Improving Emergency Department Discharge Instruction Readability

Category of submission (select as many as apply):

Reducing Disparities
Resident/Fellow Project

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

Patient Centered
Effective

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?

We noticed that many of our patients in our residency training program hospital had low health literacy and often did not understand their health problems or prior work-up that had been done. We reviewed the literature and discovered that data show low health literacy leads to longer hospitalizations, increases ED utilization, and increases cost [1]. In a 2008 study at our institution, 15% of patients were demonstrated to have low health literacy based on a validated screening tool [2]. Discharge instructions when understood can increase patient comprehension of medical information and decrease medico-legal risks [3]. The federal Agency for Healthcare Research and Quality (AHR) recommends that healthcare information be written at a 6th-8th grade reading level, however much of healthcare information is written at a higher level [4]. We noticed significant variability in the reading level of discharge instructions written by various providers in the ED, which is staffed by off-service residents, EM residents, PAs, and NPs. We also noted there was no unifying tool for residents to use to write their discharge instructions. We identified the variability in AVS discharge instructions as a quality gap which could be addressed in our project. We discussed this with co-residents and acknowledged the frustration of patients around this issue. We hoped improving AVS readability would ensure patients understood their medical information and a follow-up plan for their visit. It would seem if we could meet our community's reading level in our discharge instructions better, it would lead to improved overall care for patients at our institution and if successful could be utilized in other settings as well.

References: 1. Baker DW, Gazmararian JA, Williams MV, et al. Health literacy and use of outpatient physician services by Medicare managed care enrollees. J Gen Intern Med 2004;19:215-20. 2. Olives, Travis, et al. "Health literacy of adults presenting to an urban ED." The American journal of emergency medicine 29.8 (2011): 875-882. 3. Schaefer, Marie.

"Documentation Of Emergency Department Discharges Against Medical Advice." (2012). 4. Berkman ND, Sheridan SL, Donahue KE, et al. Health literacy interventions and outcomes: an updated systematic review. Evid Rep/Technol Assess. 2011;199:1-941.

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?

This was an ambispective, observational quality improvement project. Our aim of our project was to increase the number of ED discharge instructions meeting reading level national guidelines from 35% in our pre-intervention assessment to over 50% over a 3-month period in 2020. We determined that 90 patients in each portion of the study would be needed for it to have sufficient power, and this became the target size of our convenience sample. The Flesh-Kincaid Readability Scale (a validated screening tool for reading level, easily accessible in Microsoft Word) was used to calculate the grade reading level of discharge instructions. We reviewed the ED charts in EPIC for 91 patients in the pre- intervention period and applied the Flesh-Kincaid to assess if they met national guidelines. The grade reading level of discharge instructions for a convenience sample of 91 eligible patients over a 4 day period was determined by EHR chart review. Exclusion criteria were: patients for whom no D/C instructions were written, patients who eloped before discharge, patients discharged by the principal investigators of the study, and discharge instructions not written in English.

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)?

In our root cause analysis, we identified several factors contributing to this quality gap. One factor contributing to the gap was the lack of a unified tool for writing out discharge instructions. Also, residents often write at too high of a level of a patient's understanding. Additionally, multiple off service residents rotate through with minimal ED experience and so don't know how to write appropriate discharge instructions, as there is minimal education in undergraduate medical education on communication of discharge instructions with patients. We discussed highly utilized areas like name-tag reference materials, our EMR, and the physical workspaces to reach resident and mid-level providers when implementing changes in our academic ED setting. This would ensure our intervention would be available in multiple mediums, and could be passed down from year-to-year of residents, by giving the new interns ID badges with our D/C instruction each year.

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?

Our multi-faceted intervention consisted of an .EDDC discharge template created in EPIC, emails about discharge sent out to providers in Emergency Department, posters with examples of best language posted in Team Centers throughout department, laminated D/C instruction tip cards and examples provided to residents and PAs in department, and a provider education session about health literacy and discharge instructions at resident conference. Go-live of the intervention was 6/2020, and we re-measured our target after the intervention, at the 3 month follow-up period. Overall, the post-intervention period was associated with a statistically significant lower discharge instruction grade reading level (OR = 0.53, 95% CI 0.31-0.92). The median grade reading level of discharge instructions decreased from 9th to 8th, and the percentage of instructions meeting AHR guidelines increased from 39% to 64%, achieving our target goal of >50% meeting guidelines. Interestingly, in our secondary analysis EM PGY2 and EM PGY3-5 providers were associated with a higher grade reading level. EMPGY1, PA and off-service were not. There was no association between patient variables such as age, gender or race with grade reading level.

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)?

In summary, this simple, low-cost QI intervention led to a modest but significant decrease in the average grade reading of discharge instructions in our ED. After the intervention, a majority of discharge instructions met AHR guidelines for grade reading level. We communicated our lessons learned to our residency leadership and the tip cards have been integrated into being given to the intern class each year. We shared our results in a Lightning Oral Presentation in the QI section at SAEM 2020, and were selected as one of the poster winners at the MMCGME Virtual Quality Forum in May 2021. In the ongoing control phase of the project, our program handed out tip cards to the incoming intern class and we plan to re-assess the AVS discharge instructions reading level annually in the ED to measure intervention stability. As PGY-3 residents, we continue to monitor the project as 'process owners'. We will continue to assess for other areas of improvement in our QI intervention to ensure AVS instructions in our ED remain stable.

Attachments

[Poster QI AVS Instructions](#)

[Supplemental Materials](#)