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Perinatal Patient Management

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University of San Francisco
CNL Online Program
Prospectus Summary Brief
Perinatal Patient Management

Specific Aim:

This project aims to improve patient management in the perinatal departments, including the discharge process. We will have 100% staff participation to facilitate bed management.

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Background:

The microsystem for this project is the Perinatal Department in the medical center. The medical center is a 200-bed hospital serving the residents of an urban area. The perinatal areas of labor & delivery (L&D), antepartum, and postpartum (OB) are highly productive units. The medical center has 9 LDRs, 10 postpartum rooms, and 4 postpartum overflow rooms on the pediatric unit. On average, 8-10 births occur each day. The antepartum unit also has 10 beds for high-risk maternity patients. Historically, the medical center has lacked the bed capacity and nursing staff to accommodate the needs of maternity patients. Patients are redirected to other network and non-network medical centers due to lack of bed availability, inadequate nurse staffing, and poorly managed patient movement.

Patient management in the perinatal department has been an issue for some time and several solutions are underway. The nursing shortage was resolved with 3 phases of hiring and perinatal nurse training in 2014. Also during the previous year, postpartum patients were temporarily transferred to the pediatrics unit, offering an additional 4 maternity beds that reduced the number of redirected patients at the medical center. This year, an additional hospital floor with 9 postpartum beds will open to further reduce the need to redirect patients to other facilities.

Supportive Data:

In December 2014, the medical center experienced its highest birth rate to date at 280 infant births for the month (D. Leong, personal communication, January 3, 2015). In addition, the medical center experienced an unprecedented 2,851 total births for the year (D. Leong, personal communication, January 3, 2015). During the year 2014, the medical center also gained over 10,000 new patient members (J. Boffi, personal communication, February 13, 2015).

With the increase in membership and birth rate, all processes require streamlining to maximize productivity. Historically, patient care has been delayed or refused secondary to bed availability and nursing shortages. The fishbone diagram (See Appendix A, Figure 1) considers the functional aspects within the perinatal departments that are considerable in this project. Functions indicated in blue have been initially resolved. Functions indicated in purple are ongoing processes. Items in green are affected by patient choice and behavior. The project will focus on the functions of the microsystem indicated in red.

Other processes that delay timely discharges from the postpartum unit and further contribute to lack of bed availability are birth certificate completion and hearing screen exams. The Health Information Management Department (HIM) is responsible for col-

lecting birth certificate data from the patients. Currently there are only 2 birth certificate recorders employed through HIM. The current data collection process begins at day of life (DOL) 1. The birth recorder visits the patient's room 2-3 times before the birth certificate is finalized. Oftentimes, the mother is breastfeeding, resting, or the father isn't present. The high number of visits is time-consuming and disruptive to the new family. Patients frequently complain about the number of disruptions during the maternity inpatient stay. Responding to the family's request of "less disruptions" further delays the completion of the birth certificate. This delay effects length of stay and bed capacity.

Currently, hearing screen tests are exclusively completed by 2 trained LVNs in the Perinatal Department. One hearing screener is scheduled each day from 8am to 4pm. On average, it requires 1 hour to complete the entire process of communicating with the family, completing paperwork, and the exam. With the birth rate increase, compounded by the occasional sick or vacation day, hearing screens are delayed or not being completed at all. The hearing screen is frequently the final patient discharge criteria to be met. This delay effects patient satisfaction, length of stay, and bed capacity. The 2 LVNs are also responsible for hearing screen exams in the Neonatal Intensive Care Unit and the Pediatrics Unit of the medical center which further complicates the need for improved efficiency.

Microsystem Status Relative to the project:

The SWOT analysis (Appendix B, Figure 1) identifies the major strengths and weaknesses of the project. Foreseeable threats to our process improvement are the rate of membership growth and increasing standard of care in the community.

Search Strategies:

References in this review support the project of improving patient management in the perinatal departments. The key words "patient management + bed occupancy," "patient satisfaction + hospital efficiency," "maternity + bed occupancy," and "bed occupancy + hospital efficiency" yielded the sufficient references to support this project. The search was limited to literature between 2009 and 2015.

Databases Used: The literature search was completed using CINAHL.

Summary of Evidence:

Ryckman et al. (2009) explain that predictive planning and strict bed management significantly improve hospital efficiency and patient satisfaction.

Enriquez et al. (2009) attest that patient management can improve through an interdisciplinary approach.

Lin et al. (2013) utilized the activity theory to resolve barriers to timely discharges, such as communication breakdowns, misaligned goals, and teamwork challenges.

