

## Understanding the Effect of Enrollment Method on Utilization of Emergency Department Virtual Follow-up

Category of submission (select as many as apply):

Reducing Disparities

Resident/Fellow Project

IOM Domains that this project addresses (select as many as apply)

Safety

Patient Centered

Effective

Equitable

Please share how you defined your project. Consider addressing the questions below. (Max 500 Words)

What was the identified Quality Gap? - What was the improvement target? - What was the timeline of the project? - Who were the stakeholders? - What was the stakeholders' input? - What was the method for collecting stakeholder input? - What was the potential for significant impact to the institution? - What was the potential for significant impact to society?

Rapid ED based follow-up in a virtual clinic was first implemented at our institution in September 2020 and has been continually in operation since this time. Our post emergency care virtual clinic (ProPER Care) was staffed by either Emergency Medicine (EM) or dual trained Emergency Medicine and Internal Medicine (EM-IM) physicians. Virtual clinics are generally scheduled for Monday, Wednesday, and Friday from 9 a.m. until 5 p.m. This clinic was well advertised to Emergency Department staff and saw high numbers of ED physician-initiated referrals in its opening months. Over time, however, optimizing enrollment and utilization of this novel virtual clinic presented challenges. Referrals to the virtual clinic were inconsistent, and several ProPER Care providers anecdotally noted that the time to follow up and no-show rate were variable. One factor contributing to this appeared to be lack of familiarity with the virtual clinic as a follow-up option amongst many different providers in the Emergency Department. In an effort to increase patient recruitment to our clinic and thus maximize the potential impact for individual patients, an opt-out enrollment strategy was implemented in February 2021. This meant that every Emergency Department patient discharged was automatically referred to the ProPER Care clinic, unless the discharging physician chose to discontinue the referral. Based on prior review of medical literature, opt-out enrollment strategies have previously been demonstrated to increase recruitment of patients to medical research studies and disease screening and prevention initiatives (1-4), although the effect has been less consistent with respect to deceased organ donation enrollment (5). The aim of this QI project was to compare the effect of opt-out enrollment on time to follow up and no-show rate in ProPER Care Clinic. To our knowledge, there have been no previous studies evaluating the effect of enrollment strategy on time to patient follow up.

Please describe how you measured the problem. Consider addressing the questions below. (Max 500 Words)

What data sources were used? - Was a numeric baseline OUTCOME measure obtained? - What defined the sample size? - What counterbalance measures were identified? - What numeric baseline COUNTERBALANCES were obtained? - Was the outcome measure clinically relevant? - Was the outcome measure a nationally recognized measure?

ProPER Care opened its virtual doors in September 2020. All clinic encounters were documented in our electronic health record (EHR). The EHR served as the primary data source for this project. Retrospective chart review was performed for every scheduled ProPER Care visit between September 2020 and November 2021. In all, 2554 patients had scheduled clinic visits during this time frame. Three hundred and seventy-eight visits were excluded, most often due to the visit being a scheduled follow-up from an earlier ProPER Care appointment, or because it was a rescheduled visit after an earlier no-show to the patient's initial appointment. Data collected included basic demographics, date and location of ED visit, date of the ProPER Care appointment and if the visit was completed, and basic information from the ProPER Care visit. The primary outcome measured was time to initial ProPER Care visit, and the secondary endpoint was the no-show rate. We additionally examined aggregate data from ProPER Care visits to better understand overall utilization of the program, including mode of communication (Doximity<sup>®</sup> video or phone), medications prescribed, labs and/or imaging ordered, referrals placed and if any follow up ProPER Care visits were scheduled.

Please describe how you analyzed the problem. Consider addressing the questions below. (Max 500 Words)

What was one factor contributing to the gap? - Were multiple factors contributing to the gap? - Was a structured root cause analysis undertaken? - What was the appropriate QI method or tool used for root cause analysis? - Was a root cause analysis performed prior to identifying potential solutions? - What was the rationale for selecting intervention(s)? - Did the project use a QI method or tool for selecting intervention(s)?

Every scheduled ProPER Care visit between September 2020 and November 2021 was individually reviewed by one of five data abstractors. All abstractors utilized a standardized chart review process to minimize inter-abstractor variability with the Team Lead providing additional oversight and redundant review of select charts to ensure accuracy and consistency of data. Data was collected and stored in a password-protected file in Microsoft Excel<sup>®</sup> on our secure Health System server. Basic tabulations regarding patient demographics and visit information were performed in Microsoft Excel<sup>®</sup>. Average time to follow up was evaluated in Microsoft Excel<sup>®</sup> using an unpaired t-test with alpha = .05. No-show rate was analyzed using an online Chi Square test calculator with alpha = .05.

