Gathering and Designing a Multi-Disciplinary Surgical Clinical Ward Handover System at the SAN Hospital

Patrick Mumme
310262135

COMP5703
Information Technologies Project
Semester 1, 2012

under the direction of
Prof. Jon Patrick
June 12th, 2012

Surgical Clinical Ward Handover System

Abstract

Acknowledgements

Contents

Glossary

A Infection by Airbourne.

ACAT **A**ge **C**are **A**ssessment **T**eam.

AD **A**s **D**esired Diet (anything the patients wants to eat).

AIN **A**ssistant **i**n **N**ursing.

AMO **A**ccredited **M**edical **O**fficer.

Analgesia pain medication.

Anti-emetic medication against nausea.

Arthroplasty plastic surgery of a joint.

B **B**owels.

BD twice a day.

BGL **B**lood **G**lucose **L**evel.

Bolus a rounded mass of food or pharmaceutical preparation ready to swallow, or such a mass passing through the gastrointestinal tract.

BP **B**lood **P**ressure.

BSL **B**lood **S**ugar **L**evel.

C infection by contact.

CF **C**lear **F**luids.

CMO **C**areer **M**edical **O**fficer (doctor on call).

Comorbidity other illnesses that a patient has that are not part of the diagnosis but affect the health of the patient and possibly the treatment (ie. Diabetes, Hypertension).

Cont **C**ontinence (bowels).

CVC **C**entral **V**enus **C**atheter.

D infection by droplet.

DW **D**ry **W**eight (weight of patient before breakfast).

Dx diagnosis.

EDD **E**stimated **D**ate of **D**ischarge.

EEN **E**ndorsed **E**nrolled **N**urse. Have completed further medication endorsement. Allowed to administer Schedule 2,3, and 8 medications via all routes except intravenous, epidural, intraventriuclar and intrathecal. Any medication which requires checking prior to administration must be checked with a RN or Midwife. Excluded also from administering fluids or medications via CVC, PICC and femoral lines as well implanted devices or arterial lines.

EN **E**nrolled **N**urse. Nurses undertook 18/24 month course at TAFE or related health facilities). Even more restricted than EEN.

FF **F**ull **F**luids incl. milky drinks.

HITH **H**ospital **i**n **t**he **H**ome.

Hx history.

IDC **I**n-**D**welling **C**atheter.

IM **I**ntra**m**uscular (routed into muscle tissue).

IVC/F **I**ntravenous **C**annula (a catheter that is inserted into a vein for supplying medications or nutrients directly into the bloodstream) / **I**ntravenous **F**luids (fluids given through a vein inserted catheter.

L Light Diet.

LOS **L**ength **o**f **S**tay of a patient.

MO **M**edical **O**fficer.

MRN **M**edical **R**ecord **N**umber.

MRO **M**ethacilin **R**esistant **O**rganism; an organism that shows resistance to Methicillin, a very strong antibiotic.

MRSA **M**ulti **R**esistant **S**taphylococcus **A**ureus; any strain of Staphylococcus aureus that has developed resistance to beta-lactam antibiotics, which include the penicillins (methicillin, dicloxacillin, nafcillin, oxacillin, etc.).

N Neutropenic (very low white blood cell count). Caution must be taken by staff as they could pass something to a patient.

NBM **N**il **B**y **M**outh.

NCR **N**urse **C**are **R**ecord.

ND night shift.

NFR **N**ot **F**or **R**esuscitation.

NG **N**asal-**G**astric Tube.

NP **N**urse **P**ractitioner is a RN educated and authorised to function autonomously and collaboratively in an advanced and extended clinical role. Requires addition 1.5-2 years of study.

NUM **N**ursing **U**nit **M**anager.

OT **O**ccupational **T**herapist.

PAC **P**ressure **A**rea **C**are.

Palliative relieving or soothing the symptoms of a disease or disorder with effecting a cure.

PEG **P**ercutaneous **E**ndoscopic **G**astrostomy tube; tube that is inserted into the stomach to give nutrition.

PICC **P**eripherally **I**nserted **C**entral **C**atheter.

PRN as required medication; these are not part of the patients regular medications).

QID four times a day.

RN **R**egistered **N**urse. a graduate nurse who has been legally authorized (registered) to practice after examination by a state board of nurse examiners or similar regulatory authority, and who is legally entitled to use the designation RN..

Rx treatment pertaining to medication / subscriptions.

S strict precaution (Infection Risk).

SC **S**hower **C**omode (in chair).

SC Fluids **S**ub**c**utaneous Fluids; fluids administered just under the skin and not into a vein.

SH shower.

SP sponge bath in bed.

SPC **S**upra **P**ubic **C**atheter.

ST shower with trolley.

TB **T**owel **B**ath.

TDS three times a day.

TEDS brand of Anti-embolic Stockings that are used to prevent blood clots.

TKVO **T**o **K**eep **V**ein **O**pen.

TL **T**eam **L**eader.

TPN **T**otal **P**arenteral **N**utrition; all nutrition is given through a catheter.

Trainee Consultant/Registrar doctor learning his or her speciality.

U **U**rine **OR** MRO Risk (Unknown Status) mean a risk assumption has been made but not proven.

VTE **V**enous **T**hrombo**e**mbolism; i.e. blood clot in the vein.

Warfarin anticoagulant medicine; nurses need to be aware of patients receiving this due to higher risk of bleeding and in case of bleeds.

