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Efficacy of Utilizing a Discharge Checklist at a Northern California Hospital

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A masters project completed in partial fulfillment of the requirements for the degree of Masters Science—Nursing, Family Nurse Practitioner at the Valley Foundation School of Nursing, San José State University

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Dedication

I dedicate my dissertation work to my husband, family, and friends. Words cannot begin to explain how grateful I am to have you in my life. I would truly like to thank you for your love, confidence, and support. In the end, we will always, Toil Never Foil.

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Efficacy of Utilizing a Discharge Checklist at a Northern California Hospital

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Abstract

Standardization of patient discharges by utilizing a discharge checklist would address discharge barriers, improve discharge times, enhance communication among the multidisciplinary team, and improve efficiency of care. A 5-week pilot, which was a quality improvement study, explored whether the utilization of a discharge checklist would improve discharge times and communication among the multidisciplinary team. This study was conducted in a northern California county hospital, on 2 medical- surgical units, with a participating physician team, case managers, and approximately 150 medical- surgical registered nurses. The study yielded results of improved discharge times by 1 hour, and improved efficiency of care by discharging an additional 100 patients. The limitations and feasibility concerns include the short time frame of the study, staff compliance, staff buy-in, staffing shortages, and staff burn out. Further studies would benefit from prioritizing an extended duration for the study to allow opportunities for improved adherence and observe more improved outcomes. Standardizing a discharge checklist would yield improved outcomes to patients and healthcare professionals.

Keywords: Discharge checklist, registered nurse, nurse, discharge times, physician, multidisciplinary team, quality improvement, communication, patient, efficiency of care, enhanced communication, discharge process, medical-surgical, hospital, Northern California, standardization, Plan-Do-Check-Act

Background

The flow of the hospital is dependent on the efficiency of admissions, transfers, and patient discharges. The bedside nurses coordinate the patient's transition to resume life after admission. Unforeseen delays in tasks, delays in communication, and miscommunication among the multidisciplinary team, contribute to delays in patient discharges (Garg et al. 2015). Implementing a discharge checklist would encompass the development of organization, structure, and a discharge standard (Garg et al. 2015; Khanbhai et al., 2018). Inpatient nurses who utilize a discharge checklist would improve the efficiency of discharging a patient and in turn, improve efficiency of care and discharge times.

Significance

To address the discharge barriers, health care providers must acknowledge the significance of the outcomes pertaining to delayed discharges deriving from possible sentinel events that may result from patient falls, mortality, medication errors, and increased risk for infections (Cadel et al., 2021). While the severity of the impact varies, effective communication remains the foundation for improving patient discharges. Potential reasons for delayed discharges would include inadequate patient assessment, poor communication, and late notification of discharges from the physicians (Gabriel et al., 2017).

In addition to the various reasons for delayed discharges, gaps in knowledge and processes are further contributing factors. A northern California county hospital, where the study was conducted, does not have a standardized method to communicate and document discharges. As a result, the multidisciplinary teams experience inconsistencies with organization, completing timely discharge tasks, and having an established method for monitoring the discharge progress.

Garg et al. (2015) concluded that discharge tasks were drawn from the healthcare provider's memory which increased the margin of error and further affected the hospital flow through delayed discharges. The research by Keniston et al. (2021) and Garg et al. (2015) conveyed the need for a communication tool that provides a centralized method for organizing, structuring, and standardizing communication among the multidisciplinary team to improve efficiency with patient discharges.

Purpose

The purpose of the study is to explore the efficacy and benefits of utilizing a discharge checklist for discharges on two medical-surgical units. The improved collaborative communication among the multidisciplinary team, through the use of a discharge checklist, decreased discharge barriers and sentinel events, achieved efficiency of care, improved discharge times, and implemented a standardized way for discharging patients (Cadel et al., 2021; Garg et al. 2015; Khanbhai et al., 2018). Beyond standardization, a discharge checklist would increase efficiency with continuity of care and decrease reliance on memory for the discharge process (Garg et al., 2015; Kuusisto et al., 2019; Patel et al., 2019).

