

Building Improvement Capabilities among Healthcare Professionals at Al Wakra Hospital, Qatar

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Abstract

Healthcare facilities strive to offer patients with high-quality treatment that meets their expectations/desired outcomes, improves their experiences, and reduces the risk of mistakes. As a result, constant gap analysis is essential for directing quality improvement (QI) activities toward closing gaps and maintaining gains.

Since March 2014, Al Wakra Hospital (AWH) has been recognized by Joint Commission International (JCI) as one of the HMC hospitals that provide high-quality general secondary care services. The triple objective framework, which directs all improvement efforts toward better health, better care, and better value, is based on AWH strategic priorities drawn from QNHS II and the HMC strategic plan.

AWH conducted a comprehensive quality and patient safety (QPS) training program aimed at enhancing staff capabilities by providing them with QPS-related knowledge, improving their skills in Quality Improvement (QI), risk management fields, JCI hospital standards, and applying what they learned to improve their processes.

The QPS training program is a year-long study with a target population of all HCPs who have worked in AWH for at least 6 months. A sample of 50 participants was agreed upon, with one HCP per department.

QPS training consists of three in-person modules: Quality Improvement, Risk Management (RM), and JCI. Each module includes PowerPoint presentations, questions during the session, practice and criticism activities, and a closing reflection. The participants had to be able to attend all of the training days, pass the multiple-choice questions (MCQ) post-test with a score of at least 80%, and participate in and present a QI project poster where they put what they learned in the training into practice.

The scientific substance of the AWH QPS training was accredited by QCHP and The American Nurses Credentialing Center (ANCC), and members of the organizing committee and presenters

signed a conflict of interest waiver. Three full days of QI module were performed on April 28th module and QI souq was conducted on December 10th, 2019.

Because most of the potential participants are nurses (80% = 36 out of 45), and nurses constitute the biggest number of HCPs at AWH, the Qatar Council for Healthcare Professions (QCHP) and (ANCC) accredited the AWH QPS program in consultation with nurse planners. Nurse planners appreciate cooperatives that allow them to engage non-nurse participants in the planning process and award CPD points accordingly. As QPS-related educational and training initiatives, target all HCPs at the facility, it necessitates the use of specialized accreditor/planner agencies.

AWH's comprehensive QPS training program has emphatically affected our facility's quality and quiet security measurements and has great notoriety among the official, senior pioneers, and center administration pioneers.

Keywords: Quality improvement; Quality improvement training; Health care professionals; Quality training; Risk management.

1. Introduction

Healthcare settings aim to provide high standard quality of care to their patients, meet their expectations/desired outcome, improve their experiences, and minimize the likelihood of errors. Consequently, continuous gap analysis is highly required to target the quality improvement (QI) efforts toward closing the gaps and holding the gains.

Frontline staff is considered the backbone of the healthcare system, they save lives and improve the health of millions across the globe. Continuous quality measurement and improvement have been considered as infrastructure for any healthcare setting.

In Qatar, healthcare facilities are aligned with Qatar National Health Strategy II (QNHS) through aiming to achieve the national level priorities. Hamad Medical Corporation (HMC) is the principal public healthcare facilities provide a secondary and tertiary level of care to the community of Qatar accredited by Joint Commission International (JCI).

QNHS II guide the quality improvement efforts toward achieving national priorities while at the same time, JCI mandates healthcare facility to use quality measurement to improve care and services being provided and required all staff at all levels to participate in quality and patient safety activities and their performance is reviewed.

QPS teams provide support and coordination of all QPS-related activities at the facility and departmental levels, involve, and educate staff at different levels as well. Although annual QPS educational sessions have been conducted, a need for comprehensive QPS educational and training programs has arisen strongly. Al Wakra Hospital (AWH) is one of the HMC facilities that provide high-quality general secondary care services and accredited by JCI since March 2014. AWH strategic priorities derived from QNHS II and HMC strategic plan underpin the triple aim framework which guides all improvement efforts toward achieving better health, better care, and better value.

AWH recognizes that the knowledge, performance, attitudes, and beliefs of healthcare professionals (HCPs) impact the quality of care, patient safety environment, and patients' experiences. Subsequently, QPS subject matter experts prioritize building HCP' capacities and capabilities in their operations.

2. Aim/Objectives

AWH conducted comprehensive quality & patient safety (QPS) training program aimed to build the staffs' capabilities by equipping them with QPS related knowledge, enhancing their skills in Quality Improvement (QI), risk management fields, JCI standards for hospitals, and utilizing their learning in improving their processes.

