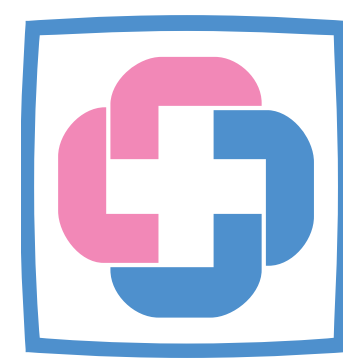




Singapore Healthcare
Management 2015



KK Women's and
Children's Hospital
SingHealth

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Background

The High 5s Project, established by WHO in 2007, is an international collaboration carried out in seven countries- Australia, Germany, France, the Netherlands, Singapore, Trinidad & Tobago and the United States of America- and coordinated by the WHO Collaborating Centre on Patient Safety, The Joint Commission. Its mission is to facilitate implementation and evaluation of standardized patient safety solutions within a global learning community, to achieve measurable, significant and sustainable reductions in high risk patient safety problems.

Introduction

High 5s Project's Correct Site Surgery (CSS) protocol has been implemented in the Major Operating Theatre (MOT) from 2011 with success. This was through collaboration of KKH High 5s team with the Ministry of Health Singapore and the MOT team; and with full support from senior management. The protocol recommends three minimum requirements for preventing wrong site surgery; pre-operative verification, site marking, and time out.

Gearing toward standardisation, Day Surgery Operating Theatre (DSOT) took the initiative to integrate the protocol into their workflow in mid-2011. They made use of the checklist being utilised in MOT and conducted training sessions for staff to familiarise the protocol until it was successfully implemented. In January 2013, as it is also the goal of High 5s team to spread patient safety culture throughout the hospital, it started regular supervision for DSOT by means of audit and feedback, and offered recommendations to resolve identified discrepancies. This served as guidance to DSOT, which provided them better understanding of the protocol.

Objectives

1. To evaluate the compliance rate for complete pre-op verification, site marking and complete time-out in Day Surgery
2. To assess the spread of the culture of patient safety from Major Operating Theatre to Day Surgery

Methodology

A preliminary observation survey was done in January 2013 to assess the practice. It was confirmed that CSS protocol was successfully integrated into DSOT workflow. Randomized retrospective documentation audit of 30 cases per month from January 2013 to January 2015 was performed. Data analysis was done and feedback was provided to the team. Human Factor Analysis (HFACS) was also done to identify other possible causes behind non-compliance (Table 1). Interventions were made.