Literature Review

Garg et al. (2015) highlighted four phases that contributed to the successful implementation of the discharge checklist into the electronic health record (EHR) at Stanford University Medical Center. In the first phase, researchers surveyed participants to identify specific needs for the checklist (Garg et al., 2015). The second and third phase consisted of the development and integration of the discharge checklist into the EHR (Garg et al., 2015). The fourth phase was a trial with 60 participants to assess the efficacy of the EHR discharge checklist (Garg et al., 2015). Researchers identified the sample size, duration of the trial, and the single-

center setting as limitations of the study. However, the study yielded increased efficiency with discharges, in addition to, improved confidence and less reliance on memory for the discharge process (Garg et al., 2015).

While implementing and adopting a discharge checklist is important for improving discharges, Verhaegh et al. (2014) prioritized the development of a structured discharge plan, through the use of a discharge bundle and conducted a study to discover a correlation between 30-day readmissions and the use of a discharge bundle. The study included patients, who were at least 18 years old and admitted for at least 48 hours, from four teaching hospitals. Verhaegh et al. (2014) identified compliance as a limitation which may have contributed to the insignificant results with regard to readmission rates and patient satisfaction. Verhaegh et al. (2014) acknowledges that the results of the study are inconsistent with other studies regarding the correlation between implementing a discharge checklist and improved readmission rates which would be a gap for future research to address.

Khanbhai et al. (2018) studied the correlation between incidences of readmissions, among psychiatric patients, and the utilization of a discharge checklist, over a three month period. Researchers believed the insignificance of the findings derived from limitations such as the duration of the study, variations with the use of the checklist, and environmental factors (Khanbhai et al., 2018). However, in contrast with Verhaegh et al. (2014) identifying non-compliance as a limiting factor, Khanbhai et al. (2018) identified compliance as a strength of the study and yielded similarly statistically insignificant results. Garg et al. (2015), Verhaegh et al. (2014), and Khanbhai et al. (2018) agreed that the duration of the study greatly influenced the statistically insignificant results and that a longer duration may have yielded more significant results.

The study by Gabriel et al. (2017) took place in a 26-bed medical oncology and hematology unit, where 65 patients participated in the study. By implementing a daily discharge goals checklist, Gabriel et al. (2017) attempted to improve discharge time in conjunction with patient satisfaction. In contrast to Verhaegh et al. (2014) and Khanbhai et al. (2018), Gabriel et al. (2017) suspected that the statistical insignificance correlated with the limitation of a small sample size as opposed to the duration of the study.

As reported in Verhaegh et al. (2014) study, a four month study by Kuusisto et al. (2019) also revealed challenges regarding the healthcare professional's commitment to compliance and utilization of the electronic version of the discharge checklist. Kuusisto et al. (2019) stated that 82 healthcare professionals at the Satakunta Hospital District faced challenges utilizing the electronic version of the discharge checklist due to technical challenges that caused additional workload. This is contrary to the results of the study conducted by Garg et al. (2015) where the electronic version of the discharge checklist yielded improved efficiency and more confidence in the discharge process. Kuusisto et al. (2019) study revealed that the discharge checklist allowed the institution to have a standardized discharge practice which allowed the multidisciplinary team to provide continuity of care, which closely correlates with Garg et al. (2015) perspective of the benefits from standardizing the discharge process.

Patel et al. (2019) research slightly deviates from the approach of the other studies by implementing a team based multidisciplinary rounding (MDR) in conjunction with a discharge script. Patel et al. (2019) conducted a nine month study at the University of Colorado Hospital (UCH), on 1584 discharged patients consisting of the pilot team (n=825) and the control team (n=759) (Patel et al., 2019). The standard discharge script identifies common discharge barriers and focuses on patients who will potentially be discharged within the next 24 hours and patients

who are at high risk for readmissions (Patel et al., 2019). With the implementation of a team based MDR with the utilization of a standard discharge script, Patel et al. (2019) was able to identify a decrease in patient length of stay and readmission rates, similarly to the study of Khanbhai et al. (2018). Patel et al. (2019) study conveyed that the multidisciplinary team improved continuity of care, communication, and coordination which correlates to the studies of Garg et al. (2015) and Kuusisto et al. (2019).