Please describe how you improved the problem. Consider addressing the questions below. (Max 500 Words)

What was the implementation of intervention(s) (date/time of go live)? - Was the target measure re-measured afterwards with comparison graph? - Was a structured plan for managing change used? - Was the project counterbalance re-measured with a comparison graph? - Was the counterbalance adversely affected? - Is the improvement in target outcome measure shown? - Was a statistical significance demonstrated in the outcome measure?

Data was analyzed from September 25, 2020 through November 29, 2021. We implemented an opt-out patient enrollment strategy on February 12, 2021. Patient demographics including gender, race, and age were similar between these two groups. In total, 2176 ProPER Care visits were included in this analysis, with 657 occurring during the earlier “opt-in” enrollment period, and 1519 during the latter “opt-out” enrollment period. The average time from ED visit to virtual clinic visit after implementing the opt-out strategy was 10.3 days compared to 5.1 days during the opt-in enrollment period ( $p < .001$ ). Secondly, opt-out enrollment was associated with a 51.1% (776/1519) no show rate compared to 42.0% (276/657) no show rate during opt-in enrollment ( $p < .001$ ). Of all patients scheduled for ProPER Care appointments, 95.4% (2076/2176) were initially evaluated at our primary ED in a large urban academic medical center, while 4.4% (95/2176) were seen at a free-standing rural ED affiliated with our health system and 0.2% (5/2176) were seen in other health system locations. Completed ProPER Care visits were conducted using DoximityG video in 23.9% (269/1124) appointments and audio-only modalities in 76.0% (854/1124) visits (one clinic visit was completed using text-only, as there was no American Sign Language interpreter available at the time). ProPER Care physicians prescribed medications or ordered laboratory and/or imaging studies in 26.9% (302/1124) and 10.1% (114/1124) of appointments, respectively. They additionally helped connect the patient with a new primary care provider (PCP)—defined as either placing a direct referral for a PCP in our health system or providing an outreach referral for the explicit purpose of finding the patient a PCP in the community—in 31.3% (352/1124) of cases, and one or more additional specialist referral was placed in 22.4% (252/1124) of visits. Finally, 15.9% (179/1124) of patients had at least one follow-up ProPER Care visit scheduled.

Please describe the control phase of your project. Consider addressing the questions below. What were the lessons learned from the project? - Was there communication to stakeholders of the summary of the project, and lessons learned? - Was a process owner identified? - Did the process owner acknowledge ownership of ongoing monitoring? - What control measures were identified? - What was the reaction plan for deficiencies identified in the control measure? - Was there at least one year of sustained monitoring demonstrated? - Was the project successfully diffused in scholarly form (i.e. poster, manuscript, etc)?

Initiating an opt-out enrollment strategy for ProPER Care was associated with longer time to follow up and higher no-show rates. This suggests that, although referrals to ProPER Care increased using this approach, it did not increase the completion of ProPER Care visits and instead compromised duration of time to follow up and no-show rate. Our findings should encourage us to identify other patient characteristics and enrollment strategies to target instead of, or in addition to, opt-out enrollment. Providing feedback and success stories to the department and referring providers is one method that our toxicology colleagues have used to increase awareness about substance abuse referral programs with success, and should be considered for ProPER Care as well. It is also important to note that for the purposes of our study both missed and canceled appointments were categorized as “no-shows.” This decision was made in order to ensure accuracy of the primary endpoint, time from ED visit to initial scheduled ProPER Care follow up, as well as due to inconsistent designation of some visits as cancellations (e.g. the EHR system lists the visit as a cancellation, however the ProPER Care provider’s note indicates it was a no-show). Importantly, however, this decision likely resulted in a higher no-show rate when some patients may have simply rescheduled for a day or time that worked better for their schedules. Our next steps include continuing to work with ED and ProPER Care leadership to determine the best actionable steps based on our results, in order to optimize the utilization and impact of the ProPER Care clinic. This is especially important with new resident physicians

beginning in just over a month. Additional analysis is also underway to evaluate for certain patient characteristics, such as demographics or insurance status, that may predict successful virtual ED follow-up with ProPER Care.

#### Attachments

[Supplemental Charts](#)