

Reducing waiting time for consultation at the Obstetrics and Gynaecology subsidized specialist outpatient clinics (SOC)

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ABSTRACT

Introduction: Waiting time for consultation is an important indicator of service quality at the specialist outpatient clinics (SOC) of our public health care institutions. The waiting time for subsidized patients in the Obstetrics and Gynaecology (O & G) SOC averaged at 87 mins for July 2007 to September 2008. This was above the hospital's key performance indicator target of less than 60 mins. The possible contributing factors are our policy of allowing walk-in patients and force-in appointments to provide accessible care to our patients as well as the need for other services as such ultrasound scans and blood tests before appointments.

A Clinical Improvement project was undertaken in March 2009 with the mission of achieving 95% of subsidized patients at O&G Centre to be seen within 60 minutes of appointment time in 6 months.

Method: With use of Clinical Improvement Methodology, the multi-disciplinary team identified problems that contributed to waiting times. The baseline waiting time were charted from monthly SOC reports. Analysis of the Outpatient Appointment System's data, a time motion study in the clinic and using tools such as Value Stream Mapping, Ishigawa diagram and Pareto chart, the four root causes were identified. They are: delays by pre-consultation ultrasound scans, large number of forcein appointments, high walk in rates and short scheduled consultation times. Processes were reviewed to trim waste and maximize resources safely and efficiently. The doctor's and ultrasound scans' resource schedules was revamped in stages considering the actual service times and analysis of the resources available. A run chart was carried out based on appropriate Plan-Do-Study-Act.

Results: Post implementation of the solutions, the percentage of patients seen within 60 mins was consistently above the previous median of 71%. Although the post implementation average of 76% is not at the targeted 95%, there had been other beneficial outcomes. The booking of appointments and scans for both existing and new patients is now easier with revamped resource schedules. The doctors and ultrasound technicians have more realistic and evenly spaced out schedules. With reduced movement of case sheets and clinic assistant, there is less disruption and more privacy during consultation. For patients and their caregivers, a more realistic appointment time reduces waiting and disruption of their schedules.

Conclusion: The multi-disciplinary team assembled from all stakeholders was vital in getting the solutions in place. By implementing system changes, we hope that the improvement in waiting time can be sustained in the long-term. There are limitations to current solutions such as the human factors with doctors being rotated through the clinics, as well as staff being unfamiliar with the appointment system. There is ongoing monitoring of waiting time for consultation through monthly SOC Reports, with planned review of the results by the team to continue to improve and sustain the results.

Keywords: waiting time, specialist outpatient clinics, gynaecology, quality improvement

INTRODUCTION

Waiting time for consultation is an important indicator of service quality at the specialist outpatient clinics (SOC) of our public health care institutions. In the Obstetrics and Gynaecology (O&G) Department, our SOC structure is unique as a large proportion our patients require investigations such as ultrasound scans and blood tests prior to being seen by the doctors. We also have a policy of allowing walk-in patients and force-in appointments to provide accessible care to our patients.

Unfortunately, these measures resulted in the longest waiting time for doctor's consultation for both subsidized and private patients in the O&G SOC compared to other SOC's from July 2007 to September 2008. The average waiting time for subsidized patients and private patients was 87 mins and 90 mins respectively. This was way above the hospital's KPI (Key Performance Indicator) target of less than 60 mins. Long waiting time is one of the commonest complaints in the SOC.

Hence, a clinical practice improvement project was undertaken in March 2009 to improve the waiting time to consultation.

The internal customers for the project are the patient service assistants and clerks, nurses, ultrasound technicians and doctors. The external customers are the patients and their care-givers. They expect a smooth and hassle-free visit with minimal waiting between processes, which may include queue number registration, measurement of parameters, ultrasound scanning and waiting for the report, blood tests and other investigations, doctor's consultation, billing and re-appointment.

As the subsidized clinic had less confounding factors such as patient's preference of doctors as well as individual doctor's practice differences, the team decided to focus on the mission of achieving 95% of subsidized patients at O&G Centre to be seen within 60 minutes of appointment time in 6 months.

