

Project Title

NHG 1-Health's Improvement Journey

Organisation(s) Involved

Tan Tock Seng Hospital

Project Period

Start date: Oct 2008

Additional Information

TESA 2017, Quality Day Award 2014, IOC Poster presentation 2013

Project Category

Process Improvement, Care Redesign, Quality Improvement, Productivity

Keywords

Tan Tock Seng Hospital, Operations, Kaizen Office, Process Improvement, Care Redesign, Quality Improvement, Productivity, Specialist Outpatient Clinics, Improvement Tools, Lean Methodology, Value Stream Mapping, Efficient Care, Cost Saving, Operating Theatre Utilisation Rate, Value Added Process, NHG 1-Health, Standardisation of Cataract Surgery, Standardisation of Medications, Rental Negotiations

Name and Email of Project Contact Person(s)

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Asian Hospital Management Awards

***Required Fields**

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Facility Management and Financial Improvement

(How improvement in the predictive, preventive and corrective maintenance of equipment and facilities improve the standards of safety and care, thus increased the financial situation of the hospital.)

This award recognises improvements in the predictive, preventive and corrective maintenance of facilities for better standards of safety and care. And looks at how the hospital utilises the facilities in improving the profits of the organisation. More weight will be given to how well predictive and preventive maintenance is carried out and how it affected the financial management of the facility.

Complete All Information Below:

Project Title (Maximum 256 Characters): NHG 1-Health's Improvement Journey

Date Project Started (Maximum 128 Characters) (i.e. May 24, 2015): 5 Oct 2008

Department Name (Maximum 256 Characters): NHG 1-Health

Names of Key Staff Involved in this Project (Maximum 512 Characters) (Separate names with comma):

A/Prof Wong Hon Tym, Ms Pauline Gan Seok Choon, Dr Roy Kan Kum Chuen, NM Han Juat Ken, Ms Michelle Phua, Ms Kris Leng Yong Xin, ANC Xu Lan, SN Sun XiaoFeng, PAN Juhariyah Nurhayati, SAN Lily Joji Seguiro, SN Bernice How, Mr Arvin Felix Magiliman

1. Provide some background as to how the project originated e.g. what problem/opportunity were you faced with. (Maximum number of words – 350)

NHG 1-Health is an extended facility of Tan Tock Seng Hospital (TTSH) that was established in Ang Mo Kio in the year 2008. The goal of NHG 1-Health is to bring excellent healthcare services closer to the community.

NHG 1-Health started off with a focus on providing Specialist Outpatient Clinic (SOC) services, such as Eye, General Surgery, Gastroenterology, Ear-Nose-Throat, Orthopaedic, Urology and X-ray services. At the initial stages, general surgery was performed for external piles and lumps. Cystoscopy was also available in 1-Health. The initial business model was to provide different specialities to private patients in one clinic, hence giving rise to the name of “NHG 1-Health” for our facility. As 1-Health was not yet known to the Singapore population, the team held promotional talks on Saturdays to raise public awareness on our services, as well as different types of diseases including cataract and colon cancer.

In 2013, we changed the focus of our business model. All SOC services were returned to TTSH and 1-Health started to provide solely endoscopy and cataract surgery. Due to this change in business model, medications that would no longer be dispensed at 1-Health were transferred back to TTSH Pharmacy. The number of cataract patients also gradually increased, especially after the introduction of Value Added Process (VAP), which was developed by A/Professor Wong Hon Tym to streamline the workflow for eye cataract surgeries.

Challenges include low patient volume, poor utilization of the Operating Theatre (OT), as well as a significant financial loss from managing the facility.

Constantly striving to provide quality healthcare services, the team in NHG 1-Health has been working diligently to further enhance the management of the facility to bring about financial improvement.

2. Describe what was required to address the aforementioned problem/opportunity. Outline what your targets/goals were and whether any approach was outlined to correlate this program with better patient service and quality of care. Also, provide an overview of the team that was put together to undertake this. (Maximum number of words – 250)

The team agreed on a target of 70% OT utilization rate. The target workload after change in business model was 5000 procedures per year.

To achieve these goals, the approaches mainly involve the increase of the OT utilization by creating a comprehensive doctor coverage system, reducing facility management costs and improving workflow efficiencies.

Before 2015, there was only coverage for doctors who were on sick leave, thus resulting in a severe under-utilization of OT slots when doctors applied leave for non-medical reasons. The approach to create more coverage contingencies was thought to allow the listing of more patients, regardless of doctors' availability. This facilitates better utilization of OT slots and equipment, as well as fewer disruptions to patients' and caregivers' plans. A better OT utilization also brings about greater revenue and financial improvement.

The team aimed to improve workflows by making amendments to our operating model. Having an increased workload will signify that our facility can serve a greater number of patients, while generating greater revenue.

Our team strives to reduce the costs of managing the facility in a more efficient way to deliver quality healthcare services to our patients.