Graham, Patterson, and Bush (2014) assert that the reorganization of traditional patient care models has improved patient throughput and satisfaction.

Jones (2012) proved that a process of predictive planning and advance management will reduce unnecessary patient turn-aways.

The Association of Women's Health, Obstetrics, and Neonatal Nurses (2008) supports quality measures to increase timely access to healthcare which further improves birth outcomes in all populations.

Theoretical Direction:

The activity theory by Lev Vygotsky (learningtheories.com, 2015) supports an established framework for an evolving system. This theory explains the interconnected relationships found throughout a large network of systems. Organized teams of people in the patient care microsystem are working towards the common goals of safe, efficient, quality patient care. There are several organized teams that have been working on the global aim of patient management in this project. Additional bed space has been added and new nurses have been hired and trained. The specific goal of this project is to contribute to patient management.

Stakeholders:

Stakeholders in this project include all maternity patients and their families, chief nursing officer, physician in chief, administrative house supervisor, perinatal nurse managers, obstetricians, perinatal nursing body and support staff.

Business Case:

A special purpose budget for the implementation of the birth certificate and hearing screen process is shown in Table 1. Due to the minimal additional costs related to this project, the special purpose budget spans only 1 year. Direct costs for this project include nurse training and equipment purchase. The costs are based on the additional training of 30 RNs to the hearing assessment process and equipment upgrade to handheld devices. A new, convenient handheld device that can easily move to each patient's room will be purchased for the department. Each nurse will receive 4 hours of inservice on the process and equipment. If necessary, a hearing technical representative will educate the Nurse Educators, CNLs, and CNSs in their respective areas. Once trained on the new equipment, the team will inservice the nursing staff in each department. By utilizing the equipment consultants and existing nursing team, it will not be necessary to hire additional employees for this training. Indirect costs will include training materials.

The potential savings from implementation are outlined in Table 2. This table shows the costs related to increased length of inpatient stay and redirecting patients to other medical centers. Enriquez et al. (2009) found that by establishing a management system of coordinated patient care, it reduced length of stay by 3.5 hours. The saved time translates to a savings of 350 hours per 100 patients. Redirecting patients to other medical centers costs an average of \$1000 per patient transport and an additional \$4000 reimbursement in patient care. A total potential savings per 100 patients is \$519,250. A total project savings of \$517,150 remains after calculations in Table 1 are applied.

Table 3 outlines the quantitative project benefits to the organization. Based on a salary of \$100,000 annually and the CNL student contribution (\$50 rate per hour, 220 total hours), the annual net benefit for the organization is \$464,150. By combining the data from Table 1.1 Special Budget Project and Table 1.2 CBA and subtracting the employee salary plus CNL student contribution, the employer generates the amount indicated in total savings (Table 3). Qualitative benefits that cannot easily be measured for the purposes of this project include staff satisfaction and good leader relationships.

Table 1

Special Purpose Budget 2015

Nurse Training	120 hours (30 RNs x 4 hours each)
Nurse Hourly Wage	\$55
Training Material	\$500
Hearing Machine Replacement Equipment	\$5000
Total Project Costs	\$12,100

Note. Direct costs of nurse training and equipment upgrade.

Table 2

Cost Benefit Analysis

LOS Reduction	3.5 hours		
Patients	per 100	350 total hours	
RN Hourly Rate		\$55	\$19,250
Redirects	per 100	\$5000	\$500,000
Total			\$519,250

Note. Potential savings related to a reduction in length of stay and number of facility redirects.

Table 3

Employer Financial Benefit from Project

Efficient Staffing	\$10,000		

Improved Scores	\$5,000		
Improved Patient Flow	\$10,000		
ED Efficiency	\$1,000		
Decreased Injury	\$10,000		
Project Savings	\$507,150		
CNL Project Hours	\$11,000		
Total Project Savings	\$554,150		
Estimated Salary		-\$100,000	
Total Hospital Benefit			\$454,150

Note. Quantitative employer benefit to employer after applying the project direct costs and estimated CNL salary paid by organization.

Steps for Implementation:

As this project has been underway since 2013, the activities timeline (Appendix C, Figure 1) includes past, present, and future project goals. The remaining priority areas for the perinatal project are the birth certificate and hearing screen processes.