3. Method

QPS training programs a project-based over a year program with a target population of all HCPs working in AWH for at least 6 months, a sample of 50 participants was agreed to be selected purposefully as one HCP per department.

QPS training consists of three in-person modules: Quality Improvement, Risk management (RM), and JCI module including the use of PowerPoint presentations, questions during the session, practice and critique exercises, and reflection at the end of the session. The participants were required to be able to attend the full training days, pass the multiple-choice questions (MCQ) post-test with at least 80%, involve in and present a poster of the QI project where they apply what they have learned in the training.

QI module covers an introduction to quality in healthcare, in Qatar and in HMC, QI methodologies, QI tools and charts, and steps for conducting QI projects. Searching for evidence and referencing your work topics were prioritized to comply with the code of ethics in healthcare. How to present the QI project in storyboard and writing articles topics were also discussed. Workshops were conducted to practice the utilization of the explained tools.

RM module covers an introduction to RM in HMC, patient safety culture, just culture, reporting OVA, root cause analysis tool, Adverse medical outcome committee investigation processes, and proactive risk analysis. Workshops were conducted to practice the utilization of the explained tools.

JCI & QI souq module covers an introduction to JCI standards for hospitals and the guide for for the JCI survey process in the afternoon the poster competition in QI souq, and the graduation ceremony.

Regular coaching and follow-ups were conducted in between the modules through in-person meetings and onsite rounds to track the progress of the QI projects, assess their skills, provide the required support, empower participants, listen to their concerns, and overcome their challenges.

Workshop module days: participants divided into

groups, practice what they've learned, and mutually critique another group(s).

QI souq: all QI projects posters had been displayed to AWH staff to disseminate, share, and celebrates the improvement stories.

In addition, provide the participants with free access to IHI open school online self-learning courses and online risk management e-learning courses.

Excel workshop: 2 hours of in-person training about utilizing Excel sheets, inserting data and charts, and using formulas.

3.1. Data collections & Tools

AWH QPS training scientific contents were being accredited by QCHP and The American Nurses Credentialing Center ANCC, the planning committee members and speakers signed conflict of interest. Six full days were conducted in person as 3 full days QI module were conducted in April 28th -30th, 2019, 2 full days RM module were conducted on Sep 18th- 19th, 2019, and the JCI module and QI souq were conducted on 10th Dec 2019.

Quantitative data were collected through using different structured tools such as Participant structured self-reported questionnaire (paper-based Feedback tool adopted from HMC) using both close-ended (11 Q) and open-ended questions (3). 5-point Likert scale (Unsatisfactory=1, Poor=2, Satisfactory=3, Good=4, Excellent=5) was used to assess their reaction and relevancy of the training and open-ended question for most and least valuable comments and how could improve further. Anonymity was fully ensured by not requesting any participant's identifiers.

In addition to Paper-based Post-test 15 MCQs to assess gaining of new knowledge after attending the training.

The structured tool was developed for poster evaluation purposes: include 8 main criteria, each criterion will be rated and scored against Missed/Poor score is 1, Inadequate/Good score 5, Adequate/Excellent score is 10, subsequently, the

final score is the sum of all criterion' score per poster .

Qualitative data were collected through unstructured interviews by the assistant executive director of Quality & Patient Safety in AWH Dr. Almunzer Zakaria with the participants during the training days. In addition, unstructured interviews were conducted by senior quality coaches with the department head.

4. Discussion

AWH QPS training was accredited by Qatar Council for Healthcare Profession (QCHP) and ANCC in collaboration with nurse planners because most of the prospective participants are nurses (80% = 36 out of 45) at different levels Staff Nurse (SN), Charge Nurse (CN) and Head

Nurse (HN) and nurses represent the highest number of HCPs at AWH. The nurse planners thankfully cooperate to include the non-nurse participants in the planning and grant CPD points accordingly. However, QPS related educational and training activities are stand-alone and it targets all HCPs at the facility, so it needs specific accreditor/planner bodies.

