Redesigning post-hospital discharge patient outreach in complex learning healthcare system: Optimizing costs, patient experience, and alignment with high value care teams

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BACKGROUND

- At Stanford, since 2015, a centralized nurse-led service makes post-hospital discharge telephone calls (PDC) to all eligible patients within 72 hours of discharge.
- Large-scale interventions are often implemented across healthcare systems based on evidence of success at other institutions. Organizational funds have been diverted to such interventions for years, yet it is important to assess the effectiveness of such interventions given the resources they require.
- We analyzed the impact of making post-hospital discharge telephone calls to patients in this era of digital evolution. Using a data-informed approach and patient input, we redesigned this intervention to cost-effectively benefit those at highest risk.
- With the increasing financial constraints and hospital census faced by every healthcare system since the COVID-19 pandemic, it has become critical to optimize care delivery, utilize digital technology, and focus on patients at highest risk of adverse outcomes post-hospital discharge.

OBJECTIVES

(a) Retrospectively explore the determinants of health associated with ≥ 1 unmet need post-hospital discharge (DC) and association between unmet needs and 30-day hospital revisits.
(b) Prospectively redesign PDC workflow based on these analyses.

METHODS

- Retrospective analysis of cohort of adult patients discharged after an inpatient admission from Stanford Health Care between June 1, 2021 and July 31, 2022.
- Data was obtained from administrative databases.
- Multivariate regression models were used for analyses.

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POST-DISCHARGE REDESIGN PROJECT

This work sparked an A3 method based complete rebuild of our PDC workflow and digital integration in an effort to optimize FTE/costs, improve patient outreach, and identify gaps for upstream improvement by value-based care teams.

PROJECT AIMS

- Improve reach rate for eligible patients discharged home from 42% to 55%.
- Target the top 3 unmet needs for data capture and upstream improvement
  - Clinical symptoms
  - Medications
  - Appointments
- Ensure first contact resolution of patient's unmet needs
  - Appointment slots for established SHC Primary Care patients
  - Align data/metrics/resources with Pharmacy and HCAHPS MGT
- Strategize and align with MGTs, VBCs, and other key improvement initiatives
- Create a high value, cost-conscious, sustainable solution
- Revamp data capture and reporting

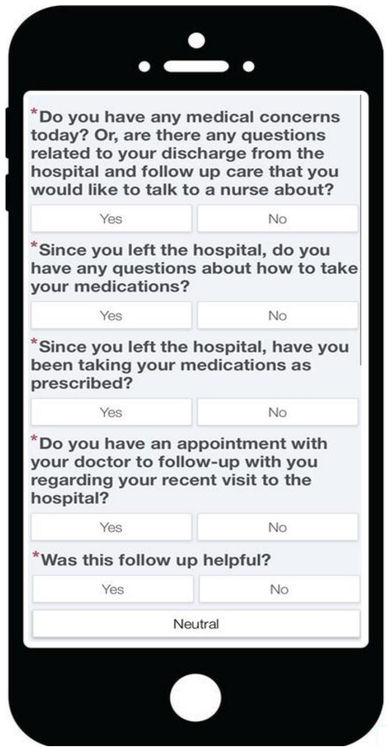
CURRENT STATE

CAS outreach to patients/caregivers via standardized set of questions on PDC to identify any unmet needs:

1. Do you have your discharge instructions?
2. Do you understand all your discharge instructions?
3. Were you able to fill all your new prescriptions?
4. Do you have any questions about your new and/or changed medications?
5. Are you experiencing new or worsening pain since discharge?
6. Do you know who and what phone number to call with worsening symptoms?
7. Have you made a follow up appointment with your doctor?
8. For patients with an order for home services (i.e., home health, intravenous therapy, etc.) at discharge, have the services started?
9. For patients with an order for home equipment (i.e., durable medical equipment such as hospital bed, wheelchair, bedside commode, etc.), has the equipment been delivered?