Another key approach was improvements to VAP by analysing workflow processes to identify areas of inefficiencies that were targeted to enhance productivity. The approach was to remove any unnecessary steps, or develop more efficient steps to replace the workflow. Enhancing VAP further streamlines the cataract workflow, allowing any workload increase to be easily accommodated without compromising efficiency or patient safety.

3. Outline the steps or stages of the project and how these were executed by the team. (Maximum number of words – 200)

2010

- Value Stream Mapping (VSM) to reconfigure OT layout and human traffic flow
 - Minimize cross-traffic and increase efficiency
 - Better coordination and patient accessibility
 - Time savings

2013

- Standardization of cataract surgery instruments into a standard assembly and layout
 - Easy accountability
 - Reduced consumable wastage
- Standardization of medications
 - Eliminate resource wastage
 - Reduce inconvenience for patients
 - Improve work efficiency

2014

- Creation of a comprehensive doctor coverage system
 - Implemented a coverage schedule to ensure 2-3 covering doctors
 - Prevents cancellation of scheduled surgeries
 - Allows listing of new cases
- Creation of visual cues on eye dilation
 - Facilitated better communication

2015

- Revisions to decantment criteria
 - Amendments include allowance of wheelchair-bound patients
 - Increased patient volume and revenue
- Development of a VAP Cataract Pack
 - Customized to contain consumables required for each surgery, instead of staff frequently ordering consumables from different companies and opening individual consumables
 - Time savings
- Development of a reminder badge to increase hand hygiene compliance rate
 - Minimize cross infection

2017

- Successful negotiations with landlord for a 10%-decrease in monthly rental costs after lease renewal
 - Cost-savings channelled to operationalise another endoscopy suite

4. Demonstrate the results of the project and how this was beneficial for the patient. How did you measure this? Present quantifiable information such as before and after measurements and percentage improvement. Outline the financial impact in terms of investment/reduction of costs in equipment and facilities improvement. (Maximum number of words – 200)

- Successful rental negotiations
 - Total rental savings of \$207,591 over three years
- VAP
 - 80% of patients surveyed had a more positive experience in 1-Health, compared to other healthcare experiences
 - VSM increased the efficiency of turnover time for cataract surgery from 31.3 minutes [2009] to 17.5 minutes [2011]
 - Cost-savings of \$1582 and time-savings of 2 minutes for each surgery from standardization of surgical instruments
 - Improvement by 62.5% in median value of total preparation time required in a month from 537.8 minutes [2015] to 201.75 minutes [2017]
 - Increased direct patient care, enhancing patient experience
- Enhancement of staff compliance for hand hygiene
 - Survey: Increased staff awareness by 90%
 - Hand Hygiene compliance rate improved from 55% [July 2015] to more than 80% [September 2015]
- Overall
 - 49% spike in patient volume from 1125 cataract cases [2015] to 1676 cataract cases [2016]
 - 21.7% positive growth in workload from 4569 procedures [2014] to 5561 procedures [2015], and a further 12.9% growth to 6281 procedures [2016]
 - Upward trend in OT and endoscopy suite utilization rate, from 56.6% [2015] to 72.7% [2016] and 74.7% [2017]
 - 2017 and 2018 Winners of “Exemplary Stars Award” at The Exceptional Stars Awards

5. Please give any other information, including third party testimonial regarding your project which you think would help convince the judges that this project (or program) should win this category. (Maximum number of words – 300)

- 1) Testimonial from Adj A/Prof Yip Chee Chew, Head and Senior Consultant, Ophthalmology and Visual Sciences Department, Khoo Teck Puat Hospital [attachment].**
- 2) Testimonial from Ms Ong Wan Kee Lynette, Deputy Director, Transformation (Kaizen Office), Tan Tock Seng Hospital:**

Kaizen Office works closely with NHG 1-Health in their improvement journey. Though fraught with many challenges being an offsite facility, the team takes a forward-looking attitude to improve continuously to bring healthcare services closer to community while meeting business sustainability.

The team embraces a VAP to be operationally lean and efficient. This requires a major mindset shift – value-adding steps to deliver care efficiently are carefully identified and put in place. For example, to reduce unnecessary bed transfer of patients in the waiting area and the operating room (OR), beds in the waiting area were changed to Stryker OT standard beds. With this, the patient would be pushed directly from the waiting area to the OR, without requiring any change of beds. This reduces the number of beds used per patient to just one, reducing the amount of inventory and beds to be disinfected. Placement of surgical equipment in the OR was carefully planned such that the patient would be transported along a straight path from the waiting area to the OR, without any turning or manoeuvring. This reduces the time required to transport the patient from the waiting area to the OR, improving overall turnaround time. The team enforces the use of standard work to reduce variability e.g. surgical equipment are standardized to reduce variability and inefficiency during pre-op preparation. Visual management facilitates communication between staff e.g. visual cues on eye dilation. The facility also used 6S in storage management to reduce time needed to collect supplies and facilitate timely replenishment.

The team's continuous improvement attitude is highly commendable.