



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

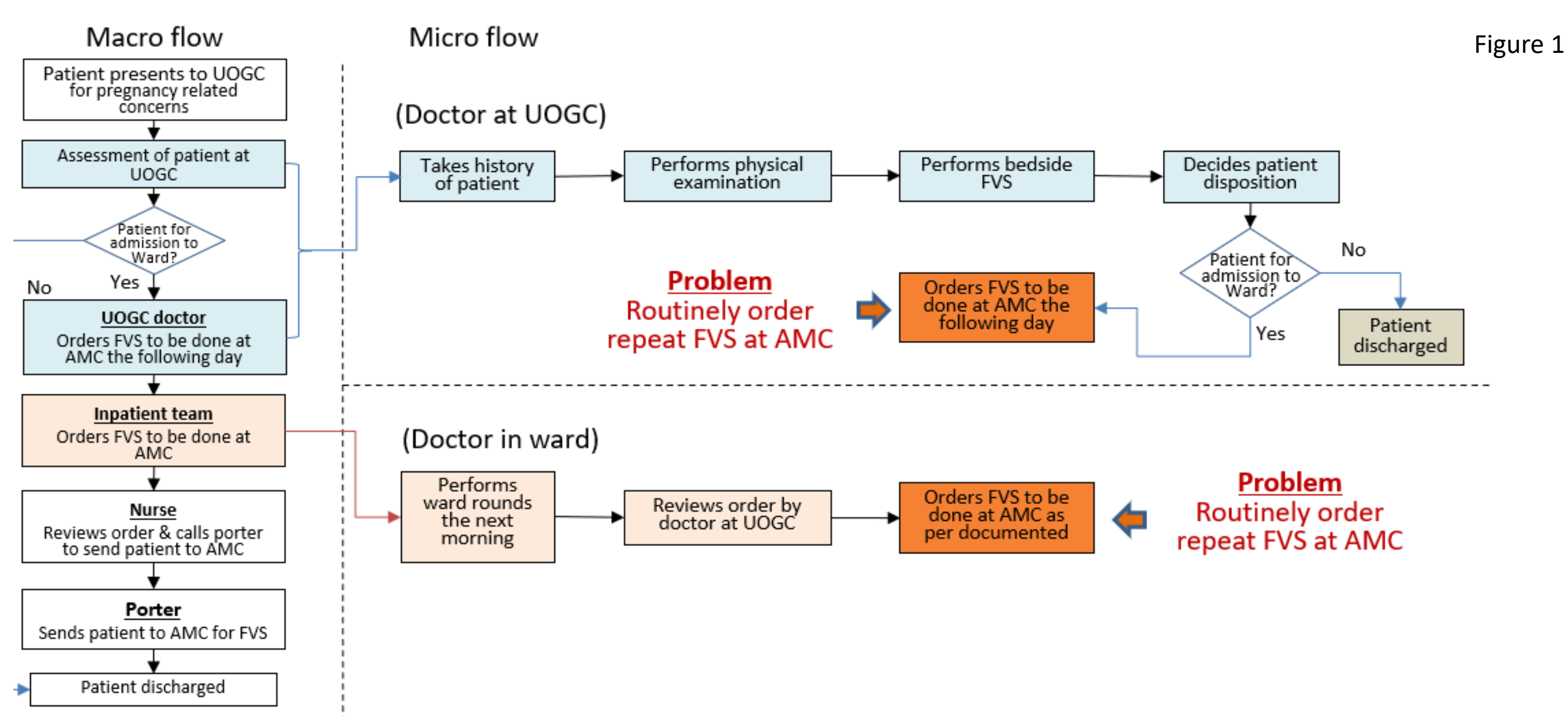


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Background

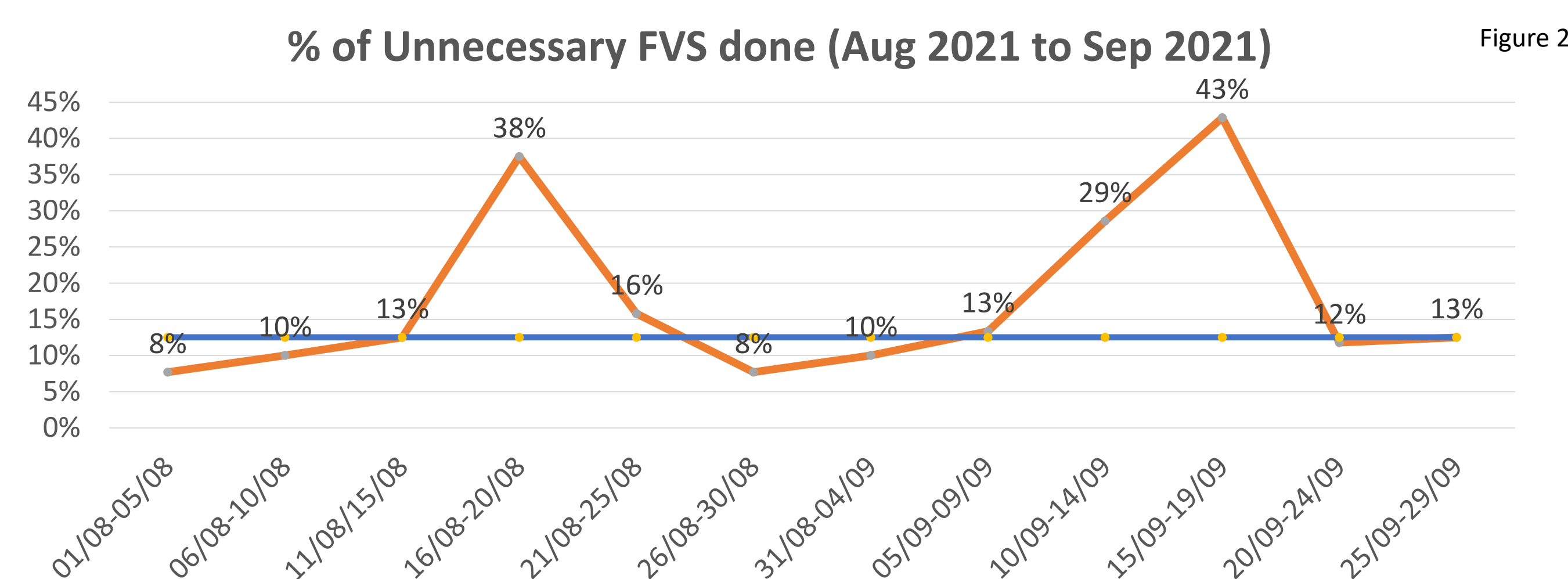
A Fetal Viability Scan (FVS) is an ultrasound examination performed to look for fetal cardiac activity. At KKH's Urgent Obstetrics and Gynaecology Centre (UOGC), doctors routinely perform bedside FVS for pregnant patients less than 22 weeks gestation. If admitted, this group of patients often get another FVS the next day at the Antenatal Monitoring Clinic (AMC). [Figure 1]



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].