Mattessich (2020) utilized a discharge checklist that was on laminated posters that were accessible to patients as well as the multidisciplinary team. This list encouraged communication, served as reminders, and allowed the patients to feel integrated in the discharge process (Mattessich, 2020). Since the implementation of the discharge checklist, the study also determined that 45% of the patients were discharged prior to or on the expected discharge date, compared to 28% prior to the implementation of the study (Mattessich, 2020). A limitation of this study includes the presence of other discharge initiatives that were in effect simultaneously with the study (Matessich, 2020). The successful outcomes of the discharge checklist resulted in accessible care to patients, reduced overflow on units, and a decrease in surgical cancellations (Matessich, 2020).

Keniston et al. (2021) study closely correlates with Garg et al. (2015), Kuusisto et al. (2019), Patel et al. (2019), and Mattessich (2020) as researchers focused on improving discharge barriers and collaborative communication among the multidisciplinary team. Similarly to Garg et al. (2015) and Kuusisto et al. (2019) studies, Keniston et al. (2021) explored the efficacy of utilizing, specifically, an EHR based communication tool to efficiently discharge patients and enhance communication. There were 14 iterations of the discharge communication tool and 46 modifications were made throughout the pilot study (Keniston et al., 2021). As a result of the

study, Keniston et al. (2021) concluded that frequent stakeholder engagement was imperative for successful implementation of the discharge readiness communication tool. Researchers also found improved efficiency, workflow, expedited communication, and patient centered care to be the outcomes from the implementation of the discharge readiness communication tool (Keniston et al., 2021).

Summary of Research and Gap

Effective communication between the multidisciplinary team derives from the use of a discharge checklist and results in structure and development of a standard for the discharge process (Garg et al. 2015; Khanbhai et al. 2018; Kuusisto et al. 2019). Researchers have found that utilizing a discharge checklist enhances the discharge process by providing physicians with reminders to avoid relying on memory, which potentially causes errors and impedes hospital flow (Garg et al. 2015). Verhaegh et al. (2014) and Kuusisto et al. (2019) stress the importance of compliance among the healthcare professionals for the successful implementation of an electronic discharge checklist and a discharge bundle. To address compliance and discharge efficiency, Garg et al. (2015) and Kuusisto et al. (2019) integrated a discharge checklist into the electronic health record (EHR). Keniston et al. (2021) sought to utilize the EHR to enhance discharge efficiency and communication among multidisciplinary teams, which further supports research by Garg et al. (2015) and Kuusisto et al. (2019).

The works of Keniston et al. (2021), Kuusisto et al. (2019), Mattessich (2020), Patel et al. (2019), and Verhaegh et al. (2014), encourages continual improvement to the discharge checklist for better adherence and integrated workflow for the healthcare providers. Common limitations and gaps identified by researchers derive from the short duration of the studies and limited sample sizes. Gabriel et al. (2017), Khanbhai et al. (2018), Patel et al. (2019), and Verhaegh et

al. (2014) all found that addressing the limitations would yield statistically significant results. The research articles addressed many questions and aspects of improving the discharge process. However, many of the research articles lacked specific time frames to assess the discharge. By identifying this gap, a greater emphasis will be placed on quantitative time frames for assessing the discharge process in future research.

Methodology

The implementation of a communication tool improved discharge efficiency among inpatient nurses. This study explored how inpatient medical-surgical nurses, over a 5 week period, improved discharge times, from 4 hours on average to 3 hours on average, by utilizing a Discharge Checklist- with participating physicians, compared to the typical standard of not utilizing a Discharge Checklist.

