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Reducing Inpatient Readmissions Through Early Follow-up Appointment Planning: A Quality Improvement Project

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Abstract

Problem: Inpatient readmissions have a highly negative impact on healthcare systems. Not only do these hospitalizations have a detrimental effect on patient outcomes they also are accompanied by a prohibitive financial burden to the hospitals.

Context: Follow-up appointment with a primary care provider after discharge has been demonstrated as a viable strategy to reduce the risk of readmissions.

Interventions: Create a volunteer program to schedule patient appointments with a primary care provider within seven days of discharge.

Measures and Results: Compare the number of patients that were discharged with a follow-up appointment after the intervention to before the intervention, and study the overall change in readmission rate.

Conclusions: Expected conclusion is that implementation of the project will lead to an increased rate of patients being discharged with a follow-up appointment, resulting in decreased readmissions.

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Problem Description

Inpatient readmissions have become a challenging problem for healthcare systems in US. According to the Healthcare Cost and Utilization Project (2015), the average cost of an all-cause readmission for a 65 year-old Medicare patient was $13,800. In addition, the Hospital Readmission Reduction Program (HRRP), which was created under the Affordable Care Act, penalizes hospitals that have a higher than expected risk-standardized 30-day readmission rate for an acute myocardial infarction, heart failure, or pneumonia (McIlvennan, Eapen, & Allen, 2015). In addition to the high cost a readmission can bring to a hospital, inpatient readmissions create detrimental and negative effects on patient outcomes.

To ameliorate issues related to inpatient readmissions, the Centers for Medicare & Medicaid Services (CMS, 2013) have suggested that scheduling a patient's follow-up appointment with a primary care provider (PCP) after discharge can help to improve the post-discharge care transition. Despite this recommendation, a large metropolitan hospital currently has no process in place for ensuring that a patient's follow-up appointment is scheduled before they discharge. This quality improvement project aims to ensure patients at high risk for readmission have a follow-up appointment with a PCP planned before they are discharged from the hospital through the creation of a volunteer program.

Available Knowledge

Analysis of current hospital data demonstrates that 18-30% of patients are readmitted to the hospital per quarter. Data also shows that from October 2016 through September 2017, 39.2% of patients who were readmitted did not attend a follow-up appointment after discharge.

A PICO search question framed literature search to support this project. The patient/population was hospitalized adult patients. The question is as follows: In hospitalized adult patients (P), will scheduling a primary care provider follow-up appointment before discharge (I) decrease their risk of readmission (O) compared to not scheduling the appointment at all (C). The PICO search question guided research in the electronic databases CINAHL, PubMed, and Ovoid for the following terms: readmission, follow-up appointment, discharge. Four articles published between 2013 and 2018 were selected for this literature review (see Appendix A).

Shung et al. (2015) conducted a quasi-experimental trial to determine the effect of a volunteer-run discharge planning program on adherence to follow-up appointments after discharge. The study was conducted with an intervention group and a control group. The study found that, in patients who had health insurance, 73% of the intervention group attended their follow-up appointments. This significant finding shows the relevance of volunteer program to the scheduling of the follow up appointments and their compliance with the visit.

Bradley et al. (2013) conducted a cross-sectional study to identify hospital strategies that were associated with lower readmission rates for patients with heart failure. The study was conducted with an intervention group and a control group. The study found that hospitals with a lower 30-day risk-standardized readmission rate had processes in place to arrange follow-up appointments before discharge and also to send discharge summaries directly to patient's primary physician.

Baky et al. (2018) used a convenience sample to determine if a quality improvement project aimed at improving discharge processes reduced the 30-day all cause readmission rate for patients with acute coronary syndrome or heart failure. The study found that patients who

scheduled a follow-up appointment prior to discharge had a significantly lower chance of being readmitted within 30 days.

Goyal et al. (2016) used a retrospective cohort sample to characterize real-world patterns of scheduled follow-up appointments among adult patients with heart failure upon hospital discharge. The study found that 50% of patients discharged home following heart failure hospitalization had an appointment scheduled. This demonstrates that there is a potential for improvement in processes for scheduling follow-up appointments for patients.

Rationale

According to Gesme & Wiseman (2010), change can only happen in an organization if there is an agreed-on direction for the practice, a functional and effective leadership structure, and a culture that promotes and rewards change. This intervention of a volunteer program that schedules patients' follow-up appointments is in line with hospital's current vision of reducing inpatient readmissions. Moreover, leadership, including the hospital's Chief Nursing Officer, Post-Acute Care Manager, and Care Coordination Manager are all in strong support of the idea. Finally, although there was initial skepticism on the functionality of the volunteer program, small successful trials of the process in place have proven valuable in gaining support from the leadershp.