METHOD:

Setting

The setting is in the O&G subsidized outpatient clinic which has three consultation rooms run by two medical officers and a registrar, supervised by a consultant. The O&G SOC is part of a tertiary referral hospital. There are two sessions daily from Monday to Friday. On average the number of patients seen is about 75 per day in the 3 clinics.

Cases seen include new referrals from other hospitals, other departments from the same hospital and polyclinics, as well as follow-up cases. They include a mix of obstetrics and gynaecology patients. The registrar clinic also has one slot for cold sexual assault cases referred from Criminal Investigation Department each session.

This project was started in March 2009 and changes were implemented from May 2009 to February 2010.

The team was chosen to provide a comprehensive representation of the end-to-end process from when the patient registers at the clinic to being seen in the consultation room.

Eight key stakeholders comprising of the service operations manager, two doctors (a senior consultant and a registrar), a nursing manager, senior staff nurse, patient service assistant and the senior principal imaging technician from the SOC were included in the team.

IDENTIFYING THE ROOT CAUSE

Clinical Improvement Methodology was used. Firstly, the team met and the value stream of the process and information flow in the SOC was mapped out (Figure 1).

Brainstorming and the Ishikawa diagram (Figure 2) was used to identify the root cause. The "five whys" were asked identify the root causes for the long waiting time. Multi-voting was used to derive the Pareto Chart. The root causes were prioritised using the 80:20% rule. (Figure 3).

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Figure 1 Value Stream Mapping

