



A REVIEW OF MATERNAL MORTALITY

Maternal Deaths at the National Referral Hospital, Honiara, Solomon Islands

A Seven-Year Review — 2018 to 2024

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Conflicts of interest



The authors declare no conflicts of interest

No funding, financial relationships, or personal interests influenced the design, conduct, analysis, or reporting of this study.

Ethics approval was obtained from the Solomon Islands Health Research and Ethics Review Board.

A nation of nearly 1,000 islands

~850,000

People, spread across the archipelago

~1,000

Islands, spanning roughly 1,500 km

5,300

Births a year at NRH, Honiara

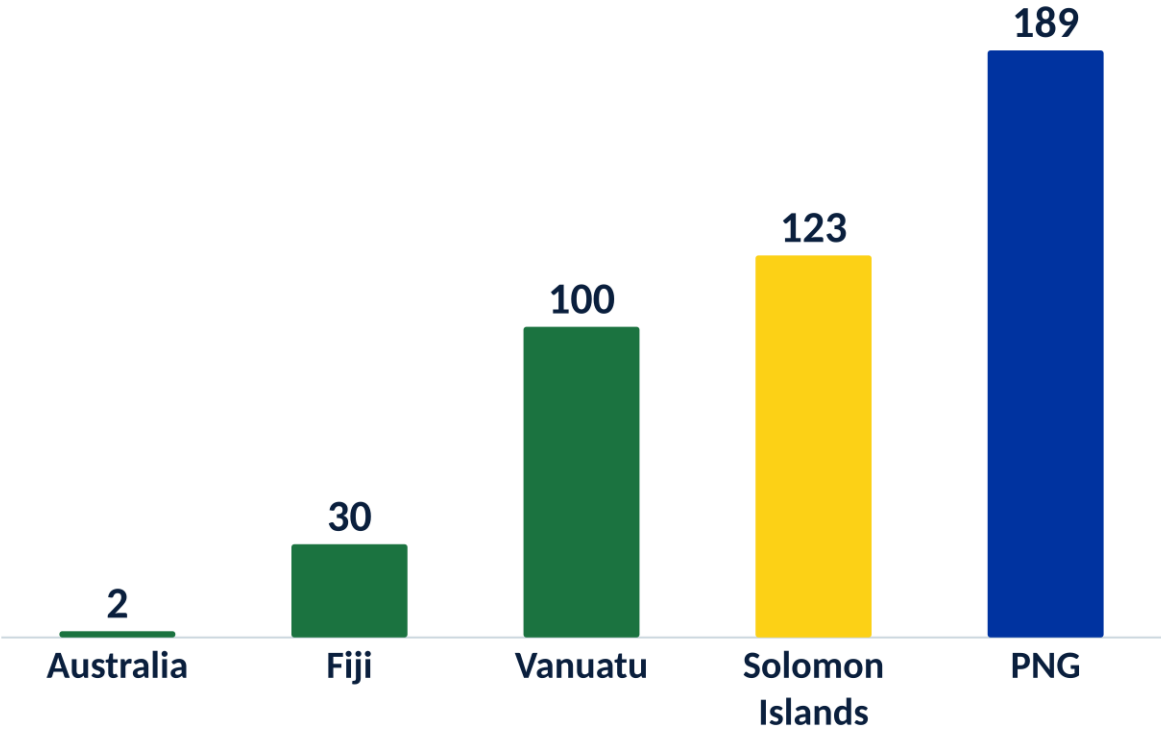


A dispersed, remote nation

The National Referral Hospital in Honiara is the country's only tertiary obstetric unit. Patients are often required to travel over long distances to access care. There are major geographic, logistical and economic barriers to care.

Maternal mortality remains a Pacific health priority

Maternal Mortality Ratio by country (per 100,000 live births)



Source: WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division. Trends in Maternal Mortality: 2000 to 2023. Geneva: WHO, 2025.