Specific Project Aim

This project aims to improve the patient follow-up appointment planning process in this large metropolitan hospital with overall goal of reducing readmissions. The process begins 24 - 48 hours prior to a patient's discharge, initiating communication between patient/loved ones, bedside RN, primary care physician, case manager, and Readmissions Prevention Volunteer. The process ends with the patient successfully discharging with a follow-up appointment scheduled.

By working on this process, goals are 1) an improvement in patient outcomes, 2) increased communication between all members of interdisciplinary team, 3) improved satisfaction of the interdisciplinary team and patient/loved ones, and 4) a reduction in readmissions. It is important to work on this now because 1) readmission rates, 2) staff satisfaction, and 3) patient satisfaction all can be improved.

Context

A microsystem assessment was conducted to determine the need for this quality improvement project. This project will primarily take place on the medical-surgical and medical-telemetry units. The patient population has an average length-of-stay of 3.2 days. Data demonstrates that the top readmitting diagnoses are sepsis, COPD, pulmonary infection, congestive heart failure, UTI, and renal failure. The professionals this improvement project will work with is the Care Coordination team. The team consists of approximately 4 RNs, and 2 Licensed Clinical Social Workers (LCSWs). The RNs often each have a caseload of 15-20 patients per day, with the LCSWs supporting on more complex patient cases. The current process of scheduling patients' PCP follow-up appointments holds the bedside RN or Care Coordinator responsible for making the appointment and charting it within the electronic health record. However, often these appointments have not being scheduled for patients prior to discharge. After discussion with Case Coordinators and bedside RNs, reasons for this is a lack of time not only to call PCP offices, but also coordinate with patients and their loved ones as of when these appointment would take place. This leads to a higher risk of readmission for patients.

A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis was conducted for this project (see Appendix B). Strengths include that utilizing volunteers are a cost-effective solution, there is buy-in from Care Coordination and bedside RNs because of the reduced

workload, and that evidence demonstrates follow-up appointment planning prior to discharge reduces readmission risk. Weaknesses include that there is only a small budget available for this project, and that volunteers will not have access to the electronic health record charting system, meaning the Care Coordination team will still have to chart it, possibly creating delays. Opportunities include leadership and upper management buy-in due to the current hospital audit specifically focusing on readmissions. Moreover, if a patient doesn't have a PCP, there is opportunity to recruit them as a patient, thus increasing hospital revenue. Threats include that volunteers may not be able to commit to the position long-term, leading to the need for a possible excess amount of training sessions. In addition, since the project must work around a volunteer's schedule, the Care Coordination team may not have a volunteer every day as needed.

Intervention

The intervention followed the framework of Kotter's Eight Steps of Change. This theory emphasizes the importance of attainable change at each step in order to create transformation within an organization (Kotter, 2007). The first step was to create a sense of urgency. Readmission data and issues surrounding the lack of follow-up appointments were discussed with the Care Coordination team. The next step was to build a team consisting of Post-Acute Care Manager, Care Coordination Manager, and Volunteer Coordinator. The third step is to form a strategic vision and initiative. This project falls directly in line with the hospital's vision to reduce readmissions. The fourth step is to enlist and train volunteers. The hospital is located in close proximity to the local university. This allowed for recruitment of interested volunteers, specifically School of Nursing and Health Professions students, for the project. The utilization of nursing students allows for general onboarding requirements to be met much faster (titers, immunizations), but also in that they would already have experience working closely with

patients and members of the interdisciplinary team through their previous clinical rotations. The following step was to enable action by removing barriers. The CNL facilitated clear and open connection between interested volunteers and the Volunteer Coordinator in the onboarding process. Moreover, the process and materials needed for scheduling follow-up appointments was written out and organized in an easy to access binder. In addition, potential issues, such as volunteer cancellations, were also addressed and documented. The next step was to generate short-term wins. This step included gaining the support of senior leadership, including Chief Nursing Officer and the Readmissions Committee. In addition, trial implementation of scheduling follow-up appointments was conducted, demonstrating the positive effect the intervention can have on patient and staff satisfaction. Sustaining acceleration will be demonstrated when more volunteers are onboarded and trained to be on the unit scheduling follow-up appointments. Change will be instituted once the follow-up appointment process is fully implemented.