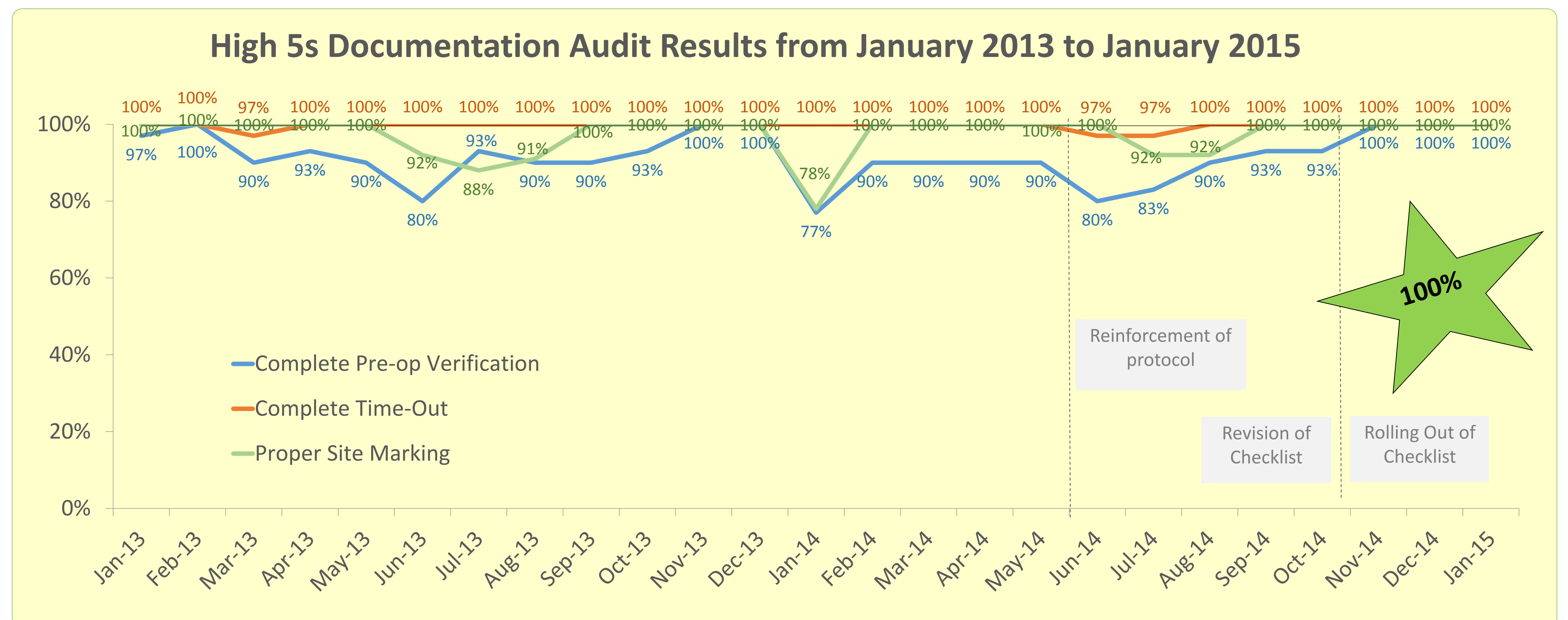


Figure 1: This graph shows average compliance rates of **97%** and **100%** for site marking and complete time-out, respectively; while **92%** for complete pre-operative verification with rates ranging from 77% to 100%. Remarkable improvement is noted from **November 2014 to January 2015** whereby all three elements have achieved **100%** compliance.

Results and Discussion

Documentation audit (Figure 1) showed average compliance rates of 97% and 100% for site marking and complete time-out, respectively. The average rate for complete pre-operative verification was 92%, with rates ranging from 77% to 100%. The aim was to achieve 100% rates for all the three elements. We concur with Clarke et al.¹ who had found preoperative verification the most effective of the three steps. Hence, analysis was done for the fluctuating rates of preoperative verification. It was noted that a part of the checklist – site marking section - was consistently not filled out. This was likely due to new doctors unfamiliar with the protocol and the checklist itself. In addition, there was high patient turn-over rate during the months with lower rates. The increase in number of cases had a great impact on workload. Also, human factors analysis (HFACS) (Table 1) was done to analyse other possible causes behind non-compliance. It was found that the checklist layout was quite confusing especially for new staff; hence it was revised and simplified (Figure 2). Interventions were done including reinforcement of protocol through sharing of audit findings and sessions emphasizing the equal importance of good practice and accurate documentation. This consequently improved the compliance rates for all three elements to **100%** in November 2014.

Figure 2: Revision of checklist – site marking section simplified

Conclusion

In conclusion, the culture of patient safety has indeed stepped into DSOT as evidenced by full compliance of the protocol. The hospital has already adopted a good patient safety culture. Good communication and closer collaboration between doctors, nurses and other DSOT staff is a key factor in adopting the culture. Human factors analysis could help in bridging the gaps by providing a tool for recognizing the possible causes of non-compliance. This could lead to developing data-driven intervention strategies to improve compliance.

Future Plans

Continue monitoring and attain sustainability at Day Surgery and spread patient safety culture to other areas performing invasive procedures.

Table 1. Human Factors Analysis for Day Surgery Incomplete Pre-operative Verification

HFACS Level	Causal Category	Causal Factor	Description
Unsafe Acts	Errors	Skill-Based Error	Checklist error by nurse
		Perceptual Error	New doctors - unfamiliar with the protocol did not fill out a part of the checklist
Preconditions for Unsafe Acts	Environmental Factors	Physical Environment	High patient turn-over rate during peak months
		Technological Environment	Checklist - site marking section was confusing
	Condition of Operators	Adverse Mental State	Stress
		Adverse Physiological State	Physical fatigue
	Personnel Factors	Crew Resource Management	Poor communication issue between team members



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Reference

1. Clarke JR, Johnston J, Blanco M, Martindell DP. Wrong – site Surgery: Can we prevent it? Adv Surg. 2008;42:13-31