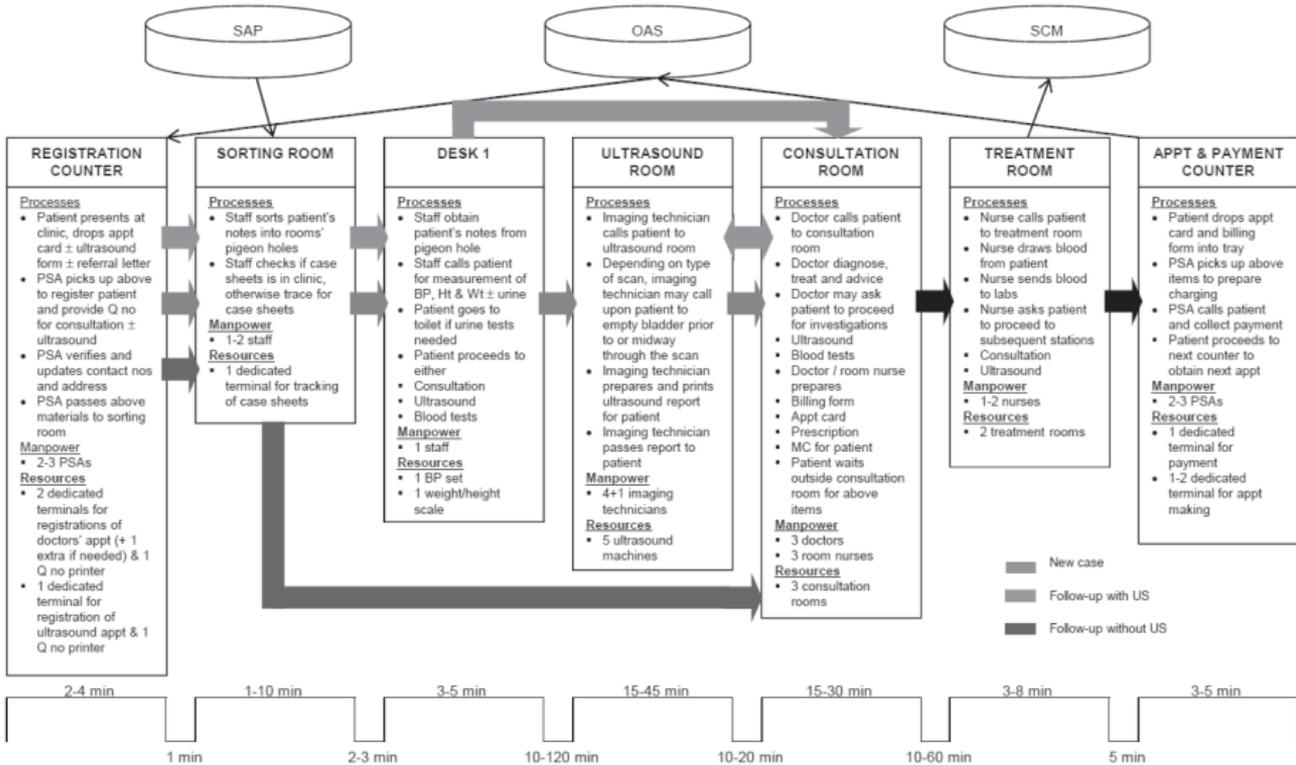


Figure 2 Ishigawa Diagram

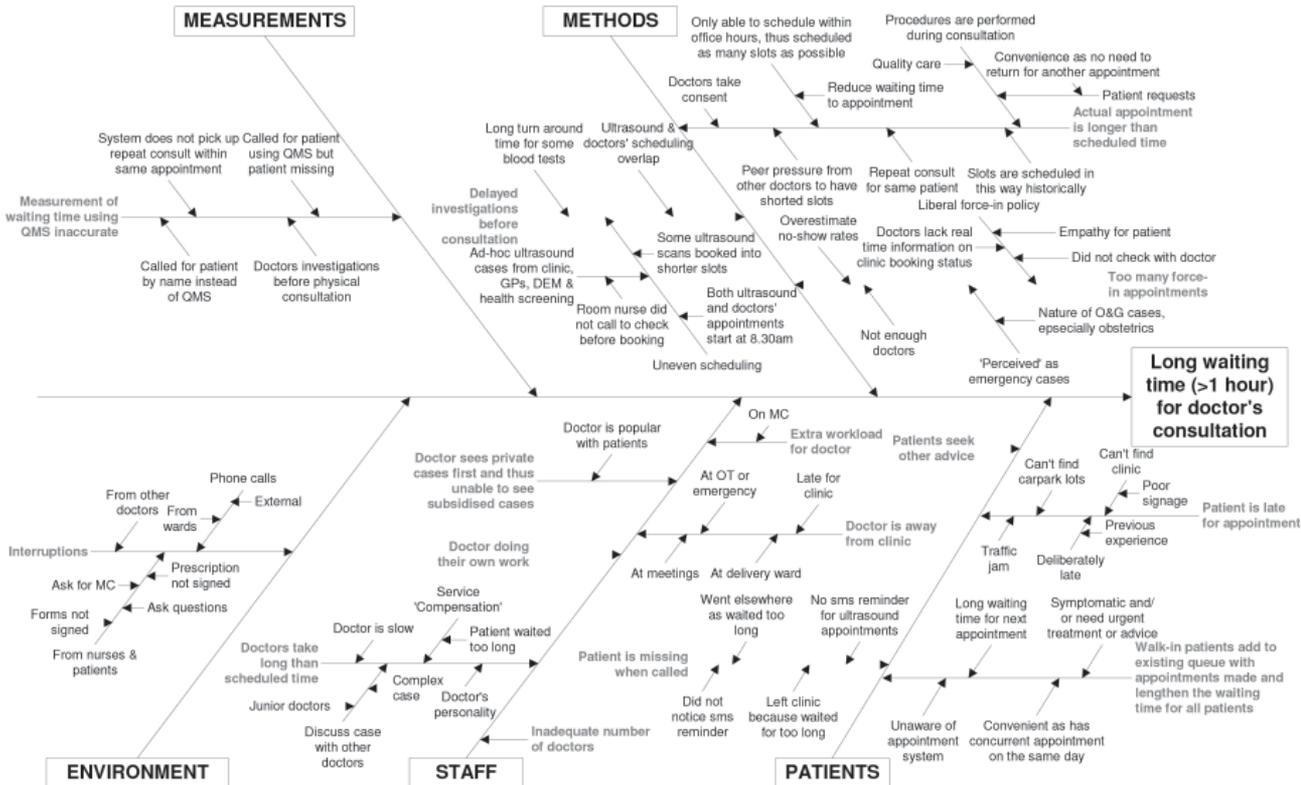


