available on this topic	No. We found two systematic reviews that cover the scope of the nomination. ^{7, 10}

Abbreviations: ED=emergency department.