

Value Added

Center for Value-Based Care Research

Fall 2023

Welcome to this quarter's issue of Value Added!

The Center for Value-Based Care Research (CVCR) conducts research on interventions that improve value in healthcare. With a mission of making quality healthcare possible for all Americans by conducting research to identify value in healthcare, CVCR seeks to deliver the right care, at the right time, to the right patients, at lower costs.



Featured Publications

Physical therapy provision for patients with pneumonia in US hospitals

Johnson JK, Young DL, Guo N, Tereshchenko LG, Martinez M, Hohman JA, Rothberg MB.
Published in J Hosp Med in Sept. 2023

Impact of Pediatric Messages in a Large Health System From 2019 to 2021

Tang MC, Martinez KA, Rothberg MB, Giuliano K, Pfoh ER.
Published in JAMA Pediatr in Aug 2023

In October, the AMBULATE study team (pictured left) celebrated the enrollment of 100 patients! A special thank you to the research coordinators and mobility technicians for their hard work on this study!

CELEBRATIONS

- Phuc Le, PhD received a \$3.2 million grant from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) for her project, Using Patient-Level Decision Modeling to Improve Use of Treatments for Alcohol Use Disorder. The project proposes to develop, validate, and apply a computer simulation model to estimate and compare the lifetime benefits of various AUD treatments and to augment an existing decision aid with such information to support shared decision-making. Results from this project will help to close the treatment gap by increasing their use, hence improving the medical care and quality of life for millions of Americans suffering from AUD. Congratulations Phuc!
- Katie Martinez, PhD, was elected as a trustee at the Society for Medical Decision Making for 2023-2024.
- Katie Martinez, PhD, won the Clinician Investigator of the Year for Midwest SGIM
- Matt Pappas, MD, was runner up for Best Overall Abstract at Perioperative Medicine Summit.

FEATURED PUBLICATIONS

Physical therapy provision for patients with pneumonia in hospitals (J Hosp Med) & Association between physical therapy frequency and postacute care for a national cohort of patients hospitalized with pneumonia (J Hosp Med)

Joshua Johnson, PT, DPT, PhD

What did you find most interesting or important when studying physical therapy visits in hospitalized patients with pneumonia?



It just so happened that we had these data for patients with pneumonia. What I would love to say (though obviously can't without more of the right data) is that the results are applicable for more than just these patients with pneumonia. That is—when thinking about the two studies together—patients in the hospital receive physical therapy or not without a lot of clinical justification, but that having more frequent physical therapist visits is associated with discharging home.

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At this point, the former is more important than the latter in terms of acute care physical therapist practice. We need to identify whether there is wasteful utilization of physical therapists' time as a scarce resource in the acute inpatient setting.

What were some limitations that you found?

A primary limitation in the data was our inability to understand the duration or content of individual physical therapist visits. Since we used claims data, we knew only on which days a visit was charged. In the name of understanding the relative value of physical therapist interventions, we need better data about what specifically the physical therapists do when taking care of patients.

Moving forward, how can this topic be studied further?

We need to study whether these patterns hold up in other patient populations. We also need to understand whether it is "skilled" intensive physical therapy that leads to the outcomes we observed, or if it is simply just getting out of bed on occasion that helps patients to go home. If the latter, there are implications about the type of provider needed for the intervention (see, for example, Dr. Rothberg's R01-funded AMBULATE trial, which is testing the effect of a dedicated "mobility tech" on outcomes like function and discharge disposition).

How could the results of these papers impact patient care on a long-term scale?

One might argue that the two primary implications are 1) there are not enough patients getting PT while in the hospital and 2) we should hire more PTs to provide more treatments. That might be the case, but I don't think it is and our results could have other explanations. Among them consider instead, 1) there are not enough patients getting out of bed while in the hospital and 2) we need to enable a culture and workflow that promote more patients getting out of bed with the most appropriate provider.