Research Design

The data for discharge times were extracted by manual patient chart reviews and collaboration with a data analyst. The discharge time measurement was derived from the time the discharge order was placed- by a physician, to the time the patient was discharged from the unit.

In conjunction with the quantitative research, the study utilized the Plan-Do-Check-Act (PDCA) Model, as the Discharge Checklist is a quality improvement study. The PDCA model, by Edward Deming, consists of four recurrent phases for continuous improvement (Chen et al., 2020). The "Plan" phase was the creation of the Discharge Checklist, and staff education regarding roles and proper utilization of the Discharge Checklist. The "Do" phase was piloting the Discharge Checklist. The "Check" phase was the assessment of the nurses' utilization of the

Discharge Checklist and obtaining feedback from the nurses. The "Act" phase was the adaptation of the Discharge Checklist which derived from the results of the assessment and feedback.

Sample/ Setting

The research was conducted on Unit 1 and Unit 2, comprised of 92 inpatient medical surgical beds and the same nurse roster of approximately 150 nurses, at a northern California county hospital. The bedside nurses have an integral role in the patient's transition of care, and have experience with orthopedic, general surgery, various medical diagnoses, obstetrics-gynecologic, and psychiatric patients. The lead physician, from the Participating Physician Team (PPT), and unit case managers supplemented the study by referencing the Discharge Checklist while collaborating with the nurses. The efficacy of the entire Discharge Checklist was assessed; the sample population of nurses utilized the entire Discharge Checklist for the patient's discharge as opposed to the excluded disciplines that primarily focused on their specific portion of the Discharge Checklist.

The populations that were excluded from the study were non-nursing disciplines. The therapy departments were excluded from the sample population due to the required immediate notification of clearance, from these specialties, to ensure timely discharges from the nurses. To illustrate, the nurses received clearance confirmation via "securechat", or in-person, from physical or occupational therapy, to process the patients' discharges. The high probability of non-compliance was a determining factor for the exclusion of physicians and pharmacists.

Demographics

The demographics of the Discharge Checklist pilot consisted of approximately 150 inpatient nurses on Unit 1 and Unit 2, ranging from new graduates to nurses with over 10 years of nursing experience. The inpatient nurses had either associate's, bachelor's, or master's degrees in nursing. The nursing roster was female dominant with approximately 79% females and 21% males. The ethnicities of the inpatient nurses were Asian dominant, with approximately 80% of the inpatient nurses being Asian/ Pacific Islander, Caucasian 8%, Hispanics 7%, Black/African and other ethnicities accounted for 5%.

Data Collection

The Discharge Checklist pilot was a 5-week research study tracking hardcopies of the unit discharge logs, as well as the Discharge Checklist. The hardcopies of the standardized unit discharge logs were notebooks, completed by the medical unit clerks, consisting of written times the patients were discharged off of the unit. As the nurses utilized the Discharge Checklist, the nurses wrote the discharge order time and the time the patients were discharged on the Discharge Checklist. The hardcopies of the unit discharge logs and the Discharge Checklist were cross referenced with the electronic health records (EHR) discharge times, as data triangulation, to ensure the minimization of discrepancies with the discharge times. The data analyst retrieved the discharge data weekly, and developed the summary of the discharge pilot.

Measurement

The data was considered continuous data due to the measurement of time and was a combination of manual reviews and data from the data analyst. The EHR and unit discharge logs were utilized to ensure that the discharge times correlated and were accurate when compared to the Discharge Checklist. The EHR, Healthlink, contains time stamps of when the discharge

orders were placed, by the physicians, and when the patients would physically be discharged from the hospital system. The EHR and unit discharge logs were considered reliable sources to compare to the discharge checklist. Utilizing the unit's discharge log, EHR, and Discharge Checklist, as data triangulation, ensured the validity of the quantitative instruments.

