Achieve Sustainable Hospital Excellence Through 5-S in an Emergency Department in Hong Kong

Vincent F. K. Tsoi
Adjunct Lecturer, HKBC, HKSAR

Dr. C. C. Chan
Department Operations Manager, Tuen Mun Hospital, HKSAR

Y. W. Lau
Registered Nurse, Tuen Mun Hospital, HKSAR

Heyman Tang
Ward Manager, Tuen Mun Hospital, HKSAR

ABSTRACT

5-S is the first step towards TQM. Over the last century, the Japanese have formalised the technique and named it as 5-S Practice. Since 1993, Sam Ho has improved and defined its terms in English/Chinese and developed the world's first 5-S Audit Checklist. In the article, an emergency department of a Hong Kong hospital was examined against 5-S 50-point Checklist for the improvement of their quality assurance systems towards its accreditation process with Australian standards. The findings evidently reveal that the impact of 5-S on hospital quality assurance in the unit are positive. Riding on the above scenario, the research aim is to identify whether the 5-S practice is a suitable and effective tool for healthcare quality assurance in an emergency setting which is led towards its accreditation process set by other mechanisms.

Keywords – Hospital Emergency Service, Quality Assurance, 5-S, Hospital Operations, Sustainable Excellence, ACHS, Triage

1.0 Introduction

5-S is the crucial step towards quality management in order to achieve sustainable hospital excellence in healthcare settings. The Tuen Mun Hospital (TMH) is an acute regional general hospital providing a comprehensive range of acute, ambulatory and community services in Hong Kong. In 2010, TMH attempted to achieve excellence to ensure high hospital standard and quality patient cares through a stringent process of accreditation of the Australian Council on Healthcare Standards (ACHS).

As one of the busiest departments in TMH, Accident & Emergency Department (AED) was the gateway to receive acute and emergency patients in the hospital. One of the co-authors was the head nurse working in the busiest AED in Hong Kong. It is indeed a big challenge for the AED to lead over hundreds of healthcare providers to deliver high quality and safe emergency service for about 1.07 million of population in the region.

Over the last century, the Japanese have formalized a technique and name it as 5S Practice (Osada, 1991). Prof. Sam Ho improved and defined its terms in English/Chinese and developed the world's first 5-S Audit Checklist in 1993. The AED attempted to adopt the concepts of the Audit Tool to facilitate the department to meet all required standards and criteria in order to assist the hospital to obtain full accreditation in 2010.
2.0 The 5-S Practice in Detail

In order to be able to comment whether 5-S practice is useful, the proprietary 5-S Audit Checklist developed by Ho (1995, 1999) is exhibited below (Table II). Following the rule of TQM (i.e., KISS – Keep It Short and Simple), the check-points are mostly self-explanatory.

Table II. The 5-S Checklist (ver. 10)

Underlined points are directly related to the prevention of Contagious diseases, including the SARS.