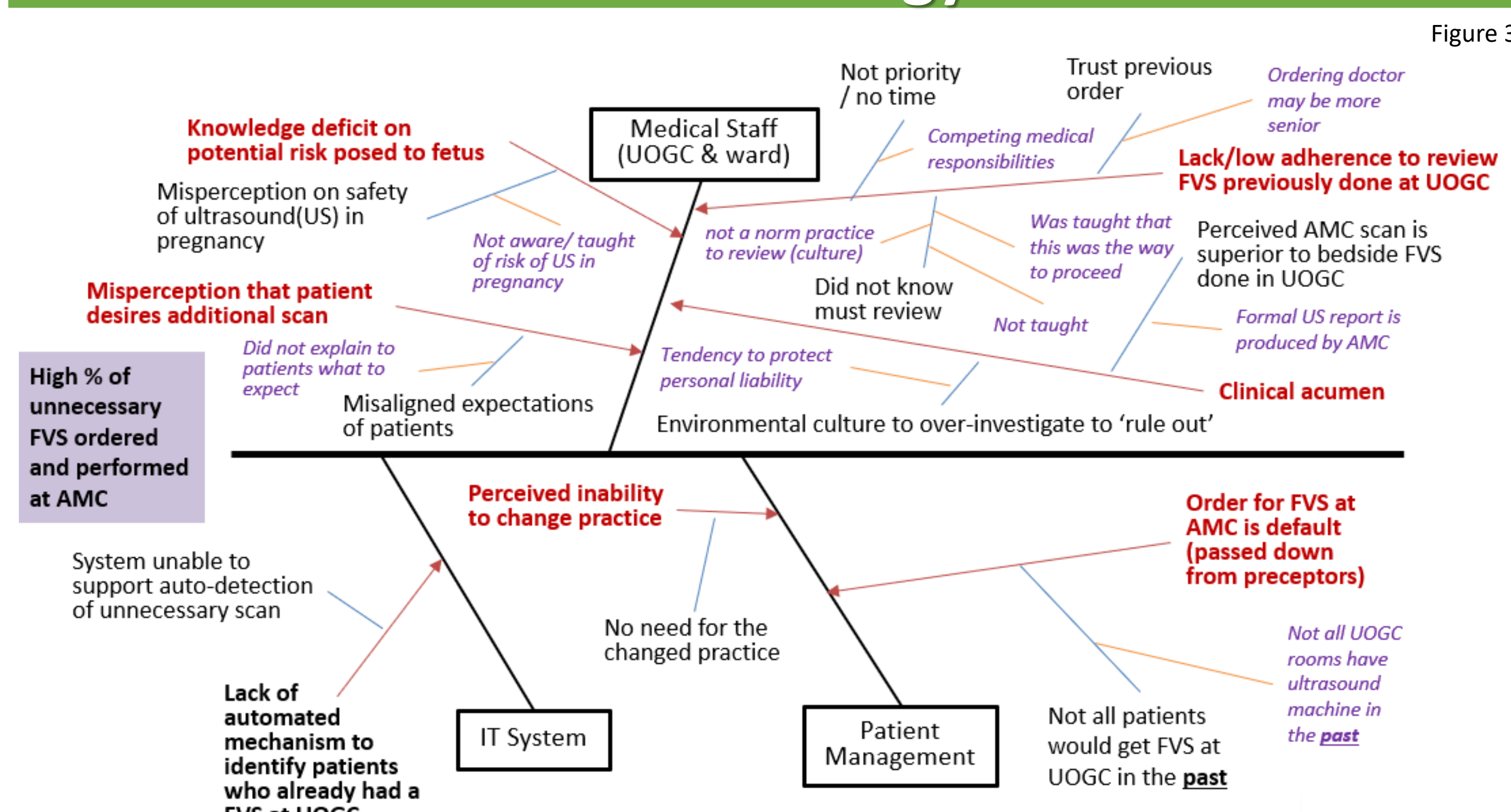


Aim: To reduce the median percentage of unnecessary FVS being performed on pregnant patients admitted from UOGC, who are less than 22 weeks gestation, from **13** to **5** within twelve months in KKH.

A repeat FVS is deemed unnecessary when

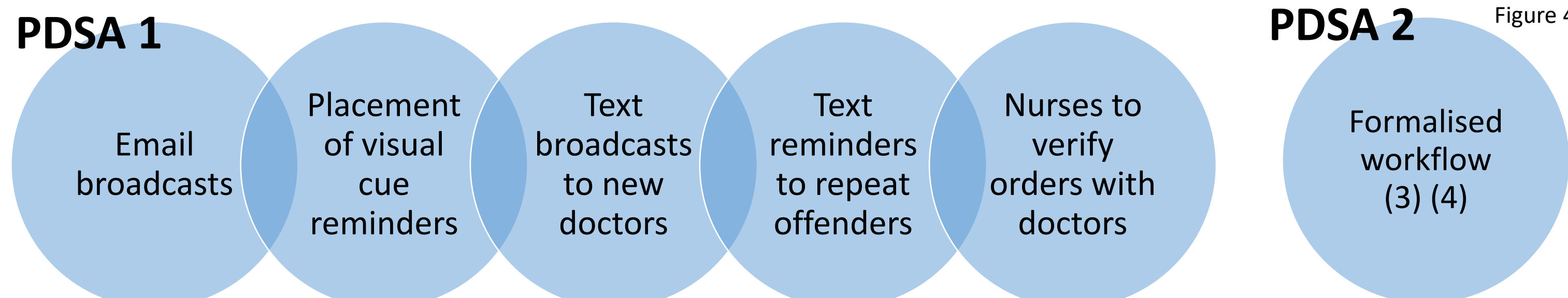
- ✓ Bedside FVS at UOGC already showed a viable fetus
- ✓ Dating scan was already done earlier in pregnancy
- ✓ Patient is still too early in pregnancy for a dating scan