Data Analysis

The data retrieved from the pilot was compared to the data from the 5-weeks prior to the pilot. The hardcopies of the unit discharge logs, the discharge checklist, EHR discharge logs, and discharge analytic reports were utilized to collect data through manual review. Data was reviewed weekly to track the progress of the Discharge Checklist and to identify discharge barriers. The data was analyzed by accumulating and comparing discharge times between the participating physician team (PPT) and the non-participating physician team (NPPT). In addition, the inpatient average discharge times for Units 1 and 2 were analyzed.

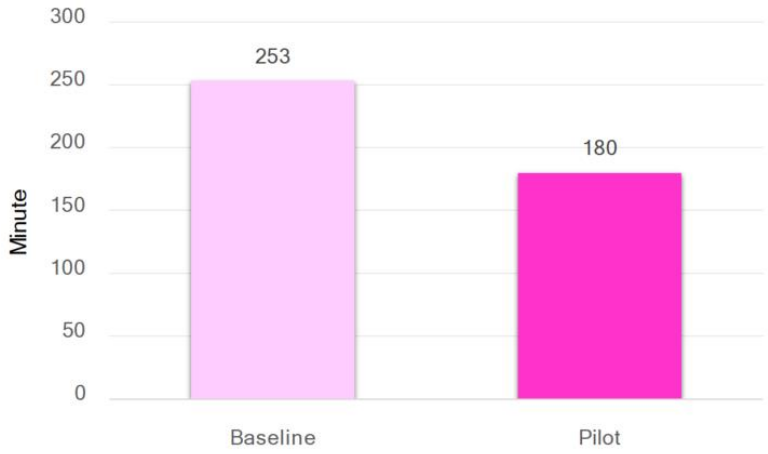
Data Results

During the 5-week baseline period, the average discharge time for the PPT was 253 minutes and discharge volume was 22 patients. After the 5-week pilot was implemented, the average discharge time for 13 patients in the PPT improved to 180 minutes. Figure 1 presents the improvement of 73 minutes for the PPT after implementation of the Discharge Checklist. In contrast, the NPPT, during the 5-week pilot, had an average discharge time of 228 minutes and a discharge volume of 24 patients. Presented in Figure 2, the PPT had an improvement of 48 minutes in comparison to the NPPT. During the 5-week baseline period, Units 1 and 2 had a cumulative average discharge time of 344 minutes and discharged 391 patients. During the 5-week implementation of the Discharge Checklist, Units 1 and 2 collectively improved the

average discharge time to 276 minutes and discharged 491 patients. There was an improvement of 68 minutes, presented in Figure 3, and improved efficiency resulted in an additional 100 discharges.

Figure 1

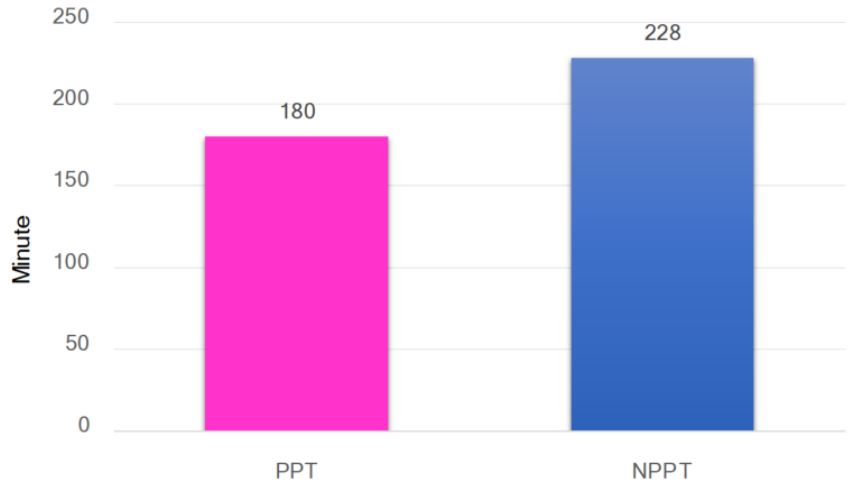
Participating Physician Team (PPT): Baseline vs. Pilot



Note. PPT had an improvement of 73 minutes during the Pilot (180 minutes) compared to the Baseline (253 minutes). A decrease in average discharge time (minutes) is desired.