FUTURE STATE

1. Discharge (after inpatient stay, emergency department visit, or same day procedure)
   - Discharge RN and/or registration obtains the best phone number for patient or caregiver
2. Day 1 Post-Discharge
   - The patient will receive the initial digital questionnaire to the right via the Stanford MyHealth website or mobile device application
   - If the patient indicates they have no follow-up needs, they will receive a message with the CAS phone number and low acuity non-emergency offerings (CAS RN Triage Services, Stanford Walk-in Clinic, Stanford Express Care Clinic)
   - If the patient indicates they have an issue, they will receive a message to call CAS for assistance along with the phone number.
3. Patients with a moderate-to-high risk of readmission will be called on day 2 if no questionnaire response
4. Abridged 2-question follow-up questionnaires sent on days 3, 7, 14, and 21 post-discharge
5. To ensure digital equity, patients not on MyHealth will receive a follow-up phone call



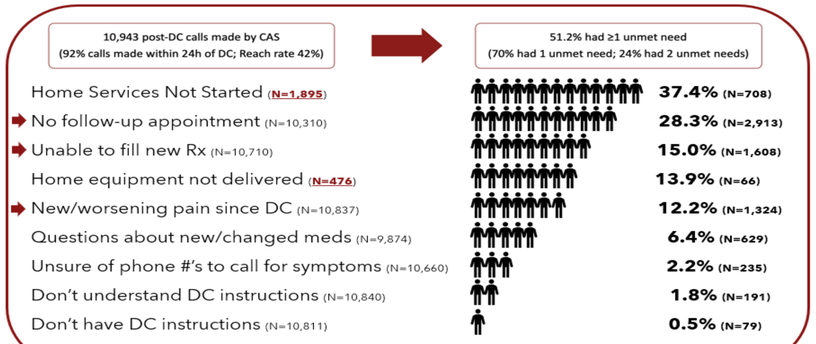
TENTATIVE GO-LIVE

- Phase 1 – September 20th, 2023
- Phase 2 – January 2024

CLINICAL ADVICE SERVICES

In 2015, Stanford established a patient-centric centralized nurse-led service called Clinical Advice Services (CAS). CAS manages an average of 1,500 daily encounters on weekdays and 6,000 daily encounters on weekends. CAS is currently staffed by over 90 nurses, 10 non-licensed personnel, and 13 leaders. CAS has created workflows and >350 customized/approved clinical protocols for nurse triage with >200 clinics at our institution. The three main purposes of CAS are to:
(a) Provide seamless connectivity to patients/caregivers at our institution with our clinicians (especially after-hours and on weekends/holidays) and provide first contact resolution of clinical and non-clinical concerns
(b) Train and empower our nurses to use customized and approved clinical protocols to provide effective triage, thereby reducing the number of patient calls escalated to on-call clinicians and outpatient clinics
(c) Proactively outreach to patients/caregivers post hospital discharge, post-ED discharge, or after ambulatory procedures to address and resolve unmet needs

RESULTS – UNMET NEEDS IDENTIFIED ON PDC



- Between June 2021 and July 2022, there were 34,277 discharge encounters. Of the 25,872 patient encounters eligible for PDC, CAS reached 42.3% of the patients/caregivers.
- There were no differences by determinants of health in those who received PDC and those who did not receive PDC.
- For the 10,943 patient encounters where PDC was successfully received, ≥1 unmet need was noted in 51.2% of the encounters.
- For those who received PDC, in the regression model, no significant difference in unmet needs was noted for any of the determinants of health except the discharging service; encounters discharged from medical services were 16% more likely to have ≥1 unmet need compared to discharges from surgical services.
- The 3 key unmet needs were lack of follow up appointment (28.3%), inability to fill new prescriptions (15.0%), and new or worsening pain since discharge (12.2%).
- There were no significant differences in 30-day ED/hospital revisit rate between those who received PDC versus did not, had ≥ 1 unmet need during PDC versus no unmet need, had follow up appointment versus did not, was able to fill new prescriptions post-DC versus not, and had new/worsening symptoms post-DC versus not. In a survey at the patient/family advisory councils, 100% voted to continue PDC with digital outreach option.

CONCLUSIONS AND LESSONS LEARNED

1. Over half of the patients had unmet needs and gaps in care within 24 hours post-hospital discharge.
2. Post-hospital discharge outreach presents an opportunity to identify and resolve these gaps in care, catch early clinical deterioration, improve patient experience and outcomes. It can also lead to clinician satisfaction/wellness.
3. PDC may not impact 30-day ED/hospital revisits. Multiple factors including social determinants of health can be associated with revisits to ED/hospital after hospital stay. Several such factors are not captured.
4. PDC are expensive and we were able to reach only 42% of the patients.

INSPIRATION

- Evaluation of an Automated Text Message–Based Program to Reduce Use of Acute Health Care Resources After Hospital Discharge (Bressman et al., 2022)