AWH provides clinical and non-clinical services to all patients' ages including inpatient, outpatient, operating theatre, and emergency services. Therefore, due to many departments and to ensure one representative from each department, one HCP per department was requested to be informed about the training and voluntary agreement to participate (**Table 1**). We welcome any staff at any level willing to attend to

Department	Number of Participants	Job Titles
Pediatric (NICU, PICU, PED, Ped. Inpatient)	4	4 SNs
Obstetrics & Gynecology (Obstetric inpatient, Gyn inpatient, Labor room, OPD, ED)	5	2 CN & 2 SN
Critical Care (MICU, SICU, HDU/CCU)	5	1 CN & 4 SNs
Medical (Medical inpatient, Endoscopy, Dialysis)	5	2 CNs & 3 SNs
Surgical (Surgical inpatient, burn inpatient, Burn OT, ADL)	6	1 HN&2 CNs & 3 SNS
Operating Theatre (Main OT, Day Care Unit, Obstetric OT)	6	1 CN & 5 SNs
Adult emergency department	2	1 CN & 1 SN
General Outpatient department (GOPD)	3	2 SNs
Pharmacy	1	Pharmacist
Laboratory	1	Laboratory Supervisor
Clinical imaging	1	Radiology Technician
Rehabilitation	2	Physiotherapists
Respiratory Department	1	Respiratory Therapist
Anesthesia	1	Anesthetist
Business Development	2	Project Manager & HR Staff

join the training, non-participated staffs provide feedback as well, but they were not required to stick to timing, be part of a project or take post-test.6 of our QPS colleagues from Hazm Mubairek General Hospital (HMGH) had attended.

A total of 56 participants were accepted, 45 out of them had attended the full six training days, 11 out of them failed to as: two participants failed to attend the training (0%). Three participants attended 3 days (50% attendance), two participants attended 4 days (66% attendance), four participants attended 5 days (83% attendance).

Staffing and scheduling were limiting the participant's abilities to attend the full days, some participants were requested to join back their clinical areas due to shortage of staff, and others were attending post-nightshift due to difficulties in managing the staffing schedule. Usually,

the leave had been planned and approved a long time ago subsequently the tickets were booked as well. Hence, adjusting the planned leave was not possible at all for some participants. We suggest nominating the names of participants ahead of time to enable them to adjust their schedule and planned leave accordingly, and we recommend presenters record their sessions which will be forwarded to those who missed the in-person session.

Participants were categorized into 9 groups based on their services; they brainstormed a new idea for improvement in a priority area reflecting any quality-of-care dimensions, in the other hand, those HCPs from non-clinical services were requested to join their departmental QI project.

The senior QI coaches have been continuously in contact with the participants, coaching and supporting, tracking the progress of QI projects, exploring any challenges, and trying to resolve it.

Group	QI Project	Poster in QI Souq	Evaluation
Pediatric	Reduce rejected blood sample	Yes	Considered as one of the Top 3 QI projects
Critical Care	Efficient Transfer out process for patients from Critical Care (intra facility)	Yes	Adequate
Operating Theatre	Knife to Skin	Yes	Adequate
Obstetrics & Gynecology	Improve Workflow in Ob-Gyn. Division	Yes	Adequate
GOPD	Waiting days to get OPD appointment	Yes	Adequate
Surgical	Decreasing the Length of Stay of a patient undergoing laparoscopic appendectomy	Yes	Considered as one of the Top 3 QI projects
Medical	Discharge before 11 AM	Yes	The aim was not achieved
Rehabilitation\ Physiotherapy	Reduction in Waiting time for Priority 1 Patients for 1st OPD Visit after discharge	Yes	Adequate
Adult emergency	Reducing the percentage of priority 4 patients leaving without being seen by the physician	Yes	Considered as one of the Top 3 QI projects

Table 2: QI project per group.

While it is a bit challenging and time-consuming especially with the shortage of QPS staffing. In addition to developing the program, getting it accredited by QCHP, analyzing the data, etc. we would recommend allocating QPS staff who have given enough time accordingly.

Each QI group had a designated senior QI coach to support and guide the QI project group from day 1 continuously through day 6. QI coaches do regular onsite visit to the group in their areas, teaching rounds, and support in implementing what they had learned. The QI coaches had visited all groups as well to share the learning and maximize the learning. The participants also had the possibilities to contact the coaches on the Tele-phone or attend their offices at any time if a need had risen.

QI project posters were displayed in the front of the staff main auditorium, were evaluated using a poster evaluation tool by the CEO, AED QPS, and AED hospital (Table.2). The top 3 scored posters were recognized by appreciation certificate being handed to the poster group by the hospital CEO and AED QPS.