Figure 2

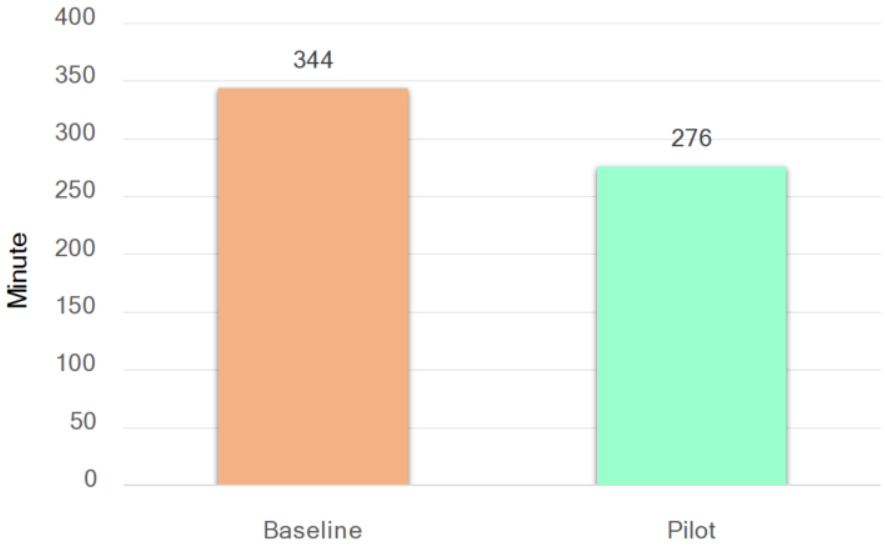
Participating Physician Team (PPT) vs Non-Participating Physician Team (NPPT)



Note. When compare to NPPT (228 minutes), PPT (180 minutes) had an improvement of 48 minutes during the Pilot. A decrease in average discharge time (minutes) is desired.

Figure 3

Unit 1 & 2: Baseline vs. Pilot



Note. Unit 1 & 2 cumulatively had an improvement of 68 minutes during the Pilot (276 minutes) compared to the Baseline (344 minutes). A decrease in average discharge time (minutes) is desired.

Discussion

Organization and enhanced collaborative communication with multidisciplinary teams are benefits that derive from standardization of discharges, by utilizing discharge checklists. Garg et al. (2015), Khanbhai et al. (2018), Kuusisto et al. (2019), Patel et al. (2019), Mattessich (2020), Keniston et al. (2021), and the 5-week pilot yielded improved coordination, discharge times, and collaborative communication among the multidisciplinary team. Verhaegh et al. (2014), Kuusisto et al. (2019), and the 5-Week pilot experienced issues with staff compliance. During the 5-week pilot, improvements were witnessed in discharge times. Additional research is encouraged to address the limiting affects of noncompliance, with the adoption of a discharge checklist, and the affects of implementing a discharge checklist for a longer duration of time.

Conclusion

Over the 5-week pilot period, discharge times improved from 4 hours to 3 hours on average, by utilizing a Discharge Checklist with the PPT. In addition to improved average discharge times for PPT, Unit 1 and Unit 2 improved average discharge times as well. Units 1 and 2's average discharge times improved from over 5.5 hours to 4.5 hours. Discharge efficiency also improved which led to more patients being discharged earlier in the day from 6 in the evening to 2 in the afternoon. Communication among the multidisciplinary team led to fewer incident reports, per the manager of the case managers. Future research should consider implementing an extended pilot period as this 5-week study was limited by the nursing director and lead physician. While this study was conducted over a 5-week period, the benefits of implementing a discharge checklist provides insight to the potential benefits of integrating a discharge checklist into an EHR workflow to greatly impact the hospital discharges on a larger scale.