To measure the effect of this project, the CNL will assess the impact of volunteers on the number of patients scheduled for a follow-up appointment, as well as the effect on staff and patient satisfaction and readmissions.

Measures

The Institute for Healthcare Improvement (2018) suggests using a variety of measures in order to assess improvement efforts. For this project, the CNL should assess the outcome measure of the number of patients scheduled for a follow-up appointment compared to before the intervention. Another outcome measure would be the satisfaction of Care Coordinators after the intervention. The third measure would be the readmission rate, particularly of patients fow whom the appointments were scheduled. Process measures would include the average time that it takes

to schedule a patient appointment, as well as the percentage of days that a volunteer cancels or is unavailable and how these issues were resolved.

Ethical Considerations

Ethical concerns included benevolence, and patient privacy and patient autonomy. It is a duty of healthcare industry and nursing profession to demonstrate intent to provide the most ideal care possible. Organizing appointments prior to discharge demonstrates high level of commitment to the best possible care, not only in this particular microsystem, but in the larger continuum of care realm. In terms of patient privacy, the issue of trusting volunteers with patient health information needed to reconciled. This was addressed by the requirement that volunteers sign a HIPAA agreement and confidentiality agreement during onboarding. Another consideration brought up was the effect that scheduling follow-up appointments for a patient can affect patient autonomy. However, involving the patient and their chosen family/friend in the appointment process allows them to make their own decisions regarding their healthcare. Moreover, if a patient is assessed to be able to make their own appointment with their PCP, the volunteer is trained to encourage the patient to do so, creating a sense of empowerment and ownership of their own care.

Results

Development of the intervention began to take place in September 2018, and continued through December 2018 (see Appendix C). In September 2018, the needs of Care Coordination staff and bedside RNs were evaluated. In addition, there were discussions with Care Coordination management and staff on the new project. In October 2018, workflows were drafted for the follow-up appointment process. These workflows were trialed in collaboration with Care Coordination and the Post-Acute Care Manager (see Appendix D). During the trials, it

was demonstrated that when the primary care provider was already known, scheduling appointments can take less than 10 minutes. However, in calling to public health clinics, such as those for homeless adults, calls could take up to 30 minutes, and multiple attempts to call were needed. Also during October 2018, recruitment for volunteers began. In November 2018, recruitment and onboarding of volunteers continued. In addition, workflows and processes were finalized so that once volunteers were on the floor, the transition was smooth. In December 2018, volunteers are slated to be implemented fully in their Readmissions Prevention role.

Due to time constraints and volunteer requirements of the hospital, full implementation of the Readmissions Prevention volunteer was not documented for this project. However, based upon the trial period in October, the Readmissions Prevention volunteer has a positive effect on staff satisfaction. The Care Coordination team was appreciative that there was a volunteer that could take on the workload of scheduling follow-up appointments. Upon successful implementation of the Readmissions Prevention volunteer, we believe that there will be a positive impact on patient readmissions and staff satisfaction.

Summary

Overall, the Readmissions Prevention volunteer is an example of a creative, low-cost intervention that has a positive impact on both patient readmissions and staff satisfaction. Although implementation was not fully obtained by the end of the project time, all tools and workflows are ready for the successful use of the Readmissions Prevention volunteer in the hospital. Many different factors contributed and will continue to affect implementation of the volunteer role, including interested volunteers, managerial leadership, and continued cooperation of the Care Coordination team. Lessons learned include the length of time it can take to onboard

a volunteer to this hospital, as well as the prioritization of this project, as well as others, at this hospital.

In conclusion, this project demonstrates how the utilization of volunteers can positively impact patient outcomes and staff satisfaction. As time goes on, it will be important for there to be a staff member to guide new volunteers and Care Coordination staff on what a Readmissions Prevention volunteer does. Moreover, it will be interesting to see other unique uses of inpatient volunteers in order to improve patient outcomes and save costs.

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Appendix A

PICO Question: In hospitalized adult patients (P), will scheduling a primary care provider follow-up appointment before discharge (I) decrease their risk of readmission (O) compared to not scheduling the appointment at all (C)?