<table>
<thead>
<tr>
<th>5-S</th>
<th>What © Prof. Sam Ho – <a href="mailto:samho@hk5sa.com">samho@hk5sa.com</a></th>
<th>Where</th>
<th>How (✔/ X)</th>
<th>Who</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1: Structurise</td>
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<tr>
<td>1.1</td>
<td>Throw away/return things which are not needed.</td>
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<tr>
<td>1.2</td>
<td>3-R: Reduce, Re-use and Re-cycle, paperless, etc.</td>
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<tr>
<td>1.3</td>
<td>“Needed things” stored: low, medium &amp; high usage</td>
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<tr>
<td>1.4</td>
<td>Personal belongings kept to the minimum</td>
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<tr>
<td>1.5</td>
<td>Treat defects, leakage, breakage and their causes</td>
<td></td>
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<tr>
<td>1.6</td>
<td>One-is-best #1: Daily “Things-to-do” List</td>
<td></td>
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<tr>
<td>1.7</td>
<td>One-is-best #2: one set of tools/stationery/1-page form</td>
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<tr>
<td>1.8</td>
<td>One-is-best #3: one hour meeting (be concise)</td>
<td></td>
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</tr>
<tr>
<td>1.9</td>
<td>One-is-best #4: one stop service for customer</td>
<td></td>
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<tr>
<td>1.10</td>
<td>One-is-best #5: one location file (e.g. LAN server)</td>
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<tr>
<td>S-2: Systematise</td>
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<tr>
<td>2.1</td>
<td>Everything has a clearly designated name &amp; place</td>
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<tr>
<td>2.2</td>
<td>Every place should have a ‘responsible person’ label</td>
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<tr>
<td>2.3</td>
<td>Security on doors/ cabinets &amp; key mangt.</td>
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<td>2.4</td>
<td>Functional placement for leaflets, tools and material</td>
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<tr>
<td>2.5</td>
<td>Filing standards and control master list</td>
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<tr>
<td>2.6</td>
<td>First in, first out arrangement</td>
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<tr>
<td>2.7</td>
<td>Zoning, placement marks, signage and badges</td>
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<tr>
<td>2.8</td>
<td>Neat notice boards (include zoning &amp; labels)</td>
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<tr>
<td>2.9</td>
<td>Easy-to-read notices (include expiry date)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2.10</td>
<td>30-second retrieval of tools, document &amp; parts</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>S-3: Sanitise</td>
<td></td>
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<tr>
<td>3.1</td>
<td>Individual cleaning responsibility assigned</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>Make cleaning and inspection easy (15cm)</td>
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<tr>
<td>3.3</td>
<td>Clean the places most people do not notice</td>
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<tr>
<td>3.4</td>
<td>Cleaning inspections and correct minor problems</td>
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<td></td>
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<tr>
<td>3.5</td>
<td>Regular sparkling cleaning campaigns</td>
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<tr>
<td>S-4: Standardise</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>4.1</td>
<td>Transparency (minimize doors, covers &amp; locks)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4.2</td>
<td>Straight line and right-angle arrangements</td>
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<tr>
<td>4.3</td>
<td>‘Danger’ warning, fire extinguisher &amp; exit signs</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>4.4</td>
<td>Dangerous goods, mechanical safety measures</td>
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<td></td>
<td></td>
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<tr>
<td>4.5</td>
<td>Work instructions and ‘passed’ labels</td>
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<td></td>
<td></td>
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<tr>
<td>4.6</td>
<td>Electrical wiring neatness and switch labels</td>
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<tr>
<td>4.7</td>
<td>Energy Preservation – Aircon temp. mark/switch</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4.8</td>
<td>Physical handling standards and instructions</td>
<td></td>
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</tr>
</tbody>
</table>
4.9 Colour coding -- paper, files, containers, etc.
4.10 5-S responsibility labels on floor plan or at site
4.11 Prevent noise and vibration at source
4.12 Safety Policy and Risk Assessment
4.13 Fool-proofing (Poka-yoke) Practices
4.14 Park-like environment (garden office/factory)
4.15 5-S & OHS Museum (photos before/after)

5-S: Self-discipline

5.1 Execute individual 5-S responsibilities
5.2 Wear, if necessary, safety helmet/gloves/shoes/etc.
5.3 Good communication & phone call (magic-word)
5.4 Daily 5-minute 5-S Practice
5.5 One day processing of job/tasks (see 1.6)
5.6 Safety-box and practise dealing with emergencies
5.7 Organisation Chart and Performance Indicators
5.8 Design and follow the 5-S Manual
5.9 Quarterly 5-S Audit and Improvements
5.10 Seeing-is-believing and Keep It Short & Simple (KISS)

3.0 Methodology

This article is going to describe the implementation of 5-S based on the 50-point Audit Checklist created by Prof. Sam Ho. The co-authors would first conduct departmental assessment in the AED to identify improvement areas to meet the 45 standards and criteria according to the ACHS requirement. As a result, a validated application of the 5-S checklist on hospital operations has been developed. Then, a major case study with some crucial areas was discussed in this paper by one of the co-authors who pioneered to promote the methodology there in the position of head nurse. Some key success areas with the best practices (5S) would be shared.

Table I. Comparison table of pre- and post-implementation of 5-S in the unit

<table>
<thead>
<tr>
<th>Area-A: Plaster Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>**Before Change - **</td>
</tr>
<tr>
<td>Throw away/return things which are not needed. Rearranged for essential consumable (1.1)</td>
</tr>
</tbody>
</table>
Area-B: Duty Assignment

**Before Change**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name</th>
<th>Assignment</th>
<th>Meal</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LAU Wei Shan</td>
<td>N1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TSANG Lai-Shan</td>
<td>N1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>HAI Pat Kwai</td>
<td>N1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>YAU Hin Wah</td>
<td>N1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>CHAN Yat Sing</td>
<td>N1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>TAM Hu Fung</td>
<td>N1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**After Change**

Duty Assignment to all staffs with checking for compliance (2.2)