42 participants had passed the post-test exam with an 80% score and/or higher score, 11 participants failed to take the exam and 3 participants failed to get the passing score. Due to previously mentioned challenges in staffing, scheduling, and leaves, we recommend for the next training program to use electronic-based post-test rather than paper-based which will be sent to them through HMC mail.

Self-reported questionnaires (paper-based feedback tool) without identifiers were being handed to all participants, a total of 297 pieces of feedback were received over the 6 days (Figure 1) Overall percentage of Self-reported questionnaire (Feedback tool)).One participant (0.34%) reported unsatisfactory with Q4 about adequate time were allocated, more time to be allocated for workshops and training exercises. Two participants (0.67%) reported poor with Q10 the teaching materials were helpful, they want the teaching materials ahead of time before the training, while we had provided all materials in PDF format after the end of each day.

A stacked bar chart was used to display the percentage of responses per question under each category, Q1: the purpose of the training was communicated, Q2: was able to achieve the desired objectives, Q3: was informed what is expected from them to complete the training, Q4: adequate time was allocated, Q5: clarifications were addressed, Q6:was actively engaged, Q7: will positively impact their practice, Q8: presenter are experts, Q9: presenters balanced information, Q10: teaching materials were helpful, Q11: recommending the training to their colleagues.

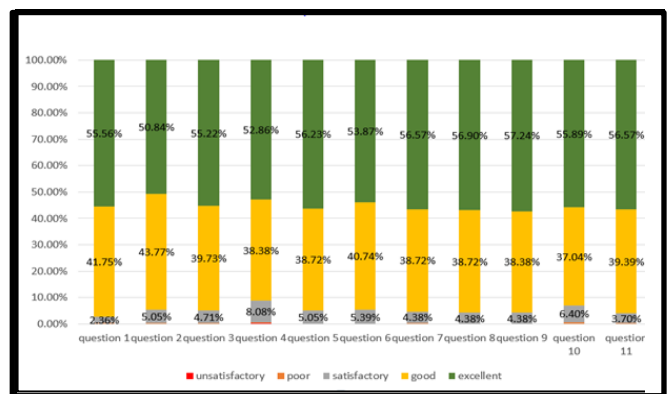


Figure 1(a): Overall percentage of Self-reported questionnaire (Feedback tool) per question.

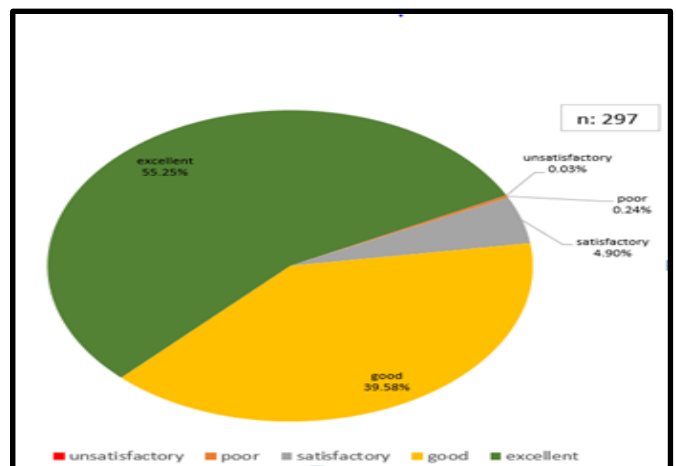


Figure 1(b): Overall % Participant’s Feedback

At the end of each day, participants were handed with hard copies of participant’s feedback tool and the result of it had been shared on the following day. Daily participant feedback tools were analyzed, and results were shared with the participants. (Figure 2).

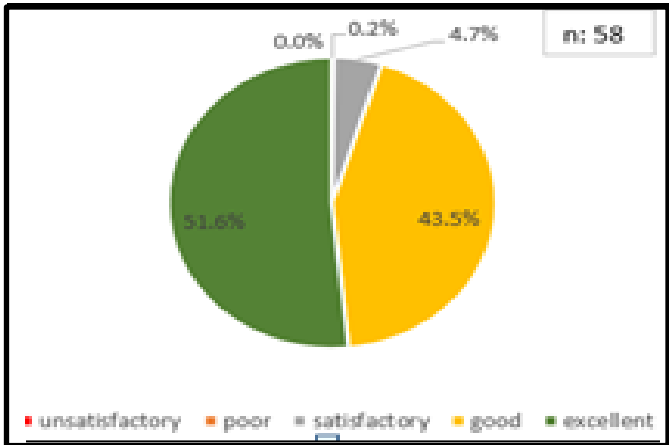


Figure 2(a): Day 1- % participant's feedback.

