25 MINUTES TOO LATE

Reducing The Percentage of Patients Waiting Over 25 Minutes in the KKH General X-Ray Department (DDII)

Singapore Healthcare Management 2014

KK Women's and Children's Hospital
SingHealth

Lim Peng Hoon (Sponsor) KKH
Ervin Tan KKH
Sharon Ong KKH
Paul Tan KKH
Park Yujong KKH
Kon May Sin KKH

INTRODUCTION

Background Information

Singaporean patients surveyed have stated they are willing to wait up to 30 minutes for their scans in the radiology department (Rafidah et al., 2011). DDII's target waiting time for patients requiring X-ray imaging is set at 25 minutes or below.

Issues/Problems Identified

Prior to the project, there was a perceived high percentage of outpatients who had a wait time exceeding this target. This value fluctuated monthly (ranging from 9.2% to 4.4% in the 12 months preceding project commencement), signifying a process instability- the result of inconsistencies in the existing workflow.

Moreover, the general X-ray workload has been increasing for the past 5 years. For instance, since Jan 2013, the monthly outpatient caseload has increased an average of 14.9% for the same selected month in the previous year. Conversely, manpower has remained constant, while value-adding resources remain stagnant or were reduced.

As DDII has no scheduling system for outpatients, patient load comes in waves with clinic appointment times. This strained our operational capacity to effectively serve our patients.
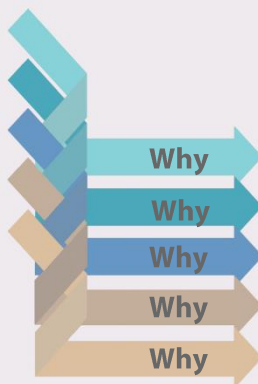
Goals

1. Reduce outpatients waiting over 25 minutes to under 4%.
2. Increase or maintain staff satisfaction.
3. Decrease average patient wait time.

METHODOLOGY

5 Whys technique was used to identify the root cause of the problem

Situation: Up to 9.2% of outpatients wait over 25minutes for X-rays each month

Why Because there are so many waiting as the system cannot cope with crowd influx

Why The in- and out-patients arrive at the same time

Why Outpatients referred by clinics; inpatients called down by counter staff , all during peak times

Why Counter staff don't know when the peaks are

Why They are not on the ground at the X-ray rooms

Plan — Do — Study — Act

The following PDSA cycles were used to test solutions over 100 days:
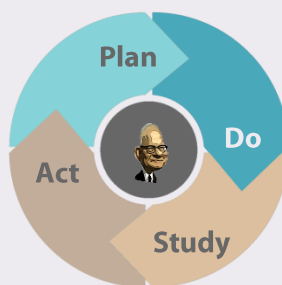
1. Empowering radiographers to schedule flow of inpatients needing X-rays.
2. Relocating resources used by radiographers to reduce walking, thus minimising the total distance travelled during operations
3. Optimizing operation flow by reducing size of facilities (swapping chairs for smaller stools to give more room for radiographers to work)
4. Catering for demand fluctuation using the chase demand method to increase the capacity of the workforce and reduce downtime in scheduling inpatients for x-ray. This was achieved by rescheduling staggered staff lunch hours to better cope with demand peaks during identified time periods

Cycles 2, 3 and 4 were used to ensure radiographers had time to carry out Cycle 1. All changes tested were successful and thus were implemented.

RESULTS

98.80% **Waiting Time < 25 Min**
As of 1 July 2014, almost all outpatients have waited under 25min for X-rays.

95% **Staff Satisfaction**
As work processes have been improved, result sustainability corresponds to high staff satisfaction with the changes.

-36.1 % **Average Wait Reduction**
Patients now have their wait times reduced over a third. A strong inverse correlation exists between waiting time and patient satisfaction exists (Michael et. al., 2013).

100% **Patient Satisfaction**
All patients are satisfied with the new wait times, with the majority being extremely satisfied. By reducing wait time, we have achieved high patient satisfaction.

88.9 % **Perceived Improvement**
In- and out-patients believe waiting time has improved. Value is defined by our patients; reaffirmation of value-adding changes was determined by a post-project patient survey.

IHA FINALIST
Singhealth Innovative Healthcare Awards 2014 Finalist

TES GOLD
Team Excellence Symposium 2014 Gold Award

EPS MERIT
Temasek Polytechnic Engineering Project Show 2014 Merit Award
*As received by our interns who based their submission on this project.

$55k **Soft Savings**
$54,842.50 per annum value was generated. This project cost nothing to implement.

CONCLUSION

Innovate to Advance

Organisations are constrained by limited resources and tight bottom lines. We have to innovate around these limitations and advance our service offerings to strengthen our competitive advantage. Impactful changes must be inventive and challenge established norms (e.g. workflow and roster planning).

Care to Heal

Most patients opined in the MOH Patient Satisfaction Survey 2012 that waiting time should be improved upon. As frontline staff, we are now empowered to improve our service offering to give patients the best possible care, having tackled this common source of patient dissatisfaction.

Educate to Empower

The success of this project has educated radiographers that small changes can make large differences. Through frequent department quality project sharing sessions, we enhance corporate culture and personal growth by educating colleagues on workflow streamlining and increasing operational efficiency.

Michael M., Schaffer S.D., Egan P.L., Little B.B., & Pritchard P.S. (2013). *Improving Wait Times and Patient Satisfaction in Primary Care*. Journal for Healthcare Quality, 35(2), 50-59.

Rafidah, A. B., Chin Chin O., Nurul A. G., Chandra P. M., Fuzhen D., ... Lai P.C. (2011). *To Reduce the Waiting Time at Ultrasound Suite*. Retrieved from RSNA 2011 Storyboards: http://rsna.org/RSNA_2011_Quality_Storyboards.aspx