Area-C: Store Room

**Before Change**

Labelled for expiry dates, quantity, and designated amount and easy to clean and inspection (S-3)

Area-D: Triage Station

**Before Change**

Everything has a clear ‘name’ & ‘home’ to prevent wrong patient record retrieval (4.10 & 4.12)

**After Change**
Area-E: Staff Pantry Room

<table>
<thead>
<tr>
<th>Before Change -</th>
<th>After Change -</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Before Change Image" /></td>
<td><img src="image2" alt="After Change Image" /></td>
</tr>
</tbody>
</table>

Execute individual 5-S responsibilities (5.1)

3.1 The Implementation of 5-S After Departmental Assessment For The AED

3.1.1 5-S Applied to Triage
The AED is the busiest AED in Hong Kong and this was evidenced during the week of the survey when daily attendance increased from approximately 619 to some 800 on two separate days in 2010. The triage area is staffed by dedicated triage nurses, administration staff and security personnel. All emergent patients will be sent to the triage station for primary and emergency care by triage nurses. Patients including those who arrive by ambulance and are waiting on trolleys are all triaged in the same large area. Whenever a patient registers for treatment, the triage nurse classifies the patient as requiring critical, emergency, urgent, semi-urgent or non-urgent treatment with service pledge according to patient condition. Therefore, the department should ensure the service target and using the 5-S audit tool items 1.1, 1.3, 1.6, 1.9, 2.2, 2.5, 2.10, 3.1-3.4, 4.1, 4.4, 4.8-4.10, 4.12, 4.15, 5.1, 5.6 & 5.9-10 to assure 5S in men, machines, materials & methods in the triage station, triage healthcare workers, triage consumable, triage patient and operation flow management. As a result, the triage standard could be maintained and meet the ACHS criterion.

3.1.2 5-S Applied to Privacy
There was limited privacy in A&E area and a recommendation to review and address this has been made. The AED used notice, colour codes' floor lines and signage to delineate zones and markers for patients and relatives. (2.7 & 4.12 of 5-S checklist). It is was suggested that the whole issue of personal privacy versus clinical observation and volume of patient load would benefit from review and discussion with the development of guidelines and practices that are consistent with cultural norms and practices. With the application of the 5-S checklist 2.8, 4.1-4.2, & 4.12, a further suggestion is that the chairs could be turned 90 degrees to face away from these patients and the staff in attendance during the survey believed this to be a workable solution that would still meet their needs for performing observation.

3.1.3 5-S Applied to Trauma Service
The AED was the first to establish a Trauma Service staffed with a Trauma Team. In the six months to June 2010, there had been some 58 activations which is a steady increase over the 2009 utilization data. The processes and criteria for response are well documented and equipment and consumables for both clinical use and staff protection is managed and stored appropriately using 5S Checklist 1.1-1.3, 1.5, 1.6, 1.9, 1.10, 2.1-2.10, 3.1-3.5, 4.1-4.5, 4.8-4.12, 5.1-5.3, 5.6-5.1. The equipment is immediately checked and restocked following each trauma team deployment.
3.1.4 5-S Applied to Identification of Patients
Misidentification of patients will be a serious consequence leading to medication incident, wrong operation procedure, wrong treatment, or even patient deaths. In the AED, it was encountered with 18 incidents noted as regards to patient misidentification and leading to medication incidents, wrong specimen collection, wrong treatment sheets disposal in July 2010. A taskforce group was formed to perform the root cause analysis and identify operation gap leading wrong patient identification in the AED. A comprehensive operation improvement works with service strategy enhancement had been conducted with the utilization of concepts in the 5-S checklists 1.1, 1.9, 4.5, 4.9, 4.12, 5.1, 5.3, 5.9 & 5.10. After then, 18-months comparison study found that the incident rates were sharply reduced from 18 to 6 (66%) in Jan 2012.

3.1.5 5-S Applied to Treatment of Mentally Ill & Disturbing Patients
The risk management and assessment of mentally ill and disturbed patients to assure patient and staff safety is crucial in the AED. In order to design safe and effective patient flow and care protocol, with the illustration of the checklist 4.12, 5.2, & 5.8, the AED had also been critically reviewed with 5S approach regarding staff safety perspective. An excellent result with high level of injury prevention assurance was noted.