Methodology



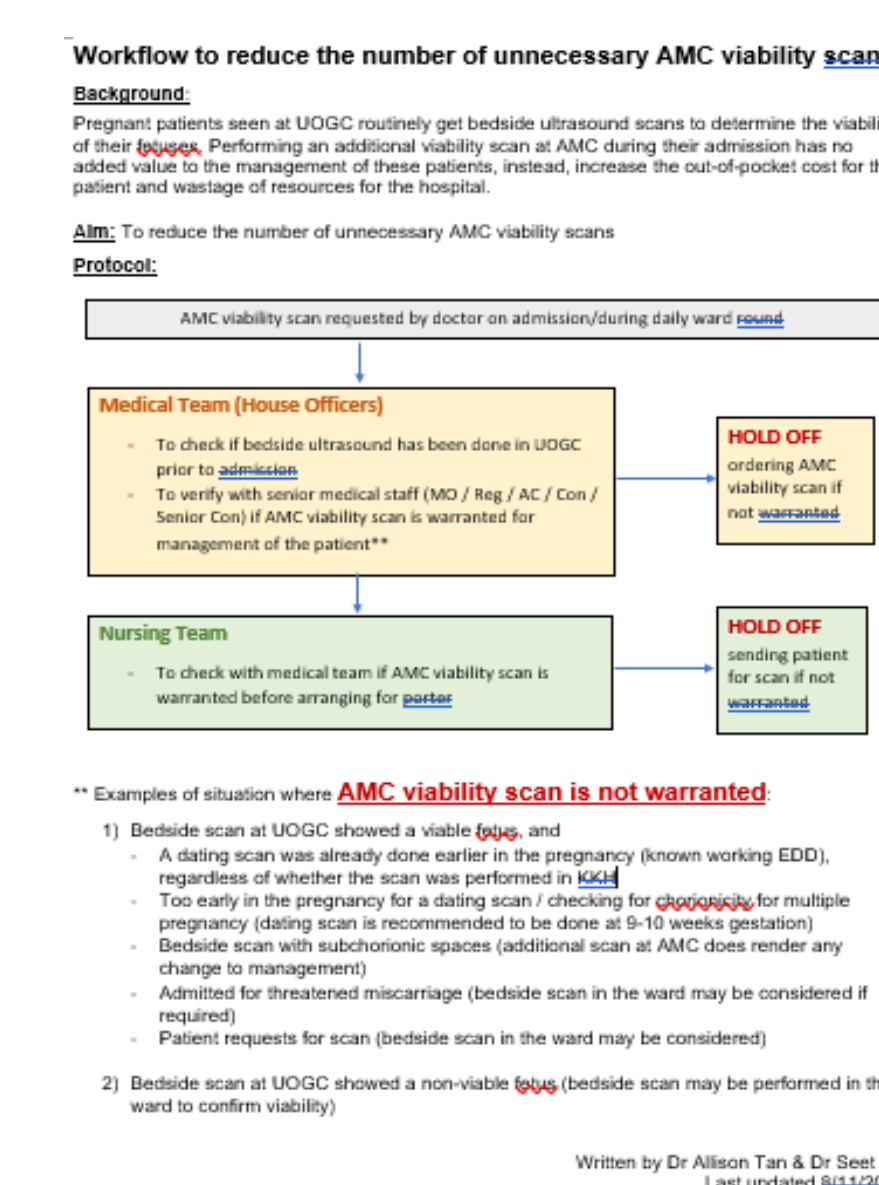
Root causes were identified on a fishbone diagram [Figure 3], and subsequently verified and prioritized by weighted voting through a focus group discussion amongst 10 doctors.