On February 2, 2015, the project team met with the manager of Health Information Management Department. This department is responsible for complete collection of birth certificates per the State of California requirements. Beginning March 9, 2015 all newly admitted maternity patients received a birth certificate form in their admissions packet. The intent of this process change is to begin the birth certificate paperwork as early as the first day of admission. Follow-up meetings are scheduled and indicated on the timeline.

Changes to the hearing screen process have not been determined. The project team initially contacted the hearing screen technical support for a replacement hearing screen machine quote and consultation. Additional nurses were trained to perform hearing screens during the perinatal hiring phase in 2014 and 2015. These nurses are currently performing hearing screens within the departments. A process improvement project will be determined May 2015.

Evaluation Methods:

Evaluation of the current and future activities are indicated on the timeline. Discharges that are delayed by the birth certificate process are tracked by the nurse management team. Data is collected on a daily basis and submitted via email to the team. The new birth certificate process will be reviewed at 1 week, 2 weeks, and 1 month. The HIM department and perinatal department will provide feedback related to their roles and discharge delays, respectively. The HIM manager will represent the HIM department during these reviews.

Evaluation of the hearing screen process will be determined as the new work flow develops. Similarly, discharge delays due to this screening are being tracked by the team and communicated via email.

Results:

In January 2015, routine team meetings were held at the beginning of each week to review scheduled or anticipated admissions to the units.

Three phases of RN hiring were completed between September 2014 and January 2015. Each cohort was trained in all areas of perinatal patient care: labor and delivery, antepartum, and postpartum. An additional 30 RNs were trained to the current hearing screen process.

In February 2015, an initial meeting was held with the Health Information Management (HIM) department manager. A new birth certificate completion process was developed that included instructional information for the new parents. The instructional information was inserted in the new admission packets for patients admitted to labor and delivery unit and were distributed beginning 3/9/2015. Upon receipt of the packet, new parents were instructed to complete the birth certificate form, conveniently and timely. Follow-up meetings with the HIM department were held at 1 week and 2 weeks after 3/9/2015. Another follow-up meeting was held 1 month after 3/9/2015. Future process follow-up will be provided by the HUM department on a bi-weekly basis via email.

In April 2015, the medical center's Capital Committee approved the purchase of 1 handheld hearing screen device. The new equipment was ordered from the vendor the following week.

Outcomes:

The project aim to improve patient management in the perinatal departments has been successful. The weekly meetings provide the medical team and other disciplinary departments with the opportunity to predict patient flow throughout the week. Brief daily meetings have also been scheduled for each change of shift hour. During these meetings, the nurse management team develops strategies to manage patient throughput during the next shift and the succeeding hours.

As a result of the 3 phases of RN hiring, staffing deficits within the perinatal departments have been resolved. All nurses hired since September 2014, are competent in all aspects of perinatal patient care. This mixed competency skill set in the perinatal departments offers flexibility in the staffing model and adaptability to changes in patient census.

The birth certificate process was modified to begin immediately upon admission. During the 1 month follow-up meeting with HIM, it was determined that the expectation was not clear for the new parents. Based on patient feedback, the informational packet was revised to include clarification of the birth certificate form. On average, 3 birth certificates are completed in advance of the birth recorder's visit to the patient room. A total of 6 forms were completed, in advance, one day last week.

The hearing screen process improvement project is ongoing. An additional 30 RNs have completed training on the current hearing screen process. The newly trained RNs are distributed amongst all working shifts. This improvement process also requires an equipment upgrade. In April 2015, 2 new pieces of equipment were approved for purchase. The date of acquisition is unknown at this time. Once received, a new training process will be determined.

Recommendations:

Close management of patient care processes in the perinatal departments must continue beyond the timeframe of this project. The ongoing weekly and brief daily meetings have significantly improved communication amongst the nursing management and medical teams. Identifying and understanding potential barriers to patient throughput is critical to the ongoing reduction of length of stay and patient redirects.

Although 3 phases of hiring and training were successfully completed, RN retention rates are unpredictable. Nearly 10 RNs have transferred to other network medical centers near their homes. The current labor agreement with the nurses' union allows for lateral transfers without limitations. Core staffing within the perinatal departments remains adequate, but needs close managing of recruitment to avoid deficits.

The new birth certificate process will require ongoing perseverance by the nursing staff and HIM department. The HIM department has agreed to participate in the project for an indeterminate amount of time. Continued communication with the department is recommended to quickly identify new issues. Weekly meetings can be replaced with weekly or bi-weekly email updates.

The hearing screen process improvement project needs additional direction. A review of the current protocol is recommended after the acquisition of the new handheld hearing screen device. Once trained on the new device, RNs will be easily equipped to conduct hearing screens in the patients' room. Including the hearing screen test as routine patient care by the primary RN is recommended.