3.2 Achievements After the Incorporation of 5-S
With the incorporation of 5S management in the AED, a number of well deserved awards and recognition had been sought in many occasions. These include an Outstanding Staff and Teams Award from the Hospital Authority presented to the A&E Department Workplace Violence Sub-Committee in 2007, with a further nomination for the same award in 2008 for the Toxicology Team. At the 2007 Cluster Hospital Quality Conference, the AED was first runner up for work in “Shortening Triage Waiting Time”. A number of poster presentations have also been recognized at professional and Hospital Authority conferences in Hong Kong.

In comparison, Princess Margaret Hospital (PMH) was certified by the HK 5-S Association as the world’s first 5-S registered hospital. PMH is the 3rd largest hospital in HK with around 1,200 beds and 3,500 employees. Only two non-conformances were identified with a number of observations. The recorded 5-S results over the previous year after implementing 5-S were:

- Safety – Accident rate dropped by 15%
- Hygiene – Cross-infection dropped from 31 to 16 cases
- Quality – Clinical errors dropped by 20%
- Productivity – Saving in manpower cost at US$1.6million p.a.
- Image – Patient/Visitor satisfaction improved from 73% to 80%

3.3 How 5-S Can Facilitate Hospital Excellence Especially in the AED
The benchmark concept of hospital excellence applying to 5 Hong Kong HA hospitals is so-called ACHS. ACHS is an international accrediting organization recognized by the International Society for Quality in Healthcare (ISQua). It is selected as the partner accrediting agent for the Pilot Scheme for Hong Kong hospitals by the Food and Health Bureau, Hong Kong. The ACHS carries out a comprehensive EQuIP standards review and consultation process at least every four years to ensure the standards.

ACHS standards are grouped under the 3 major functional groups, titling clinical, support and corporate criteria. Further there are 45 EQuIP in total under the umbrella of these functional groups. 14 of them are mandatory criteria with 5 levels of grading system, namely Little Achievement (LA), Some Achievement (SA), Moderate Achievement (MA), Extensive Achievement (EA), and Outstanding Achievement (OA).
Mandatory criteria are those where a rating of Moderate Achievement (MA) or higher is required to gain or maintain ACHS EquiP 4 accreditation.

In fact, the working flow of ACHS echoes the traditional managerial process which can broadly be summarized by five key steps.

**Vision ➔ Mission ➔ Behaviour ➔ Action ➔ Culture**

(Ho, 1999)

In the new context, an action-oriented paradigm via 5-S approach is introduced. In brief, the new paradigm reverses the above process. This is illustrated in the below.

**Action ➔ Behaviour ➔ Mission ➔ Vision ➔ Culture**

In the business world, this is nothing new. Peter and Waterman (1982) have already figured out from over 46 successful firms that most of them choose “action” as step number one in their pursuit towards excellence. Emergency unit is a battlefield in the world of hospitals. An action-oriented approach can enhance hospital excellence particularly in the quality assurance process within an emergency setting. Built on “action” foundations, the vision will help develop a quality service culture within the emergency setting. Sustainable quality improvement would be the key to success within this cultural atmosphere.
Being action-oriented, 5-S is thus a powerful quality tool for everyone to get involved in the improvement process. Therefore, it is recognized as a very effective way to implement the new paradigm.

3.4 Key Success Areas and 5-S Experience in the AED

3.4.1 Shortening Triage Waiting Time

Triage nurses usually work in a highly stressful environment in emergency department. There were about 50 percent of the attendances that could hardly achieve the key performance indicators (KPI) in which was expected to be attended by triage nurses within 10 minutes. The overcrowding environment and long waiting time will put harmful effects to nurses. Most importantly, prolonged waiting time can delay assessment and treatment of emergent patients leading to potential fatal errors and high consequence. By adopting FADE cycle (below) and re-engineering with 5-S experience of triage process, the AED aimed at shortening the triage waiting time and improving staff morale.

Method

Phase I: FADE cycle with 5-S Experience

Focus: data collection, impact analysis, brainstorming, multivoting & problem statement;

Analysis: data in-depth analysis, in-map analysis, staff triage competency assessment, facilitate analysis, fishbone diagram & why-why tree;

Develop: brainstorming, multi-voting, should-map & action plan with measurement;

Execute: measuring and monitoring of action plan, audit tool, data survey, post-impact analysis & standard operating procedure. Some strategies were formulated with intervention performed:

- Enhanced staff mix to meet the attendance (4.12, 5.7);
- Simplified triage workload (1.1, 1.9, 1.10, 2.1, 2.9, 4.12, 5.3);
- Facilitated patient flow (1.3, 1.6, 1.9, 2.1, 2.7, 4.3, 4.5, 4.8, 4.10, 5.5);
- Enhanced signage (2.8);
- Eliminated “Not-to-do” tasks and checklists (1.1, 5.10);
- Improved working environment (3.1-3.5);
- Improved staff performance by training/triage log sheet system (5.1-5.6);
- Reviewed performance with audit system (5.7-5.9); &
- Worked out a “Call Help System” (5.6).