For now, I think hospitals could adopt either of those two alternative explanations/plans and patients would get better outcomes, but we need more data to know which is more efficient.

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FEATURED PUBLICATION

Trends, Distribution, and Impact of Pediatric Messages in a Large Health System From 2019 to 2021, *JAMA Pediatr*

Maria Tang, MD

What prompted you to study pediatric messaging?

Before starting the research fellowship, I had participated in a quality improvement project regarding MyChart medical advice messages and our office workflow. The outcomes of our project helped improve our message response rate to patients and also improved caregiver satisfaction. It was exciting to see how addressing workflows related to messaging could have such a positive impact on patient and caregiver satisfaction.

Furthermore, during the pandemic, many providers started noticing an increase in message burden, and survey results shared during staff meetings found that inbox time may be contributing to burnout. I was prompted by these events to study pediatric messaging to understand the messaging burden and how we can use this information to develop solutions to benefit providers.

What did you learn?

I've learned that research takes a lot of collaboration, patience, and hard work. This CVCR research fellowship taught me the whole process of research – from crafting a clinical question, to gathering data, to writing a manuscript, to rewriting a manuscript (several times), and finally submitting a manuscript.

From our study, average message volume increased 230% from 2019-2021. Pediatricians in the high-volume group received three times the medical advice messages as the low-volume group. (The study included 72 providers and 115,273 patients with 450,083 visits. Visit volume decreased from 643 in quarter 4 to 549 in quarter 12, and the number of messages increased from 112 messages per provider in quarter 4 to 278 in quarter 12.



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We categorized 63% of providers as low-volume (105 messages per quarter), 29% as medium-volume (237 messages per quarter), and 8% as high-volume (371 messages per quarter). Compared to low-volume providers, medium and high-volume providers spent 7.5 additional hours working outside of clinical sessions each quarter.

Was there anything unexpected or novel about your findings?

We used group-based trajectory modeling in a novel way to categorize pediatricians into groups based on the number of messages they received per quarter. It was unexpected to see that only 8% of pediatricians were receiving almost 3 times the messages compared to the low-volume group pediatricians.

What do your findings indicate for future work either in your research or within the clinical setting?

I believe our research can help health systems allocate resources to support a pediatrician’s ability to handle their patient messages on top of their clinical workload.

So far, our pediatric leadership has already used our research to leverage solutions to support pediatricians with high message volume. It will also be interesting to see if charging for messages changes the volume of patient messages sent.

