

Demonstrate Impact of Design and Evaluation Choices on Estimation of Effectiveness of Transition of Care Program

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Healthcare interventions are frequently implemented without evaluation in mind. When the time comes to measure effectiveness, this creates analytical challenges, and the choices made during the evaluation can introduce limitations on the interpretation of final results. We describe the challenges faced during an evaluation of hospital-based transition-of-care (TOC) program, and show the impact of these challenges on our ability to effectively evaluate the program, through an example.

The TOC program was implemented at Sutter Health, a large healthcare system in northern California. We developed an EHR based inclusion/exclusion criteria to mimic the care team's process of identifying patient hospitalizations for intervention. To understand extent of disagreement, we compared patient hospitalizations that actually received an intervention (TOC intervention cohort) with hospitalizations identified using EHR based criteria. We then used a matching algorithm to create controls for three treatment cohorts; (T-1) a cohort identified using only EHR based criteria (N=1,709), (T-2) a subset of TOC intervention cohort that overlaps with EHR based criteria (N=412) and (C-3) the actual TOC intervention cohort (N=620).

The cohort identified using EHR based criteria captured only 66% of the actual interventions. This introduced challenges for defining controls post hoc for valid comparison. Although, we could identify matched controls for 92% of treatment cohort T-1, only 24% of actual interventions qualified on EHR based criteria. For T-2, the matching algorithm identified controls for 89% of treatment, but this left out 34% of actual interventions. Finally, when we considered cohort T-3, the differences between EHR based criteria and the actual intervention cohort became evident as the matching algorithm found controls for only 71% of those treated.

In our study, a lack of agreement between the EHR based cohort and actual intervention criteria made a confident evaluation nearly impossible. Although these TOC interventions were beneficial to individual patients, we were unable to demonstrate measurable outcomes due to study design limitations. We believe, methods to illustrate and showcase the patient stories and individual patient outcomes are warranted in situations where delivering the best clinical care does not lend itself to rigorous evaluation.