



Ergen Family Chair In Pediatric Outcomes Research Pilot Program Final Grant Report

Project Title: **Law Enforcement Involvement During Pediatric Emergency Department Encounters and Related Clinical Outcomes**

Organization: Children's Hospital Colorado, University of Colorado

Date: April 30, 2025

Project Summary

Law enforcement officers (LEOs) are often present in treatment spaces but their role in the emergency department (ED) is vague and variable. LEO presence raises questions about patient privacy and autonomy, medical and legal priorities, and the rights of unaccompanied children seeking medical care. Existing evidence is qualitative and focuses only on adult patients. Therefore, the prevalence of LEOs in the ED and associated patient and encounter characteristics is unknown, and pediatrics perspective and context are lacking.

This single center pilot study sought to 1) develop a novel electronic health record (EHR)-based algorithm to retrospectively identify and quantify the presence of LEOs during pediatric ED encounters and 2) explore pediatric clinician perspectives about and experiences with LEO presence in the pediatric ED via in depth interviews.

Major accomplishments during the study period include:

1. The successful development and validation of a novel keyword algorithm that identifies mention of law enforcement involvement in free text provider notes in the EHR. Our team then incorporated this deterministic keyword algorithm into a probabilistic multivariable model. The final model was first tested on an enriched population with higher prevalence of LEOs, then validated on a general population test set. The final model detects LEO presence with 90% sensitivity, 92% specificity, and 91% accuracy (AUC-PR 0.85). These findings were reported in a poster presentation at a national conference.
2. The completion of 27 qualitative clinician interviews, and dissemination of preliminary findings at a national conference including an oral presentation and panel discussion.
3. The establishment of a collaboration with local law enforcement and completion of 13 LEO interviews.
4. Dr. Abrams leveraged this pilot data in applying for next step funding and was awarded a 2.25-year AHRQ PEDSnet Scholars award to continue building on this work by testing the model at other sites and interviewing pediatric patients and families.

Currently, a manuscript describing the model development and validation is being submitted to journal for publication. Final analysis of the 27 interviews is nearing completion with manuscript submission expected by the end of this calendar year.

Goals & Objectives

The project's original aims were:

1. Quantify LEO presence in pediatric ED encounters using a keyword-based algorithm and probabilistic model.
 - **Status: Met.** We developed and validated a reliable keyword algorithm that accurately and reliably identifies LEO presence in the EHR.
2. Identify key clinical outcomes impacted by LEO presence as perceived by pediatric emergency medicine (PEM) physicians and nurses.
 - **Status: Met.** We completed 27 semi-structured interviews (exceeding the target of 20–24), capturing diverse clinician perspectives.

Both aims were fully achieved as planned, with no major modifications required.

Activities & Outcomes

We completed Aim 1 by creating and validating the deterministic keyword algorithm in collaboration with the Analytics Resource Center and Children’s Hospital Colorado Health Equity and Quality program. We manually reviewed 661 charts for mentions of LEO presence and tested the algorithm and model against this reference set. The algorithm demonstrated 100% sensitivity however 54% specificity. The study team, then developed a multivariable model including the keyword algorithm to improve specificity (guided by ACCORDS biostatistics core director Dr. Kathryn Colborn and biostatistician Sharon Scarbro). The final model included 21 variables and detected LEO presence in the study cohort with 90% sensitivity, 92% specificity, and 91% accuracy.

For Aim 2, we conducted 27 interviews with PEM physicians, nurses, and ED behavioral health staff, surpassing our recruitment goal. Analysis has yielded rich insights into perceived impacts of LEO presence on patient privacy, care delivery, and clinician workflow. We are finalizing data analysis and preparing a manuscript for submission by year-end. Preliminary results were presented at a national conference as an oral presentation. In addition, Dr. Abrams established a collaboration with local law enforcement and completed 13 interviews with LEOs.

Dissemination

Project outputs include:

- **Manuscripts:** One manuscript from Aim 1 is in final formatting edits (to be submitted next month); one manuscript from Aim 2 is in preparation (to be submitted by end of calendar year).
- **Presentations:**
 - *Identifying Law Enforcement Presence in Pediatric Emergency Department Encounters: A Novel Key-Word Algorithm.* Poster presentation. Pediatric Academic Societies, May 2024.
 - *“I don’t have any idea where their authority stops and our authority starts”: A Qualitative study of clinician perspectives on law enforcement in the pediatric emergency department.* Oral presentation. Pediatric Academic Societies, May 2025.
- **Future Dissemination:** Both manuscripts will be submitted to peer-reviewed journals and shared with collaborating stakeholders by the end of this calendar year (2025).

Partnerships

Key collaborators included the Analytics Resource Center, Children’s Hospital Colorado Health Equity and Quality program, ACCORDS Biostatistics & Analytics Core, and clinical leadership within the pediatric ED. We also engaged PEM physicians and nurses as interview participants, fostering clinician investment in the study outcomes and potential practice implications. Dr. Abrams also used this time to foster a collaboration with

local law enforcement who are now committed to participating in future qualitative interviews and other research collaborations.

Budget Summary

The grant funds were allocated as follows:

- Personnel (Qualitative Analyst): \$25,807.79 (\$19,061.94 salary + \$6,745.85 benefits)
- Interview participant compensation: \$643.87
- Transcription services: \$3,545.47

A total of \$29,997.13 was spent leaving a remaining balance of \$2.87. There were no significant variances from the original budget plan: minor variances included the PI using a group license for coding software and shared recording devices, allowing for small funds to be repurposed for providing food for LEO interviews (LEOs are unable to accept gift card compensation).

Lessons Learned & Sustainability

Key challenges included scheduling interviews amidst clinical staffing constraints and navigating variable institutional policies regarding LEO documentation. Flexibility in interview timing and close collaboration with ED leadership enabled successful recruitment. The project demonstrated the feasibility of identifying LEO presence in the EHR and underscored clinician interest in addressing this issue. Moving forward, the algorithm will enable large scale longitudinal data collection. Our team plans to leverage these findings along with multi-site pilot data (currently collecting data) in an AHRQ K08 application to expand this work across multiple institutions and develop interventions to support safe, equitable care for patients with law enforcement involvement in the pediatric ED.