Figure 3 Pareto Chart

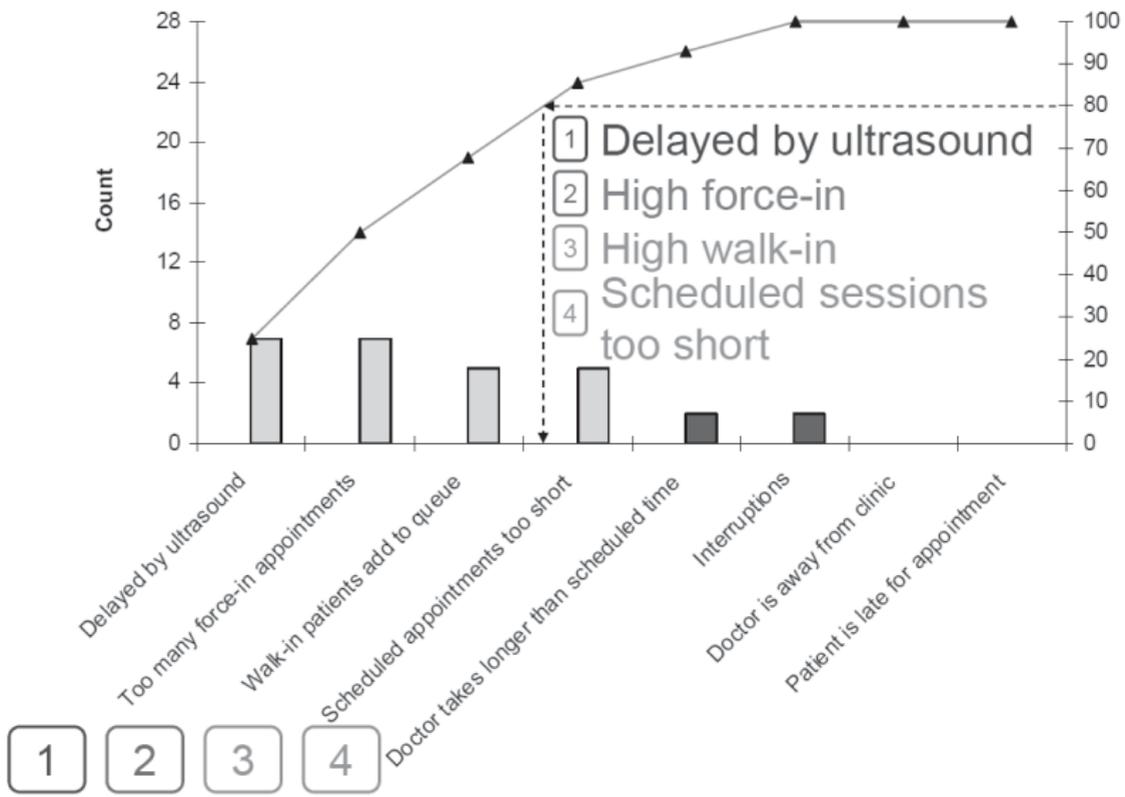
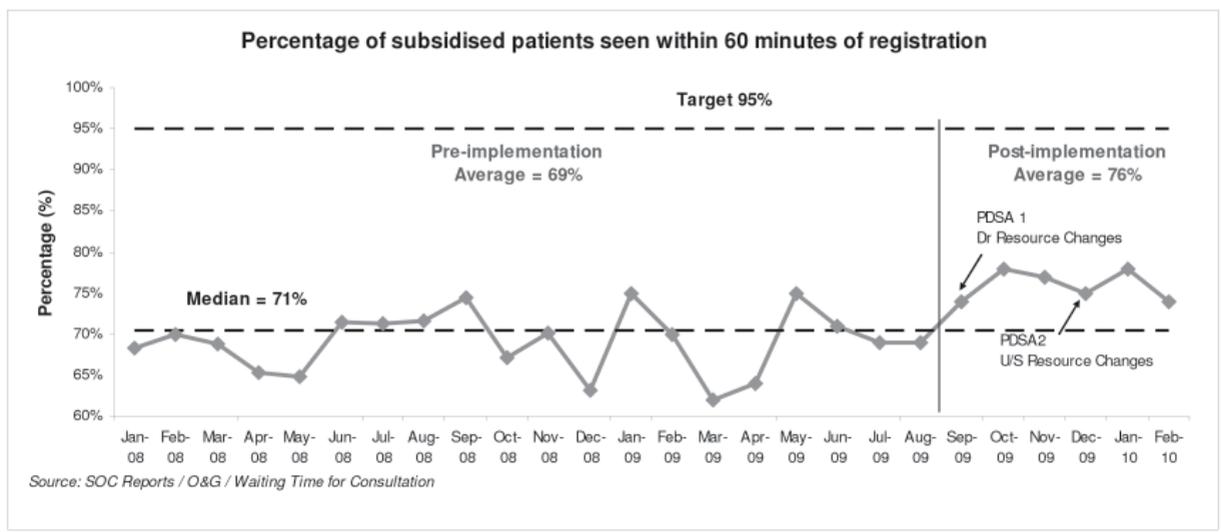