One referral centre

National Referral Hospital (NRH), Honiara — around 5,300 births a year and the only tertiary obstetric unit in the country.



A high but improving MMR

The 2019 De Silva study found an MMR of 139/100,000 at NRH (2013–2017). National MMR was estimated at 123/100,000 in 2023.



Highest in the sub-region

Solomon Islands' MMR sits above Fiji and Vanuatu, and below Papua New Guinea among nearby Pacific nations.

Aim & methods

AIM

Review all maternal deaths at NRH (2018–2024) to identify causes, evaluate trends against the 2019 study, and inform strategies to improve maternal health services.



Design

Retrospective review of documented maternal deaths, 2018–2024, audited at departmental meetings since 2015.



Definition

WHO definition of maternal death applied; deaths classified as direct or indirect causes.



Data source

Maternal death audit presentations and patient case files: demographics, cause of death, staff involvement, delays.



Analysis

Analysed in SPSS; compared to the De Silva et al. study using Chi² with McNemar's test.

Defining a maternal death: direct vs. indirect

WHO DEFINITION

A maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management — but not from accidental or incidental causes.



Direct obstetric death

Deaths resulting from obstetric complications of the pregnant state (pregnancy, labour and puerperium), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above.



Indirect obstetric death

Deaths resulting from previous existing disease, or disease that developed during pregnancy, which was not due to direct obstetric causes but was aggravated by the physiologic effects of pregnancy.

HEADLINE RESULTS

Seven years, forty-three deaths

43

Maternal deaths
2018–2024

37,065

Live births
during the study period

116

MMR per 100,000
live births

7.4

Average days from
admission to death

51% of deaths were direct obstetric causes; **49%** were indirect

The MMR fell from 139 to 116 per 100,000 since the 2013–2017 study

DEMOGRAPHICS

Who were the women who died?

30 yrs

Median age of the women who died

69.7%

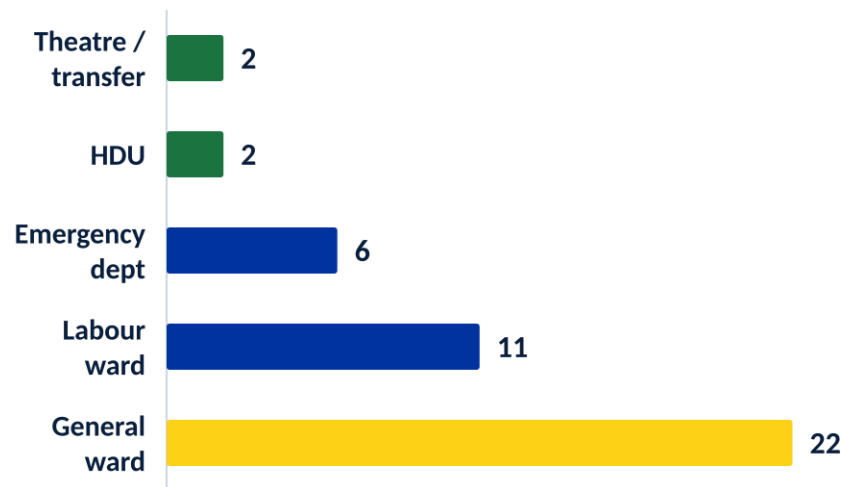
Had attended at least one antenatal booking visit