Citation	Conceptual Framework	Design/Method	Sample/Setting	Variable studied and their definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to practice
Shung, D. (2015)	None	Quasi-experimental trial Purpose: To determine the effect of a volunteer-run discharge planning program on adherence to provider ordered follow-up appointments after discharge.	Sample total N=141. Intervention N=73. Control N=68. Setting: Emergency department in an academic public hospital.	Independent variable: volunteer scheduling follow-up appointment Dependent variable: adherence to follow-up appointment Criteria: Enrollment in trial was chosen by alternating discharge-as-usual and volunteer-assisted discharge	Attendance to scheduled follow-up appointment, insurance status, demographics, if patient had established PCP, transportation, higher income, language	Statistical analysis was performed utilizing Fisher's exact and Chi-squared univariate tests followed by multivariable regression.	Follow-up appointment attendance: when restricted to patients who held insurance, 73% of the intervention group attended appointments, which demonstrated significance (*P=.06).* Males significantly less likely to attend follow-up appointment (OR 0.33, 95% CI 0.15-0.67). Insurance holders significantly more likely (OR 3.67, 95% CI 1.61-8.75)	Strength: Real-life design. Meets validity and reliability. Limitations: Small sample size (<150).

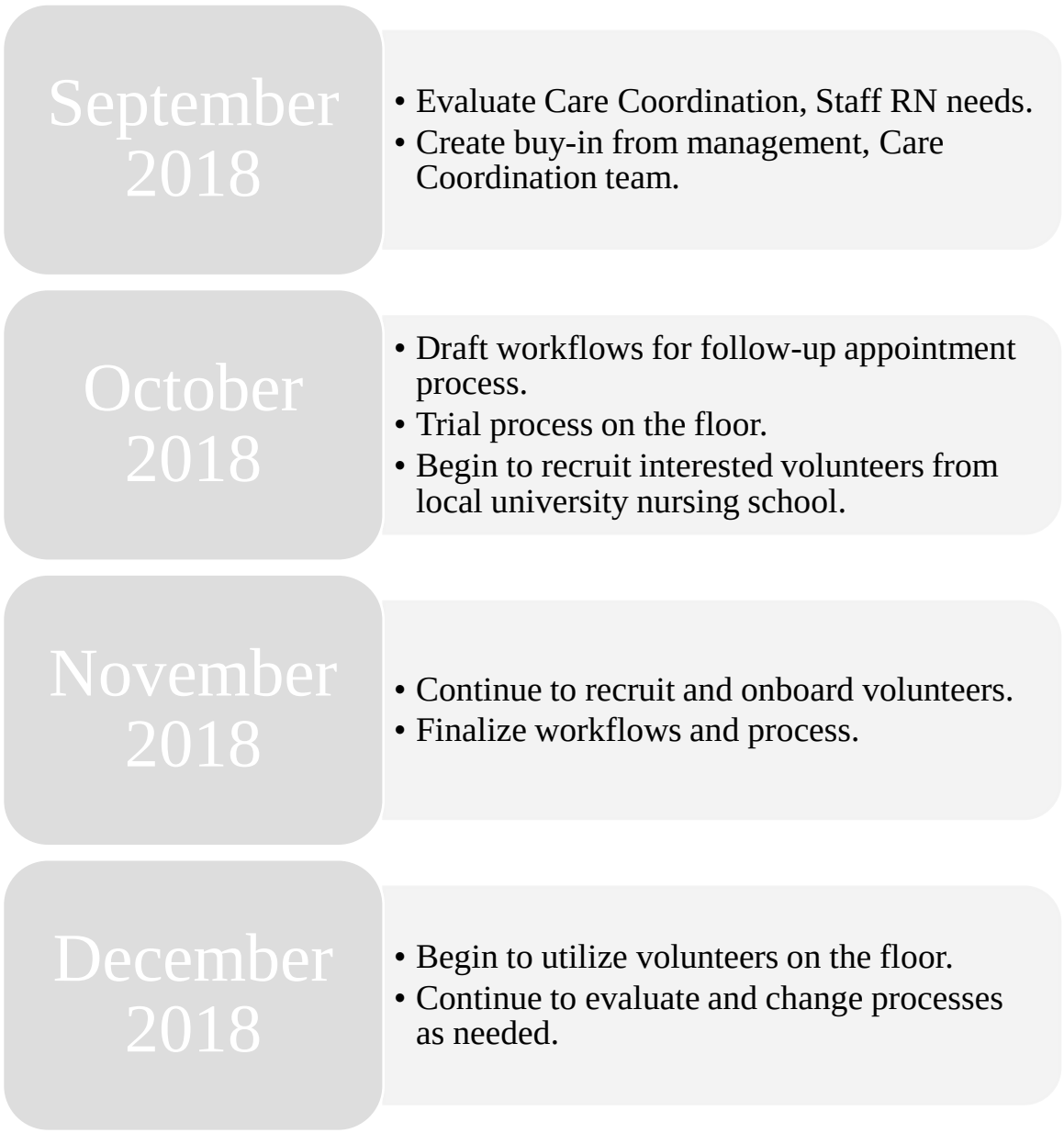
Baky, V. (2018)	Lean Six Sigma	Convenience sample Purpose: to determine if a quality improvement project for improving discharge process reduced 30-day all-cause readmission rate for patients with ACS or HF.	Sample total N=578. Intervention N=508. Control N=70. Setting: Johns Hopkins Aramco Healthcare Hospital in Saudi Arabia.	Independent Variable: Scheduling of follow-up appointment Dependent Variable: odds of being readmitted within 30 days.	Intervention, age (years), male sex, heart failure diagnosis, LOS (days)	Statistical analysis performed using STATA 12. *t*-test used to compare patient age and LOS before/after the intervention.	Patients who received a scheduled appointment had a lower readmission compared to patients who did not (8.0% vs. 14.3%, $p = 0.025$). Patients who received an appointment prior to discharge had much lower odds of being readmitted within 30 days (OR = 0.383, 95% CI: 0.197–0.743).	Strength: Large sample size, real life design. Meets validity and reliability. Limitations: Convenience sample, baseline data collection time only 3 months.
Bradley, E.H. (2013)	None	Cross-sectional study Purpose: to identify hospital strategies that were associated with lower readmission rates for patients with heart failure.	Sample total N=599 H2H Intervention N=532. STAAR Intervention N=55 H2H and STAAR N=12 Setting: web-based study of different hospitals	Independent Variables: quality improvement efforts, medication management, discharge/follow-up procedures Dependent variable: 30-day risk-standardized	Descriptive characteristics of hospital, strategies related to quality improvement efforts, medication management, discharge/follow-up procedures	Statistical analysis performed using SAS, version 9.2.	Lower hospital RSRR included arranging follow-up appointments before discharge (0.19%, P-value = 0.037), having a process in place to send discharge paper/electronic summaries directly to patient's primary	Strength: Large sample size, real life design. Meets validity and reliability. Limitations: Cross-sectional data, limited information about