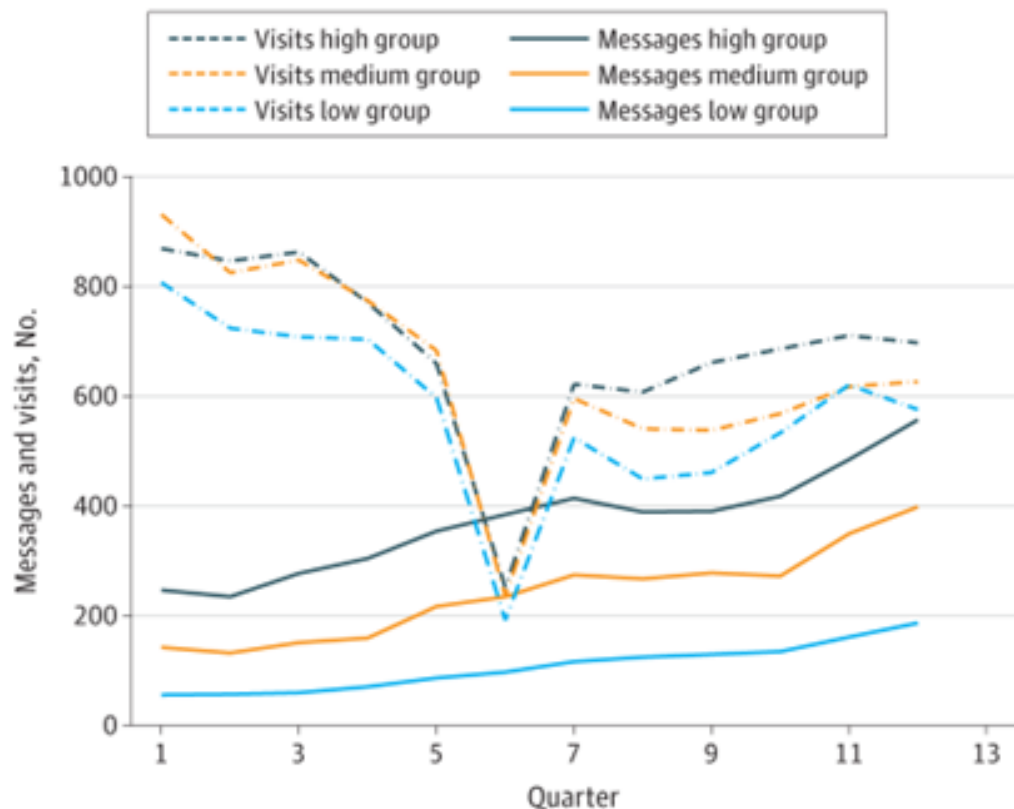


Figure 1. Mean Number of Medical Advice Messages and Visits per Quarter Between 2019 and 2021 by Group

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RECENT PUBLICATIONS

- Pappas MA, Auerbach AD, Kattan MW, Blackstone EH, Rothberg MB, Sessler DI. **Consequences of preoperative cardiac stress testing-A cohort study.** *J Clin Anesth.*
- Pappas MA, Auerbach AD, Kattan MW, Blackstone EH, Rothberg MB, Sessler DI. **Diagnostic and prognostic value of cardiac stress testing before major noncardiac surgery-A cohort study.** *J Clin Anesth.*
- Johnson JK, Hamilton AC, Hu B, Pack QR, Lindenauer PK, Fox RJ, Hashmi A, Siegmund LA, Burchill CN, Taksler GB, Goto T, Stilphen M, Rothberg MB. **Assisted ambulation to improve health outcomes for older medical inpatients (AMBULATE): study protocol for a randomized controlled trial.** *Trials.*
- O'Toole R, Martinez KA, Rothberg MB, et al. **Antibiotics on Demand: Advances in Asynchronous Telemedicine Call for Increased Antibiotic Surveillance.** *Clin Infect Dis.*
- Skovira CM, Pfoh E, Thompson A, Rish J. **Closing the Mental Health Access Gap Through Novel Analytics.** *Cureus.*
- Bharmal N, Sack E, Guo N, Alejandro-Rodriguez M, Holmes JC, Modlin C, Pfoh ER. **Healthcare and Social Needs Assessment and Response Quality Among Black Men.** *J Community Health.*
- Berenson CS, Lashner B, Korman L, Hohmann E, Deshpande A, et al. **Prevalence of comorbid factors in patients with recurrent Clostridioides difficile infection in ECOSPOR III, a randomized trial of an oral microbiota-based therapeutic.** *Clin Infect Dis.*
- Deshpande A, Walker R, Schulte R, et al. **Reducing antimicrobial overuse through targeted therapy for patients with community-acquired pneumonia: a study protocol for a cluster-randomized factorial controlled trial (CARE-CAP).** *Trials.*
- Patterson WM, Fajnzylber J, Nero N, Hernandez AV, Deshpande A. **Diagnostic prediction models to identify patients at risk for healthcare-facility-onset Clostridioides difficile: A systematic review of methodology and reporting.** *Infect Control Hosp Epidemiol.*
- Wollney EN, Vasquez TS, Fisher CL, et al. **A systematic scoping review of patient and caregiver self-report measures of satisfaction with clinicians' communication.** *Patient Educ Couns.*
- Gasoyan H, Fiala MA, et al. **Disparities in Multiple Myeloma Treatment Patterns in the United States: A Systematic Review.** *Clin Lymphoma Myeloma Leuk.*

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