1. Introduction

1.1. Client Profile

Originally opened in Wahroonga on January 1 1903 as a 70 bed Sanitarium, the Sydney Adventist Hospital (SAH), known to the local residents as 'The San', is a not-for-profit hospital of the South Pacific Division of the Seventh-day Adventist Church. Today, the hospital is a private hospital offering acute care and currently has 358 licensed overnight beds. SAH is the largest single campus private hospital within NSW and was the first of its kid to be accredited by the Australian Council on Healthcare Standards. SAH is proud to have won the Australian Private Hospitals Association Award for Clinical Excellence in the category 70 beds and over in 2006.

The San prides itself on being the single biggest employer within the Hornsby-Kruing-gai area employing over 2,2200 staff and around 700 accredited medical pactitioners. Together, the SAN staff care for more than 50,000 inpatients and about 160,000 outpatients. The San is also known for its maternity wards and is proud to be bringing over 2,000 babies a year into the world. The SAN, being one of few private hospitals to offer emergency care, admits over 20,000 patients annualy making it NSW's largest and busiest emergency care department among private hospitals. The SAN offers medical services ranging from acute surgical, medical and obstetric care to complex cardiac and orthopaedic procedures. The SAN boasts cutting edge facilities that include a dozen operation theatre suites, 3 state-of-the-art Cardiac Catheterisation Laboratories and Australiaś first dual source CT scanner. The SAN is also responsible for operating the San Day Surgery Hornsby and Dalcross Adventist Hospital, located in Killara.

Having the mission statement "Christianity in Action", the SAN not only offers world class care to the patients within the hospital, but also to disadvantaged third world men, women and children as part of its HealthCare Outreach program. Since its inception in 1986, the HealthCare Outreach program has undertaken 100 trips to 13 different countries culminating in over 2,800 surgeries and lives saved.

1.2. Project Description and Scope

1.2.1. Project Description

The SAN Hospital Information System has to service many different clinical specialities and environments. This project will develop a prototype application in the form of a simulator of a novel HIT system for surgical patients. These patients typically have specific and predictable post-surgical outcomes and hospitalisation time-frames, as outlined in various surgical clinical pathways (e.g. Urology such as, Greenlight Laser Prostatectomy, Ear, Nose and Throat (ENT) and Plastics). Caring for these patients requires multidisciplinary nursing and allied health staff information systems. Constructing a requirements document will be a complex task but gives students the richest possible experience in understanding all the stages of requirements gathering, systems design and systems implementation. The project will use a research technology simulator that enables the process of requirements gathering and system design to be integrated as a single process and thereby enable validation of requirements by their implementation into a design simulator.

1.2.2. Scope

The project will commence with the gathering of requirements by meeting and interviewing various clinical staff fulfilling a variety of roles on the surgical ward, level 11. The student will also gather all paper based forms in use on the ward as references during the design process. Upon completion of the first phase of requirements gathering, a requirements document will be created and will represent the basis for design decisions. The student will design forms including the clinical handover in the simulator as well as obtain end user feedback during the majority of the semester. Towards the end of the semester, the student will undertake user acceptance testing as well as evaluations of the work done. The project will conclude with a first draft of the clinical handover form and a presentation to SAN staff. The project will finish at the end of the academic semester.

1.3. Project Objectives

- Collect the requirements for a Clinical Handover for use by nurses, allied health and medical staff in the care of surgical patients
- Produce an accurate record of the information each worker needs access to in the form of a requirements document including process flows
- Design and develop a prototype which simulates an electronic clinical information system with handover processes for nurses, doctors and other clinical staff

1.3.1. Risks

Ref #	Probability	Impact	Description	Mitigation
R.1	High	Medium	Reduced performance through use of new technology	Increase allotted tool usage time
R.2	Low	High	Unable to complete project objectives due to simulator issues	frequent communication with simulator developers
R.3	Medium	Medium	Scope creep	Clearly outline scope at outset of project

1.3.2. Assumptions

Ref #	Description
A.1	The simulator will not need to connect to existing SAN applications
A.2	We will have access to a simulator developer
A.3	A project manager will be available to use to assist us in our work at the hospital
A.4	We are not developing a system for actual use

1.3.3. Issues

Ref #	Priority	Description	Owner
I.1	High	Simulator bugs & issues	Simulator Developer
I.2	Medium	Exposed to immense amount of information	Student
I.3	Medium	Sporadic staff availability	Student & PM
I.4	Low	Time constraints due to university courses	Student

1.4. Anticipated Outcomes / Results for the Project

1.5. Benefits of the Project

2. Process

2.1. Overview

2.2. Tools and Skills

2.3. Literature Review

2.4. Scope and Schedule

3. System Design

3.1. Requirements Analysis

3.2. Form Gathering

3.3. Designing

4. Evaluation

4.1. Testing Procedures

4.2. Interpretation of Results

5. Future Work

6. Reflection

6.1. Contribution

6.2. Difficulties

6.3. Lessons Learned

6.4. Future Suggestions

7. Conclusion

7.1. Concluding Remarks

7.2. Strengths and Weaknesses

7.3. A Second Time

7.4. Future Work

A. Appendix

Include the following:

- Roles at SAN wiki page
- Scans of original questionnaires
- Screenshots of SANSURGIMS (Web and Designer)
- Scans of important forms (Nursing Care Record & Patient History)