			across United States.	readmission rate (RSRR)			physician (0.21%, p-value =0.004).	implementation methods
Goyal, P. (2016)		Retrospective cohort study Purpose: to characterize real-world patterns of scheduled follow-up appointments among adult patients with heart failure upon hospital discharge.	Sample total N=796 Scheduled Appointment N=445 No appointment N=351 Setting: Large urban academic center in the United States	Independent variable: Patterns associated with scheduling follow-up appointment Dependent variable: if follow-up appointment was scheduled.	Scheduled appointment, age, payer status	Statistical analysis performed using IBM SPSS Statistics. Multivariable logistic regression identified factors associated with scheduled follow-up appointment.	50% of patients discharged home following heart failure hospitalization had an appointment scheduled. Scheduled follow-up appointments were less common among patients aged ≥65 years.	Strength: Large sample size, real life design. Meets validity and reliability. Limitations: Cohort from single institution. Data if patients scheduled appointment after discharge not available.

Appendix B


STRENGTHS
•Volunteers are cost-effective
•Potential for reduced workload leads to buy-in from Care Coordination, bedside RNs.
•Evidence demonstrates follow-up appointment planning prior to discharge reduces readmission risk.
WEAKNESSES
•Small budget available for project.
•Volunteers do not have access to EHR charting.
•This can lead to delays in scheduling, as Care Coordination team has to chart appointment.
OPPORTUNITIES
•Leadership buy-in due to audit that focuses on readmission interventions.
•Potential to recruit patients without PCPs as a patient, increasing hospital revenue.
THREATS
•Volunteers may not be able to commit to position long-term.
•Care Coordination team may not have volunteer every day as needed.

Appendix C


September 2018
• Evaluate Care Coordination, Staff RN needs.
• Create buy-in from management, Care Coordination team.
October 2018
• Draft workflows for follow-up appointment process.
• Trial process on the floor.
• Begin to recruit interested volunteers from local university nursing school.
November 2018
• Continue to recruit and onboard volunteers.
• Finalize workflows and process.
December 2018
• Begin to utilize volunteers on the floor.
• Continue to evaluate and change processes as needed.