Appendix A Fishbone Diagram

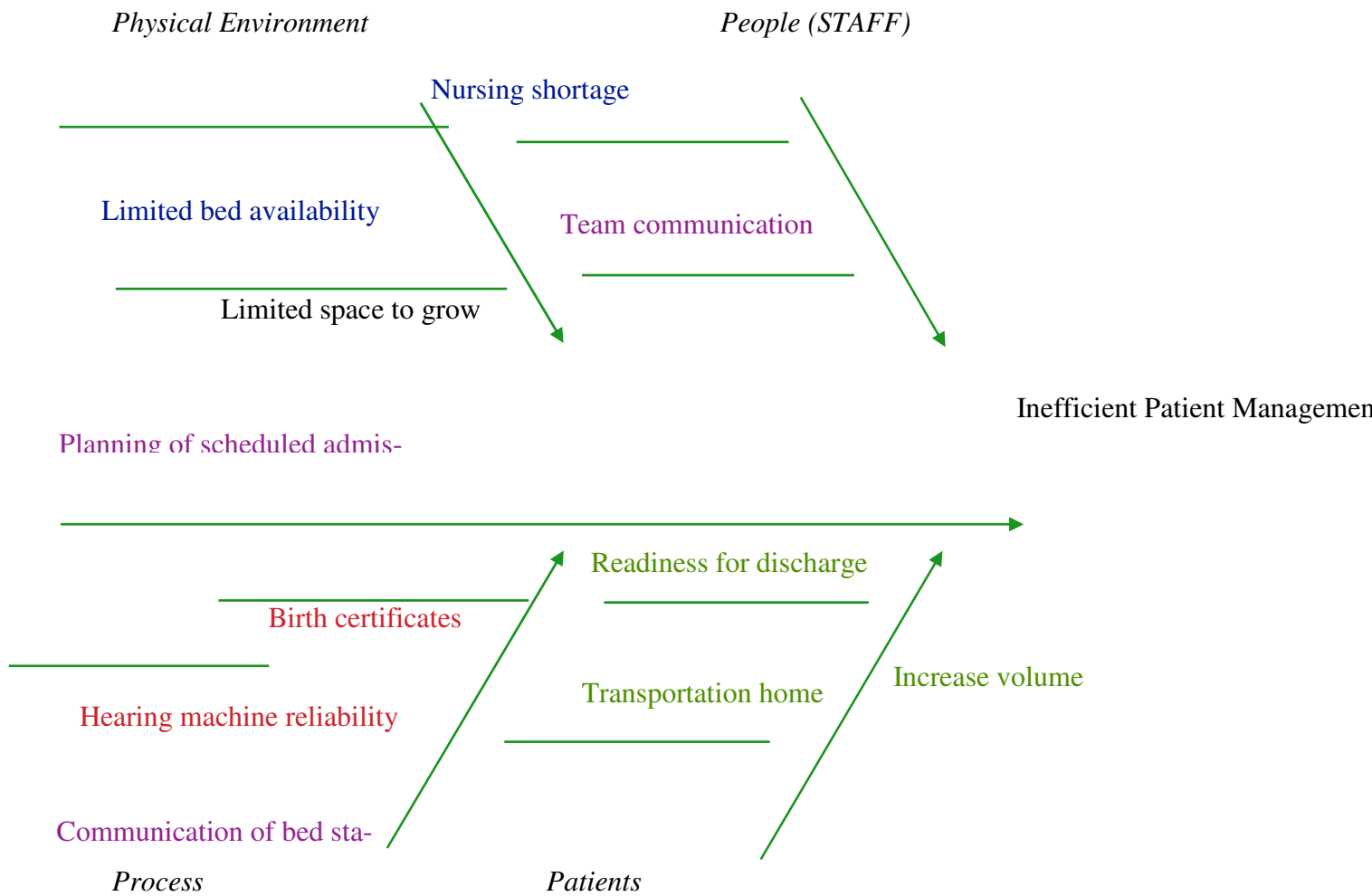


Figure 1. Fishbone diagram by completion status. Items are color coded to reflect completion status in project.