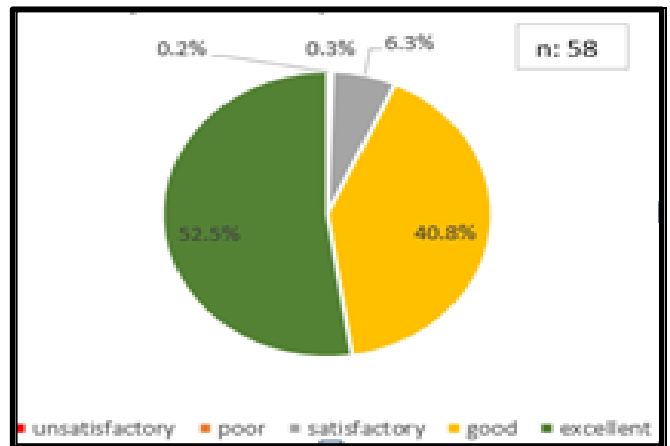


Figure 2 (b): Day 2- % participant's feedback.

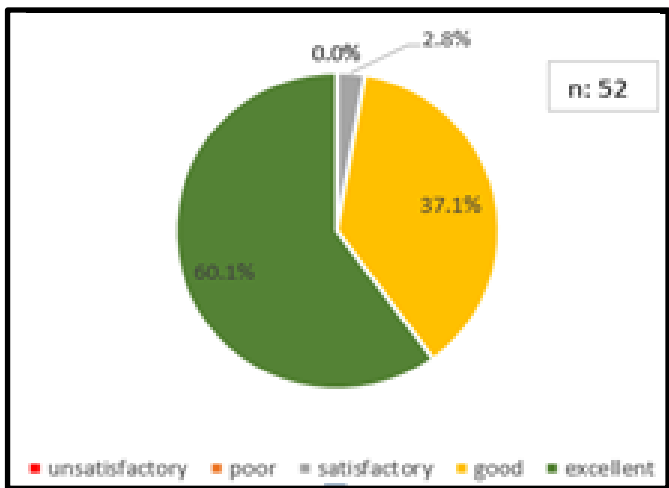


Figure 2(c): Day 3- % participant's feedback.

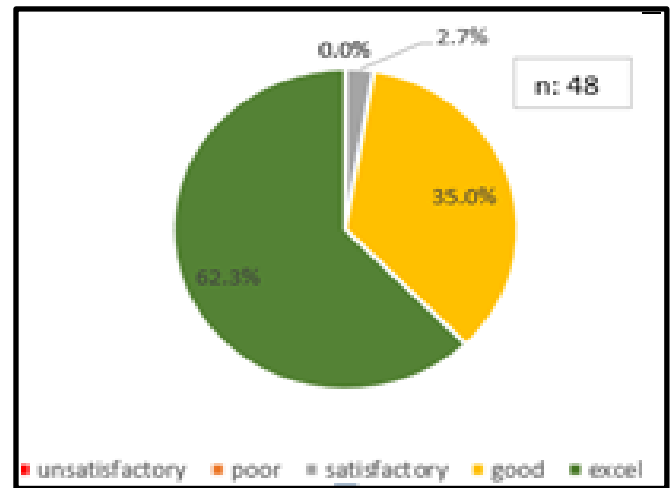


Figure 2(d): Day 4- % participant's feedback.