Figure 4 Run Chart



The four reasons identified were delays by pre-consultation ultrasound scans, large number of force-in appointments, high walk in rates and short scheduled consultation times.

Service operations assisted in obtaining important data from the data analysis of the outpatient appointment system (OAS) and a Time Motion Study was carried out for one clinic session at the SOC to obtain information about the actual waiting time. These data provided vital information for the team to understand what happens on the ground and to decide how to approach the solutions to the problem.

PRE-CONSULTATION ULTRASOUND SCANS

The time motion study showed that 42% to 53% of patients who attended the subsidised clinics required an ultrasound prior to consultation; 36% to 73% were new cases and 39% to 47% were followup patients.

Less than half of the ultrasound appointments were scheduled appropriately. Only 38% to 50% of the ultrasound appointments were scheduled 31-60 min before the doctor's appointment. Majority were scheduled too close to the appointment time (0- 30 mins before). There were even some (albeit a minority) who had ultrasound appointments scheduled after the doctor's appointment time! During the time motion study, only 18% (5 out of 28) of scheduled scan appointments were completed before the doctor's appointed consultation time.

HIGH FORCE IN AND WALK IN RATES

OAS data showed that the resources were stretched beyond capacity despite no-shows. Force-in rates average 39% above resource capacity. With an average no-show rate of 22%, the resources were still overfilled by 11%. Walk-in patients were shown to contribute up to 9% of patient attendance

SCHEDULED SESSION TIMING

The time motion study showed that in reality, the duration of scheduled sessions are much shorter than service time. New-case (NC) slots are 10 min and follow-up (FP) slots are 5 min, whereas doctors take up to 16 ± 5 min for NC and 12 ± 6 min for FP cases. Inadequate slots lead to rampant overbooking and patients are double-decked to arrive at the same time. Appointment times are scheduled from 8.30 am till 11.30 am when in actual fact clinic sessions often end close to 1 pm for the morning sessions. The tightly packed schedule resulted in patients with later appointments being delayed even further upstream in the session.

SOLUTION

The criteria used for deciding what interventions to undertake include ease and feasibility, whether it was within our control and staff support and availability.

