Reduce Unnecessary Inpatient Fetal Viability Scans (FVS) For Obstetric Patients

Singapore Healthcare Management 2024



Dr Allison Tan¹, Department of O&G Dr Seet Meei Jiun², Department of O&G Bernard Wong Yih Terng³, Quality Safety and Risk Management Jeslyn Neo Hwee Teng⁴, Quality, Safety and Risk Management

Background

A Fetal Viability Scan (FVS) is an ultrasound examination performed to look for fetal cardiac activity. At KKH's Urgent Obstetrics and Gynaecology Centre (UOGC), doctors routinely perform bedside FVS for pregnant patients less than 22 weeks gestation. If admitted, this



group of patients often get another FVS the next day at the Antenatal Monitoring Clinic (AMC). [Figure 1]



PDSA 1 implemented multiple interventions [Figure
 ^{re 1} 4] primarily focusing on urging doctors to confirm the indication for FVS prior to ordering the scan.

PDSA 2 implemented a formalised workflow with strict criteria for FVS at AMC. Examples of unwarranted scans were included. In addition, this workflow involved nurses as final gate-keepers to patients being sent to AMC for FVS.

Vorkflow to reduce the number of unnecessary AMC viability scan

<u>L</u>

Pregnant patients seen at UOGC routinely get bedside ultrasound scans to determine the viability of their (stugge, Performing an additional viability scan at AMC during their admission has no added value to the management of these patients, instead, increase the out-of-pocket cost for the patient and wastage of resources for the hospital.

Im: To reduce the number of unnecessary AMC viability scar



** Examples of situation where AMC viability scan is not warrantee

- Bedside scan at UOGC showed a viable (stys, and
 A dating scan was already done earlier in the pregnancy (known working EDE constraints of whether the scan was and in Mind.
 - regardless of whether the scan was performed in KKM Too early in the pregnancy for a dating scan / checking for chorjonicity for multiple pregnancy (dating scan is recommended to be done at 9-10 weeks gestation) Bedside scan with subchorionic spaces (additional scan at AMC does render any
 - change to management) Admitted for threatened miscarriage (bedside scan in the ward may be considered if required)
- Patient requests for scan (bedside scan in the ward may be considered)

 Bedside scan at UOGC showed a non-viable totic (bedside scan may be performed in the ward to confirm viability)

> Written by Dr Allison Tan & Dr Seet MJ Last updated 8/11/2023

Results & Discussion

% of Unnecessary FVS done (Aug 2021 to Feb 2024)

Figure 5

This additional FVS is unnecessary as it neither provides further clinical information nor affects the management of patient.

Problem & Aim

The baseline median percentage of unnecessary FVS performed at AMC was 13%, extracted from Aug 2021 to Sep 2021 [Figure 2].





<u>Aim</u>: To reduce the median percentage of unnecessary FVS being performed on pregnant patients admitted from UOGC, who are less than 22 weeks gestation, from <u>13</u> to <u>5</u> within twelve months in KKH.

A repeat FVS is deemed unnecessary when

- ✓ Bedside FVS at UOGC already showed a viable fetus
- ✓ Dating scan was already done earlier in pregnancy
- ✓ Patient is still too early in pregnancy for a dating scan



PDSA cycle 1 showed a reduction in the median percentage of unnecessary FVS performed at AMC from 13 to 5 (p=0.0481) from Aug 2021 to May 2022. While it brought desired results, having multiple interventions in one PDSA cycle meant that the team was unable to identify which interventions were more effective and which interventions were less or not effective. The interventions employed were also unlikely sustainable – visual cues decay over time; email/text fatigue restricted the efficacy of reminders.

PDSA cycle 2 was designed to tackle these limitations. It was first piloted in Ward 44 before full fledged implementation at all O&G inpatient wards. Following PDSA cycle 2, the median percentage of unnecessary FVS further reduced to $\underline{0}$ (p<0.001) by end of Feb 2024. Median number of unnecessary FVS performed weekly declined from <u>6</u> to <u>0</u>. This had translated to cost savings for patients at <u>\$8,640</u> per annum and time savings for healthcare providers at <u>62.4 hours</u> per annum.

Conclusion

With the formalisation of a workflow and the empowerment of nurses, the team managed to achieve and sustain a reduction in the percentage of unnecessary FVS being performed on pregnant patients admitted from UOGC, who are less than 22 weeks gestation.

Root causes were identified on a fishbone diagram [Figure 3], and subsequently verified and prioritized by weighted voting through a focus group discussion amongst 10 doctors.

Learning points in summary

- Reminders and visual cues are not sustainable
- Essential to prioritise a single but effective intervention
- ✓ Important to identify and involve all the different stakeholders who are implicated in the process
- ✓ Key to success in QI projects require systemic changes

Acknowledgement:

Team would like to thank Prof Tan Hak Koon, Division Chairman, Q&G to endorse and support the formalised workflow to ensure sustainability of the solutions in Department of O&G¹: Resident, ²: Consultant, ³: Patient Safety Quality Lead,⁴: Senior Patient Safety Quality Lead