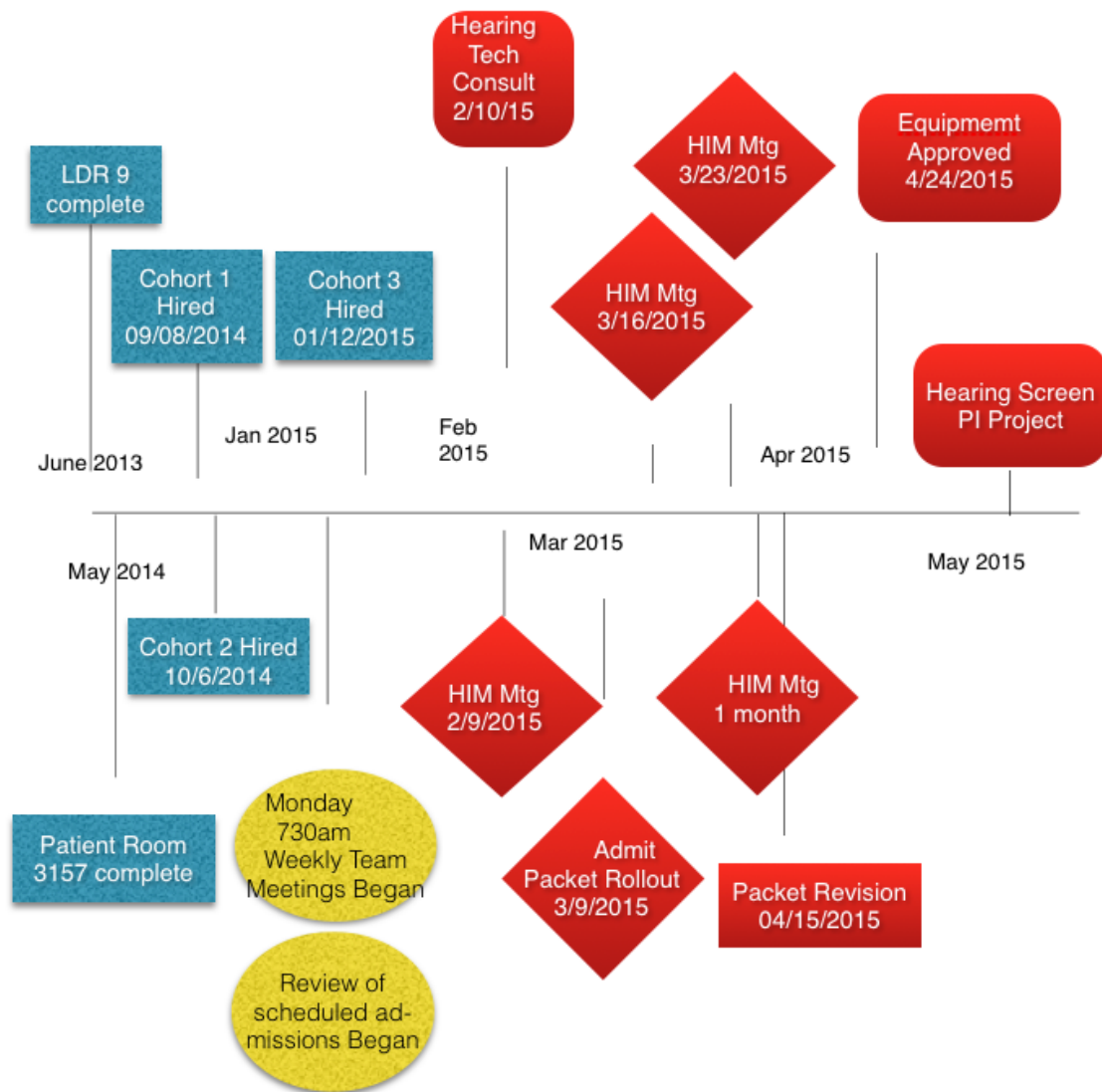
Appendix B SWOT Analysis

Figure 1. SWOT analysis of macrosystem. This figure analyzes the internal external processes and personnel that affect the project.

<i>Internal</i>		<i>External</i>	
Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> * Nurse management team stability * Nursing staff support * Consistent messaging from nurse management * Established processes for birth certificate * Established processes for screen * Leadership support 	<ul style="list-style-type: none"> * Delays in meeting discharge criteria: hearing screen, birth certificate * Access to care * Inadequate number of trained personnel * Inadequate number available equipment * Patient cooperation * Patient readiness 	<ul style="list-style-type: none"> * Membership growth * Competitive RN recruitment * Organizational regional support * Strong medical community * HCAHPS 	<ul style="list-style-type: none"> * Membership growth surge * Excellent care at competitors * HCAHPS

Timeline

Figure 1. Timeline of project.



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