The team agreed on the need to revamp both the doctor's and ultrasound scans' resource schedules to reflect the appropriate time necessary for consultation. The doctor's resource schedule changes was implemented first as it was deemed easier to implement compared with ultrasound (which may affect private clinics as well), and it is the key driver for ultrasound service. Appointment Scheduling Rules (ASRs) were developed to assist in the revamp of the resources. As the department has a policy of not rejecting any patients, it was felt that it would be difficult to curtail walk in or force in patients. On the contrary by revamping the doctor's resource schedule, it would allow us to address the both the short consultation time and to create dedicated slots for force in and walk in cases.

DOCTOR'S SCHEDULING

The key changes were:

1) Dedicated appointments for each room.

Originally there were only 2 resource lists for the three rooms. This meant that the registrar and one medical officer whose rooms are adjoined share a common list while the other medical officer in another nearby room has a stand alone list. The clinic assistant in the shared list room had to walk between rooms to obtain case sheets and this can be disruptive to an ongoing consultation. Patients also did not know in advance in which room they would be seen. Frequently the patients have to be called by name despite the fact that there is a electronic queue number display outside the clinic.

By having 3 resource lists (one dedicated for each room) the doctors in each room are aware of the number of patients they need to see in their session. This gives them flexibility to manage their time more efficiently. Case sheets can also be assigned to the individual rooms and this reduce movement and disruption in the consultation room. The necessity of calling patients by name is also reduced.

2) Increase in consultation timings.

NC slots were increased to 20 min and FP slots are 10 min, which is consistent with actual service delivery.

3) Expanded appointment timings, appointment rules.

Patients are spread out to arrive between 8.30 am to 12.30 pm (morning session) and 2.00pm to 5.00pm (afternoon session), rather than the previous limits of 11.30pm and 4.00pm respectively. This reflects the actual time that the clinic is in operation. As registrars often have other commitments in the early morning, their session are slotted to start at 9 am so that they can be punctual

The first slots in the registrar clinic and the adjoining medical officer's clinic are double decked with a NC and a FP case, as per Bailey-Welch rule. 1 Only follow up cases were assigned to the second medical officer's room to minimise movement of the doctors between rooms, as all new cases have to be discussed with the registrar.

Slots for force-in appointments were set aside on the OAS system to allow for a spread in the cases throughout the sessions. This also helps buffer the clinic session timing.

With the change in the doctor's resources, it was important that the total number of patients seen is not reduced as this may potentially increase the waiting time to getting an appointment. (Chart 1) This allows adequate slots so that there is no necessity to overbook and clutter the appointment listings.

Chart 1

	Old schedule	New schedule
NC slots	29	20
FP slots	46	81
Total slots	75	101

ULTRASOUND SCHEDULING

New patients who are pregnant and those requesting for termination of pregnancy with no prior scans always require dating scans. Instructions were given to appointment clerks to book an ultrasound scan appointment together with consultation to minimise time spent waiting and last minute scan requests.

The changes in the ultrasound scheduling were implemented 3 months after the doctor's scheduling changes were made and the Plan-Do-Study-Act (PDSA) cycle showing some improvement in results. The problem with the original ultrasound resource was that it was not reflective of the caseload. There were

53% gynaecology and 47% obstetric slots where else the caseload was 72% gynaecology and 28% obstetrics scans. The slot durations of 10min for gynaecology scan and 20min for obstetrics slots was unrealistic as actual average time taken were 20 and 30 minutes respectively. This also resulted in tightly packed slots. Despite the fact that often times ultrasound scans are supposed to be done prior to consultation, the start time for ultrasound resource is the same as doctors. There was a "Specialised Scan" resource for fetal anomaly screening which was under-utilised.

To address these problems, the ultrasound scans appointments were started half an hour earlier, 8am for the morning and 1.40pm for the afternoon session. So as not to prolong the working time of the ultrasonist, the resource also ends half an hour earlier for the day. The number of slots in the resource was changed to 70% gynaecology and 30% obstetric consistent with the actual workload. The slot duration was increased to 20 mins for the gynaecology slots and 30 mins for the obstetric slots.