Phase II: Re-engineering of triage process with 5-S Experience (S-1 – S-5)

- Redefined triage concept/ roles
- Created a new culture with paradigm shift;
- Reset standards;
- Further simplified workload;
- Redefined appropriateness of documentation;
- Formed a team to show supports, gain trust and safeguard standards to nurses; &
- Empowered supporting staff.

Results:

S1- 5S ensuring a safe environment, an effective team, clean environment for patients, plays a crucial role in improving the patient’s perception and safety of their cares. After synergism of FADE and re-engineering, about 86 percent patients (with six months comparison) met the KPI without extra assigning of nursing manpower. About 70 percent of extra performance was gained with release of nurse stress
level and morale promoted. Most importantly, triage risks were definitively minimized and patients’ safety was enhanced. The continuous quality improvement (CQI) could definitively minimize triage risks and ensure patients’ safety. A new concept was cultivated and put into daily practice with 5-S experience to improve triage performance and promote staff morale. In addition, the program enhanced many media awareness for the promulgation of 5-S practice in newspaper in HK.

**Result of Triage CQI in TMHAED**

(70% Extra Performance Gained)

![Graph showing the result of Triage CQI in TMHAED](image)

**Fig. 3: Result of Triage CQI in TMH-AED**

### 3.4.2 Incident with Patient Misidentification

**Time:** July 2010  
**Location:** Emergency Medicine Ward (EMW) of AED  
**Staff involved:** A doctor & a nurse

A patient (Bed 18) admitted to EMW because of unstable emotion with history of Schizophrenia. A nurse found the patient's medication administration record (MAR) was wrongly placed at the record of Bed 19. Therefore, the nurse put it back to record of Bed 18. After that, drug Librium was administration to patient (bed 18) according to the prescription in MAR. It was because the patient of Bed 19 needed...
Librium, but the case doctor prescribed the drug by writing on MAR with label of Bed 18 but in patient file of bed 19.

**Lessons learnt and recommendations:**
1. Patient records was placed too close on working table and limited working space for medical officer
2. Staff insufficient checking in patient identification
3. Staff not familiar with the Dangerous Drugs stock in EMW ward
4. Install shelves and document racks to improve the working space for medical officer
5. Provide training on Dangerous Drugs stock in EMW
6. Reinforce correct patient identification in EMW
7. Better guidelines could be produced by AED to clarify any concerns and standardize patient identification process. S-4 by standardising approach to investigations and clear instructions can enhance identification accuracy.
8. Patient gum label should be instantaneous stuck by initiating staff and should not be prepared by others in advance.
9. Staff should clearly handover cases and clarify information if it is in doubt

Patient misidentification (PM) is a global healthcare issue and may lead to catastrophic outcome. It was noted that a total of 18 incidents were related to PM in the AED in July 2012. A taskforce was formed to tackle the PM regarding correct patient identification (CID) in the AED. A rapid improvement event (RIE) was conducted to understand current value stream mapping (VSM) and strive for the future VSM. The team analyzed and evaluated the current situation in order to identify the root causes with all defect cases. It was found that there was neither effective system to ensure staff to have proper patient identification in the discharge of patients nor standard steps in clinical procedure. Therefore, the team aimed at minimizing patient misidentification upon patient disposal. Objective was set as zero error on CID. RIE to have root cause analysis (RCA), understand current VSM & future VSM. Setting up of standardization on patient disposal for CID and clinical procedures was crucial to enhance patient safety. Briefings were performed to all staff with feedback in order to achieve our standard statement. Patients/relatives were empowered to ensure CID.

