

# Readiness, recognition and response: a national approach to reducing postpartum haemorrhage

Cheryl Clark, Associate Improvement Advisor; Angela Cunningham, Midwifery Clinical Lead; and Clare Willocks, Obstetric Clinical Lead

## Introduction

The incidence of severe postpartum haemorrhage (PPH), defined as blood loss of more than 2.5 litres following childbirth, was estimated to be 5.8 per 1000 births in Scotland in 2012. PPH has four main causes, known as the 4Ts – tone, trauma, tissue and thrombin. In 2012, uterine tone was recognised as the main reason for this bleeding, with emergency caesarean section reported as the leading mode of delivery.<sup>1, 2</sup>

Recommendations made in 2014 to improve severe PPH included:<sup>1-3</sup>

- more reliable risk assessment
- use of additional uterotonics
- adherence to guidelines
- senior involvement, and
- each unit working with the Maternity and Children Quality Improvement Collaborative (MCQIC).

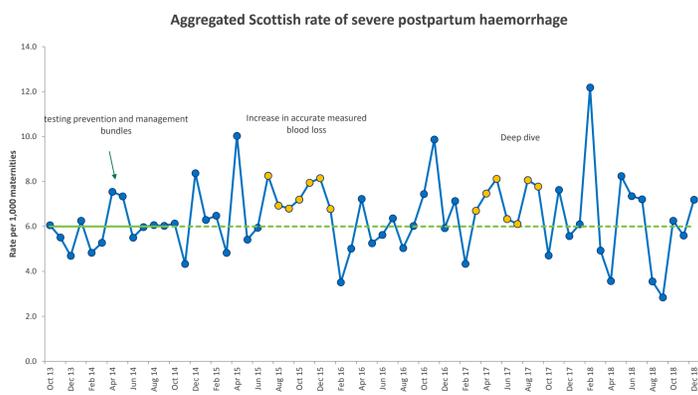


Figure 2: Aggregated severe PPH rate across Scotland from 2013 to 2018

## Results

From 2013 to 2016, the data demonstrated no change in overall outcome (Figure 2). Although some silo improvements were noted, there was no overall national improvement. Deterioration noted in some months (yellow dots) was later attributed to accurate measurement of blood loss. In 2017/18, we coordinated a deep dive of severe PPH to determine why, despite improvement with using bundles, there was no improvement to outcomes. We compared results with the findings from the SCASMM report<sup>1</sup> to help us understand pre and post MCQIC intervention (Figure 4). In turn, this validated the need to review current process measures and launch the 4-stage approach to PPH.

### References:

1. Healthcare Improvement Scotland (2014) Scottish Confidential Audit of Severe Maternal Morbidity (SCASMM): reducing avoidable harm - 10th annual report.
2. MBRACE-UK. Saving Lives, Improving Mothers' Care – Lessons learned to inform future maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2014-2016, 2012-2014, 2009-2012.
3. Royal College of Obstetricians and Gynaecologists (2016) Postpartum Haemorrhage, Prevention and Management (Green-top Guideline No. 52). Available at: [www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg52/](http://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg52/)
4. Institute for Healthcare Improvement (2003) The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement. IHI Innovation Series white paper. Available at: [www.ihc.org](http://www.ihc.org)

## Method

MCQIC, part of the Scottish Patient Safety Programme (SPSP), was launched in 2013 with an aim to reduce severe PPH in Scotland by 30% by 2016 using quality improvement (QI) methodology. The aim was to create a learning system in response to the evidence from the reports as referenced. The collaborative's approach included a range of actions:

- design PPH prevention and management care bundles
- adapt the Institute for Healthcare Improvement (IHI) Breakthrough Series Collaborative (Figure 1) to bring the community together to 'all learn, all share'
- provide a QI toolkit with PDSA cycles, a driver diagram and data support, and
- one-to-one improvement and subject matter support through site visits and telephone calls.

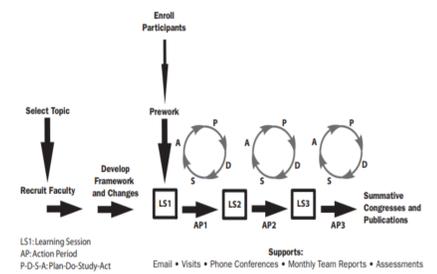


Figure 1: IHI Breakthrough Series Collaborative model<sup>4</sup>

## MCQIC's 4-stage approach to PPH

A 4-stage approach to PPH and support resources for staff (Figure 3) were launched in 2018. Developed in collaboration with the Obstetric Bleeding Strategy for Wales (OBS Cymru), the 4-stage approach is designed to facilitate a multidisciplinary approach that incorporates readiness, early recognition, response to deterioration and use of the national Maternity Early Warning Score (MEWS). Linking with the electronic patient records, it should provide easier access to data on fluid resuscitation and blood transfusion rates.

Stage	Description
0	Recognition
1	500-999 ml
2	1000-1499 ml
3	>1500 ml

Parameter	Target
Systolic BP drops by	30 mmHg
Heart rate rises by	>30 bpm
Respiratory rate	>30/min
Haemoglobin	<30g
Urine output	<30 ml/h

Figure 3: Support resources for staff

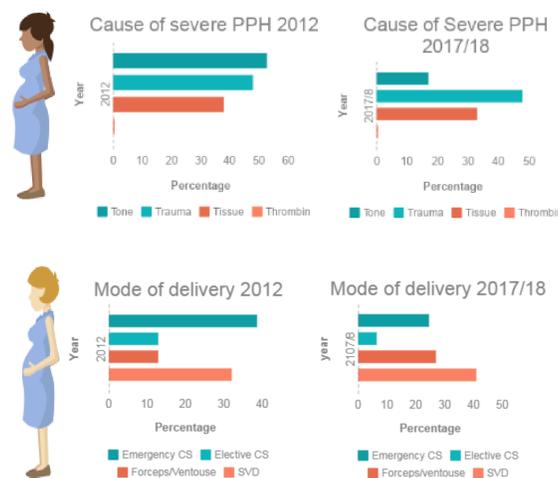


Figure 4: Comparison of data pre and post MCQIC intervention

## Conclusion

Although there has been no overall improvement in the rate of severe PPH, there has been improvement with bundles use, cause of severe PPH and mode of delivery (Figure 4).

Pausing to undertake a deep dive into cases across Scotland has led to a current understanding of what has worked well, with a response to areas that should be a focus for next steps of improvement. Therefore, readiness, recognition and response to PPH is relevant not only to clinical processes but also to the national MCQIC team delivering a learning system of improvement.