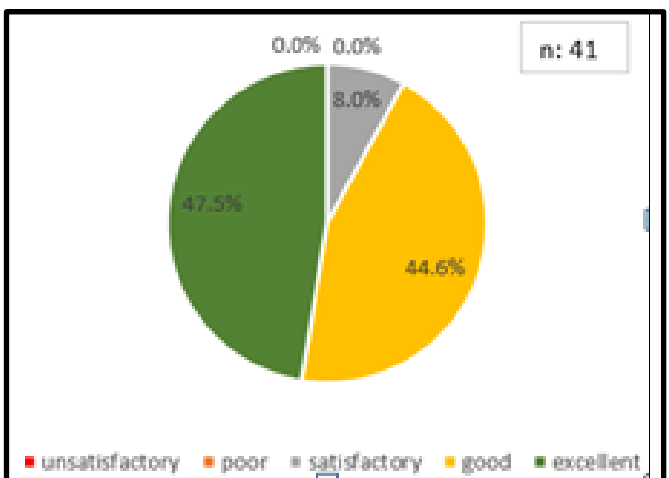


Figure 2(e): Day 5; % participant's feedback

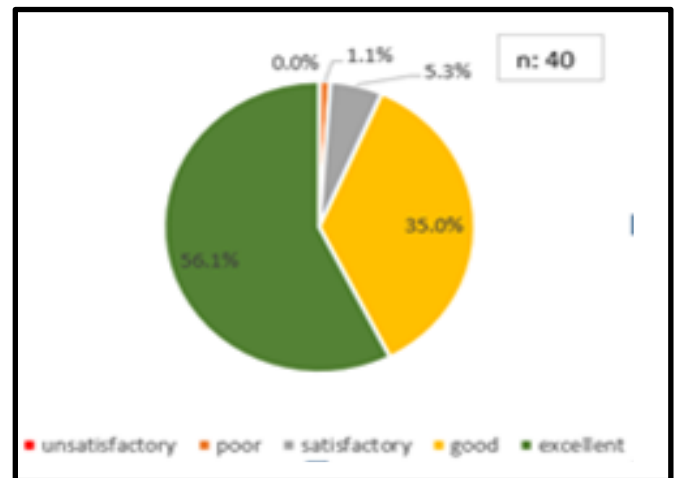


Figure 2(f): Day 6- % participant's feedback

Figure 2: Daily participant's feedback.

At the end of the first day, 58 completed feedback were received and upon its analysis 95.1% revealed positive response (including excellent and good). While 93.3% positive response for day 2, lower positive response compared to day 1 because some participants need the educational materials ahead of time prior to the sessions. 97.2% positive response after day 3 where the participants grasp the desired outcome and how to apply what they had learn in their areas. 95.2% was the positive response with the first module, Quality Improvement module, around 2.8% were satisfied with the timing allocated for the sessions and they were not informed enough about the participant's successful criteria.

97.4%, 92% positive response after day 4 and day 5 respectively in the second module, 94.7% the risk management module, around 2.7% were satisfied with the objectives and the time allocated for the sessions. 93.4% positive response were received after day 6 the third module, JCI module, around 5.5% were satisfied with the purpose of the sessions and they were not sure what will be their role back in their areas as a part of JCI accreditation.

All participants comments and feedback were discussed and addressed with them on time, moreover the participants compliments were shared as well. The AED QPS conducted an unstructured discussion with all participants at the end of the training, exploring their thoughts and feedback after attending the training. Below is some of the participant's feedback:

"The training was very helpful; it helps me in my assignment for my master's degree".

"I never understood quality in such a way that you and your team delivered".

"This training introduced us to Risk Analysis and our role in a Patient-safety environment, which we didn't receive such before".

The senior quality coaches had conducted several planned and unplanned onsite visits where they met the departmental leads discussing any challenges/obstacles that the participants had encountered, exploring their feedback about the

participant's utilization of new knowledge. Below is some of departmental leads feedback:

"My staff showed full awareness about different QI tools especially process mapping, cause-effect diagram".

"I would suggest this training to the departmental leads first then to frontline staffs because we need to support them in their involvement in QI projects".

"My staff is presenting the departmental dashboard in the department meeting confidently, he explains more details and answers his colleagues' clarification".

5. Conclusion

AWH's comprehensive QPS training program has positively impacted the quality and patient safety dimensions in our facility and has an excellent reputation among the executive, senior leaders, and middle management leaders.

It has been attended by more than 50 AWH HCPs where comprehensive QI, RM, and JCI related information was extensively provided, and QPS related skills were rigorously trained. It proved an improvement in the participant's QPS related knowledge and skills. In addition to that, we do receive several requests to run the training more than once a year and provide it for departmental leaders and physicians. Participants were granted 41 CPD point category 1 of attending the training program which support them to meet the QCHP license requirements. We do recommend introducing QI, RM and JCI related educational activities to all HCPs including physicians, pharmacists, all non-clinical technologists, and nurses at all levels in their annual required competencies.

Nine quality improvement projects were successfully conducted and contributed to achieving AWH strategic priorities specifically in better value and flow categories, eliminating prolonged waiting time for priority 4 patients in an adult emergency, reducing the length of stay for laparoscopic appendectomy patients, and reducing the waste of rejected blood sample were the best example of proving improvement.

6. Disclosure Statement

No potential conflict of interest was reported by Author(s), all planning committee members and presenters signed conflict of interest.

7. Acknowledgment

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