**Results / Follow-up**
- Standard procedure on patient disposal was set for all staff to follow(S-4):
  1. Ask patient to speak out name & confirm CID in disposal documents
  2. Ask patient to provide secondary identifier
  3. Ask patient check their name over documents (Patient empowerment)
  4. Check patient identity card if necessary
- Standardization of clinical and environment in also to minimize traps to staff and enhance staff effectiveness and efficiency(S-1 to S-4).
- Reviewed & evaluated the RIE two weeks after and found with compliance rate of 100% through audit review for all nursing disposal (5.9).
- Staff and patients were gained understanding of the value.
- No more incidents reported from patient misidentification regarding nurses upon patient disposal in TMHAED. We achieved:-
  1. All patient documents provided by nurses are correct;
  2. CID was ensured;
  3. Standard procedure on patient disposal was available;
  4. Patient empowerment was ensured; &
  5. Patient and relative satisfaction was ensured.
- Ensuring the sustainability of CID is a great challenge in the busy AED.
- Standardization on CID and MAR prescription on EMW were developed (S-4 & S-5).
- The incidents were greatly reduced by 66% in 18 months comparison study in 2012.
Fig. 6: Tips for minimising Medical Error in Drug Dispensing

<table>
<thead>
<tr>
<th>Fairness</th>
<th>公平公正</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation</td>
<td>創優再造</td>
</tr>
<tr>
<td>Respect</td>
<td>互賴互信</td>
</tr>
<tr>
<td>Safety</td>
<td>安全稳妥</td>
</tr>
<tr>
<td>Teamwork</td>
<td>協力同心</td>
</tr>
<tr>
<td>ProActive</td>
<td>積極主動</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>高效精確</td>
</tr>
<tr>
<td>Development</td>
<td>與時並進</td>
</tr>
</tbody>
</table>

Fig. 7: Core Value “FIRST-AED”

4.0 Conclusion

The emergency department of a Hong Kong hospital was examined against 5-S 50-point Checklist for the improvement of their quality assurance systems towards its accreditation process with Australian standards. The findings evidently reveal that the impact of 5-S on hospital quality assurance in the unit are positive. More importantly, as 5-S is so easy to implement and by everyone, sustainability is almost guaranteed. From the above analysis, it is concluded that 5-S practice is a suitable and effective tool for sustainable healthcare quality assurance in an emergency setting which is led towards its accreditation process set by other mechanisms. Therefore, this research paper and case study will be useful for other hospitals in the HKSAR and beyond, in their TQM / Business Excellence journey.
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Authors’ Backgrounds

**Mr. F.K. Tsoi** graduated with a bachelor in business accounting from the University of Hong Kong (HKU). Having interdisciplinary interest, he further acquired a bachelor of law (LLB) degree from Peking University with 1st class honour and is pursuing a master of law (LLM) in a joint HK-China program. He has published in China trade quarterly, special economics issue letter and PMI reports of China (in collaboration with National Bureau of Statistics of China) as a research analyst in a leading multinational company. In 2008, with sponsorship on behalf of HKU, he was honoured to be the first HK student to attend the annual PHD field-trip course (Food, Medicine & Philosophy in East & West) organized by HKU and Copenhagen University, Denmark.

**Dr. C. C. Chan** (Registered Nurse) is Department Operations Manager of Accident & Emergency (A&E) Departments of Tuen Mun Hospital and Pok Oi Hospital in Hong Kong. He is responsible for overall leadership, implementation and evaluation of nursing policies and standards within the two A&E departments and two Emergency Medicines Wards. His academic qualifications include Master of Business Management in Health Service obtained in the University of Hull (UK) in 1998 and Doctor of Health Science in the Hong Kong Polytechnic University in 2009. In 2012, he was conferred Fellow of Hong Kong College of Emergency Nursing & Fellow of Hong Kong College of Nursing & Health Care Management. Since 2004, he has engaged in the volunteer services of HK Emergency Nurses Association. In 2011, he engaged in setting up HK College of Emergency Nursing.

**Mr. Y.W. Lau** is a Registered Nurse from Hong Kong in the Accident and Emergency Department of Tuen Mun and Pok Oi Hospitals from 2007-2012. He has since then engaged in logistic projects of the department. Mr. Lau graduated from the University of Hong Kong with Bachelor of Nursing. After that he also received a Bachelor of Law (LLB) from Peking University, LLB from the University of London and a Master of Economic Law in a joint HK-China program.

**Mr. Heyman Tang** (Registered Nurse) is the Ward Manager of Accident and Emergency Department of Tuen Mun Hospital in Hong Kong. He is responsible for assisting the Department Operations Manager in the department for overall leadership, implementation and evaluation of nursing policies and standards within the A&E department in Tuen Mun Hospital. He graduated from School of Nursing, Tuen Mun Hospital in 1993. His academic qualification includes Master of Health Services Management obtained in the University of New South Wales (Australia).