Appendix D

Readmissions Prevention Volunteer Workflow

1. **Before 11:30 AM** Care Coordination Assistant prints census for the day and puts inside Readmission Prevention Volunteer binder.

2. **11:30 AM – 12PM** Volunteer goes to Care Coordination Office, sign-in on Volunteer Monthly Schedule, picks up binder.

3. **12PM** Check in with Care Coordinator on 7W and/or 8W to get names of patients that are high risk for readmission, discharging home within 24-48 hours, and will need appointment with PCP/or other provider scheduled.

4. **12PM-3PM** Volunteer follows appointment scheduling workflow and completes appointment log in binder as appropriate. Check in with Care Coordinator as needed.

5. **3PM** Volunteer makes 2 copies of completed appointment log. Gives one copy to Care Coordinator/RN to input into Cerner. Other copy goes under "Past Appointment Logs" tab. If appointment log has **"d/c"** next to **all** patient names, put log in "Completed Appointment Logs" binder.

6. **By 3:30 PM** Volunteer ensures binder has all forms needed for next day, makes copies as needed.

Readmissions Prevention Volunteer Step-by-Step

1. **11:30 AM: Arrive at**
    a. Check in at Care Coordination Office
    b. Initial on Readmission Prevention Volunteer Monthly Schedule
    c. Pick up Readmissions Prevention Volunteer Binder
        i. Ensure Daily Census report (called CC Daily Census – Inpatient & Observation from Midas) for day is in binder (if not, request from Kelly, Care Coordination Assistant)
        ii. Make sure enough binder contains enough blank appointment logs, patient appointment reminder forms.
2. **12pm: Check in with Care Coordinators on 7W/8W**
    a. They will usually be seated at computers in Nurses Station.
    b. Ask Care Coordinator **which high-risk patients are being discharged within 24-48 hours and need follow-up appointments with a primary care provider (PCP).**
        i. Double-check completed appointment logs to ensure patients that need appointment don't already have an appointment scheduled.
        ii. Compare Daily Census and completed appointment logs.
            1. if patient no longer in Daily Census, write "d/c" next to patient in completed log.
            2. If patient still in Daily Census, discuss patient with Care Coordinator, may need to reschedule their follow-up appointment.
    c. Highlight patients that need appointments on Daily Census report.
    d. Ask Care Coordinator if there is any special info to note about specific patients on the census.

3. **Initial Check in with Patients (follow workflow)**
    a. Introduce yourself – be friendly, respectful, and kind to patients (and their loved ones) ☺
    b. Assess if patient is independent, can make appointment on their own.
    c. Check patient's PCP listed on the census – confirm that's their current PCP.
        i. If patient doesn't have a PCP listed, ask who it is.
        ii. If patient doesn't have a PCP at all, ask if they would like to be seen at Sister Mary Philippa clinic on-site at 2235 Hayes St., 5th floor.
    d. Ask patients about **transportation**
        i. How do they usually get to their appointments?
    e. Ask patients about **family/friends**
        i. Does family/friend usually take them to their appointments?
        ii. Should we coordinate with family/friend for your appointment date?
    f. Ask patients about their preferred appointment date/times.
    g. Ask patient if they are unable to be seen within 7 days of discharge, if they would like to be seen within [redacted] and then transition back to PCP
    h. Write this information on census/scratch paper as needed

4. **Make Discharge Appointments**
    a. If patient can make their own appointment, ask them to, and that you'll check back in an hour.
    b. Call each patient's PCP and make an appointment.
    c. If patient can't be seen within 7 days of discharge, call Sister Mary Philippa Clinic to make an appointment.
    d. Neatly write appointment information down on the appointment log for that day.
    e. Neatly write appointment info for each patient on a **green Appointment Reminder form**.

5. **3PM: Check Back with Patients, Care Coordinators**
    a. *If able to make an appointment:* Let patient know you made their appointment, give them **green Appointment Reminder form**.
    b. Make a copy of completed appointment log for that day**.** Give Care Coordinator one copy, store the other in the binder. Share any special info/difficulty you had while making appointments for each patient.
    c. Shred census, make sure Volunteer Binder filled with forms. Return binder to Care Coordination Office.
        i. File completed past appointment logs (where **all** patients have **"d/c"** written next to them) in Completed Appointment Logs binder.