Limitations/Concerns

Protecting patient information and maintaining patient confidentiality are crucial actions for addressing ethical concerns. The patient's personal and medical information was on the hardcopy of the Discharge Checklist which required the staff to take necessary precautions such as returning the completed Discharge Checklist to the designated binder. Personal information from the participating nurses was not required for the 5-week pilot.

Major strengths include improving the communication process among the nurses and multidisciplinary teams, improving discharge times, improving patient outcomes and efficiency of care, decreasing errors in the discharge process, and decreasing the prevalence of incident

reports. The weaknesses include the under utilization of the checklist, by the nurses, which delayed patient discharges and negatively impacted the workflow of other disciplines. Feasibility concerns upon implementing the pilot on Unit 1 and Unit 2 include the compliance with the study, staff buy-in, staffing shortages, and staff burn out.

Implementation of the Discharge Checklist enhanced communication among the multidisciplinary team, which in turn improved the discharge process. Research conveys the improved outcomes of implementing a discharge checklist for patients and healthcare professionals. As a result of enhanced communication, patients greatly benefitted from improved efficient care and timely discharges.

2/3 Surgical Discharge Checklist

DRoom: **DC Order/Cond:** [Pt Label Here] **DC Time:** **Transportation:** ☐ Ambulance pick up time @ _____ ☐ Bus ☐ Family/ Friend ☐ Taxi ☐ Other _____ **Where:** ☐ Home ☐ Rehab ☐ SNF ☐ Home Health ☐ Respite ☐ Other ☐ Hospice ☐ Shelter ☐ Homeless ☐ Jail ☐ Clothes ☐ Report ☐ Food ☐ (-) COVID-19 Test ☐ Ride	**MD/Team:** ☐ DC / Conditional order ☐ DC Instructions ☐ DC IV, Lines ☐ DC Tele ☐ Meds/Narc ☐ MD Note ☐ Appointments ☐ Specialty Clearance ☐ Teaching Supplies: ☐ ABD Binder ☐ Dietary Supplies ☐ Foley /Leg Bag ☐ Ice Therapy Machine ☐ Nephrostomy ☐ Ostomy ☐ Wound ☐ Other Conditional:	**RN:** ☐ Order ☐ Nursing Comm ☐ Call TOC ☐ Immunizations ☐ Return belongings ☐ Safe/ Security ☐ Pharm ☐ Appointments ☐ Medication Detail ☐ MRSA Screening ☐ Sepsis Screening ☐* Admission Belongings ☐ * DC Belongings ☐ * AVS ☐ DC Instructions ☐ Clinical Reference ☐ MD Note ☐ Lines (PIV, PICC, Midline, HD, etc) ☐ Teaching _____ ☐ Supplies ☐ Red Card ☐ DC Note/Chart	**TOC:** ☐ Bedside/ Lounge ☐ DM Kit ☐ Lovenox **Transport:** ☐ Ordered **PT/OT:** ☐ Clearance ☐ Form ☐ Faxed Form ☐ Equipment _____ ☐ Supplies **RT:** ☐ Equipment ☐ Home O2 ☐ Portable _____ ☐ Supplies	**Imaging:** ☐ MRI ☐ Xray ☐ US ☐ CT ☐ TTE ☐ NM ☐ Vid Swallow ☐ Other **Labs:** **Dietary:** ☐ Supplies **Speech:** ☐ Swallow Eval **Consult:** ☐ Diabetes ☐ Other	**CM:** ☐ Home Health ☐ IV ABX, med ☐ PT ☐ Wound Care ☐ Hospice ☐ Bed ☐ SNF/ Packet ☐ Other **SNF/ Packet:** ☐ SNF Packet ☐ Lines ☐ Skin ☐ AVS ☐ Interfacility ☐ SNF Report ☐ Ambulance ☐ Prescription * Weekend / Holiday hardcopy (-) COVID-19 Test **SW:** ☐ Bus Token ☐ Taxi Voucher ☐ Resources ☐ Financial Assistance(# in AVS) ☐ Other

Additional Comments:

Please Contact Becky Le, Josefina Larios, or Minnie Hong for Questions & Suggestions

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