Methodology

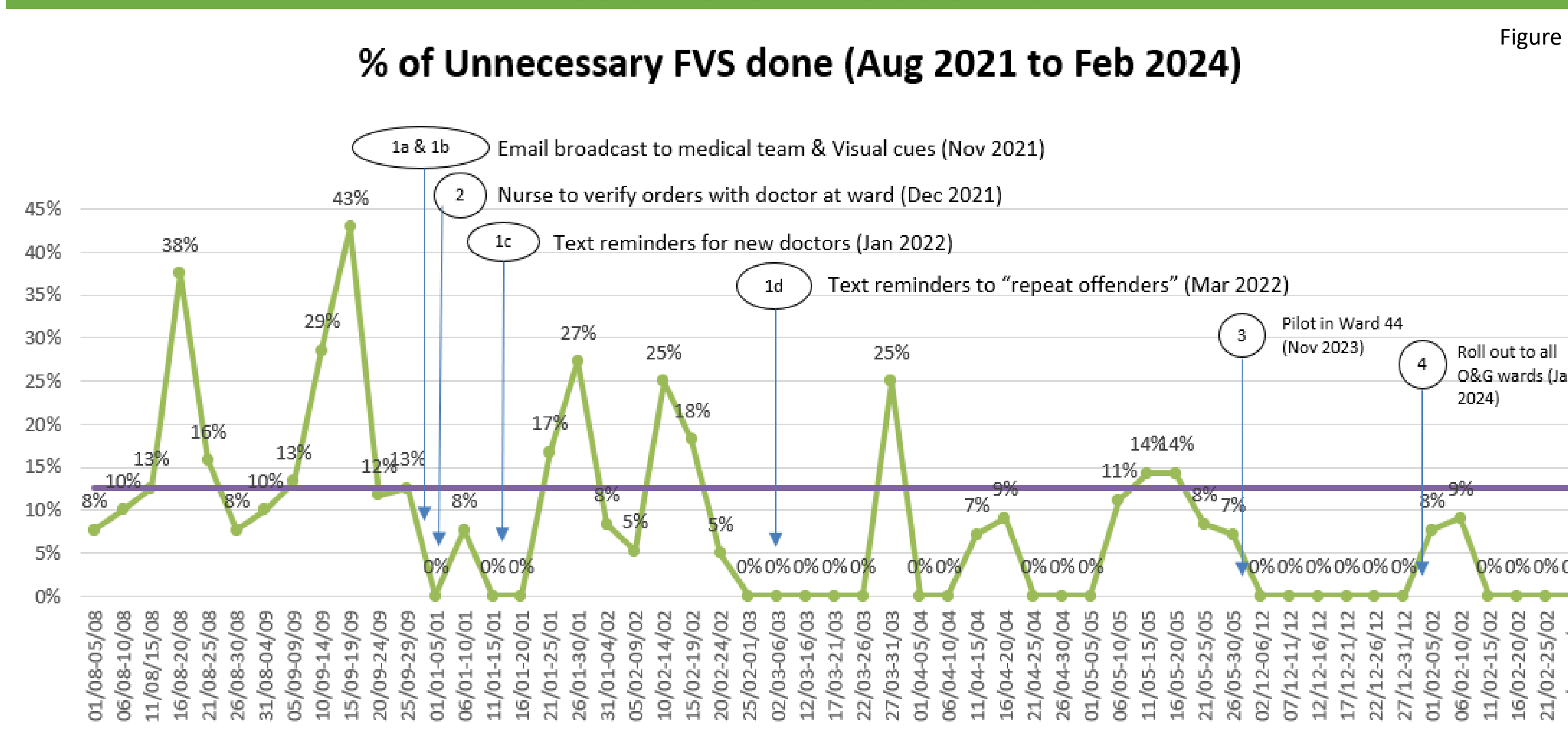


PDSA 1 implemented multiple interventions [Figure 4] primarily focusing on urging doctors to confirm the indication for FVS prior to ordering the scan.

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.



Results & Discussion



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 **0** (p<0.001) by end of Feb 2024. Median number of unnecessary FVS performed weekly declined from **6** to **0**. This had translated to cost savings for patients at **\$8,640** per annum and time savings for healthcare providers at **62.4 hours** 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.

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

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