STATISTICAL ANALYSIS

A run chart plotting was used to evaluate the results of the two implementations on the percentage of patients seen within 60 mins. (Figure 4)

RESULTS AND DISCUSSION

There is improvement post implementation of the solutions, with the percentage of patients seen within 60 mins being consistently above the previous median of 71%. Although the post implementation average of 76% is not at the targeted 95%, there had been other beneficial outcomes.

The changes in resource scheduling were more labour intensive than anticipated. This had to be done manually and was very time consuming. Funds were finally obtained from Quality Network Funds to hire a temporary staff to assist in shifting and contacting the patients. The project was also delayed by the H1N1 outbreak which meant some resource diversion.

Old habits were also hard to change. Appointment staff had to be reminded to comply with reserving the force-in slots for last minute patients.

There had been obvious benefits for both patients and staff. It is easier to book for an appointment slot from the resource schedules. The doctors and ultrasound technicians have more realistic and evenly spaced out schedules which are more manageable. With reduced movement of case sheets and clinic assistant, there is less disruption and more privacy during

consultation. Having more time for new patients meant giving them the necessary attention that they deserve. For patients and their caregiver, there is less waiting and disruption of their schedules with a more realistic appointment time.

New pregnant patients are also happier because they spend less time in the clinic as they have appointed scan slots. Previously after seeing the doctor, they have to wait in line for a last minute scan request and then wait to see the doctor again after that.

There are some important lessons that we learnt from this project. The team had chosen to implement system changes which hopefully can be sustained in the long-term. Second order changes (to do something significantly or fundamentally different from before) were implemented with a total revamp of the resource allocation. This project was greatly facilitated by the service operations team in terms of data collection and the templates for resources before deciding on the final OAS change. It is interesting that the eventual numbers of doctors' appointment and ultrasound scan slots remain unchanged despite the increase in service time allocated per patient. This ensures adequate provision of services without delay in waiting time to appointment dates but with increased efficacy. Seeing the actual number of slots available after the changes helped make detractors less sceptical of the decision to increase consultation time per patient.

There are plans to further enhance the OAS system with prevention of "over-riding" of the force-in slots to reduce human intervention which may affect the system.

The team recognise that there are limitations to current solutions as the doctors running the clinics are rotated according to the roster and can vary in experience, language and competency and hence require variable time with the patients. This problem may need to be addressed as we continually seek to improve our waiting time.

Although we systematically sought for root causes and implemented solutions, we did not reach our target of 95%. This is a learning point that although sometimes we feel like we know the solutions, but it may not

translate to an obvious improvement. We have performed two PDSA cycles with implementation of the doctor's resource change and then the ultrasound resource change. We need to continue to review and implement small changes as needed with feedback from the patients and the staff from the clinic. More PDSA cycles are needed to maintain the improvement towards our target.

The multi-disciplinary team assembled from all stakeholders were vital in getting the solutions in place. Consultation meetings with the appointment services and the OAS systems managers were also arranged to open up communication and discuss feasibility of the implementations. This project allowed different members of the team to understand each point of view in the whole process. This had improved relations and understanding among the team members.

CONCLUSION

With use of Clinical Improvement Methodology, our team has managed to identify problems that contributed to waiting times in the subsidized Obstetrics and Gynaecology clinic.

Processes were reviewed with aim to trim waste and maximize resources safely and efficiently. The revamp to the OAS were made after consideration to the actual service times and analysis of the resources available.

The next challenge would be to improve and sustain the changes. Ongoing monitoring of waiting time for consultation through monthly SOC Reports is performed with planned review of the results by the team to decide if further refinements of the changes are needed. The challenge is far from over. We are looking to improving our ultrasound waiting time and having an orientation and guidelines for the subsidised clinic to standardise management and control ultrasound scan requests. We also need to learn from and share with other departments on managing waiting time in their clinics in order to spread the lessons gained from this project.

I would like to acknowledge all the team members for making this project a success.

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