42%

Were transferred in from provincial clinics or hospitals

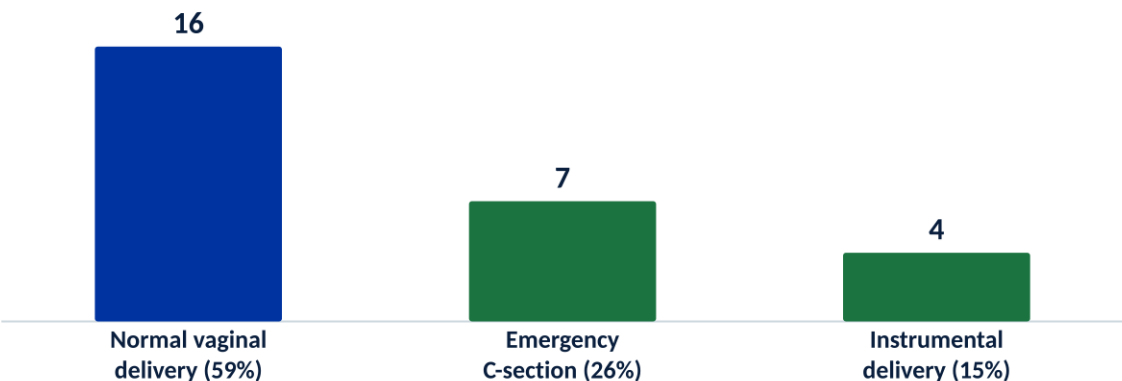
Where in the hospital deaths occurred

51% of deaths (22/43) occurred on general wards.



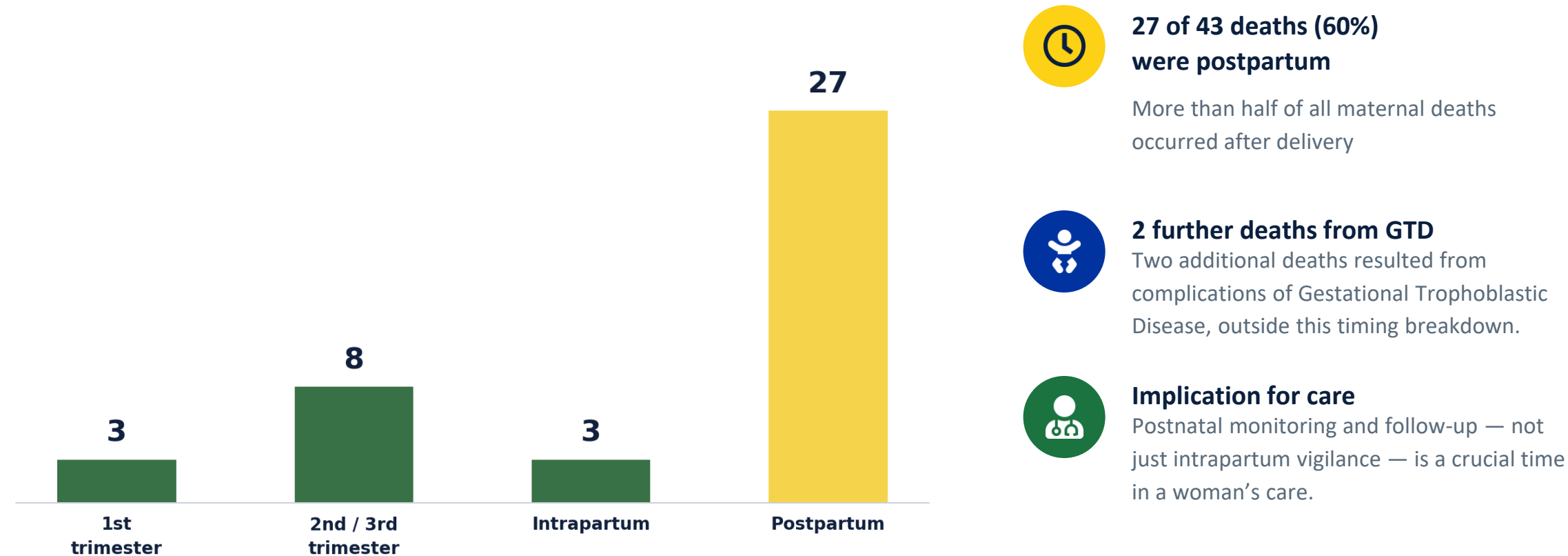
Delivery mode (of the 27 women that delivered)

Most deaths followed a normal vaginal delivery, not caesarean section.

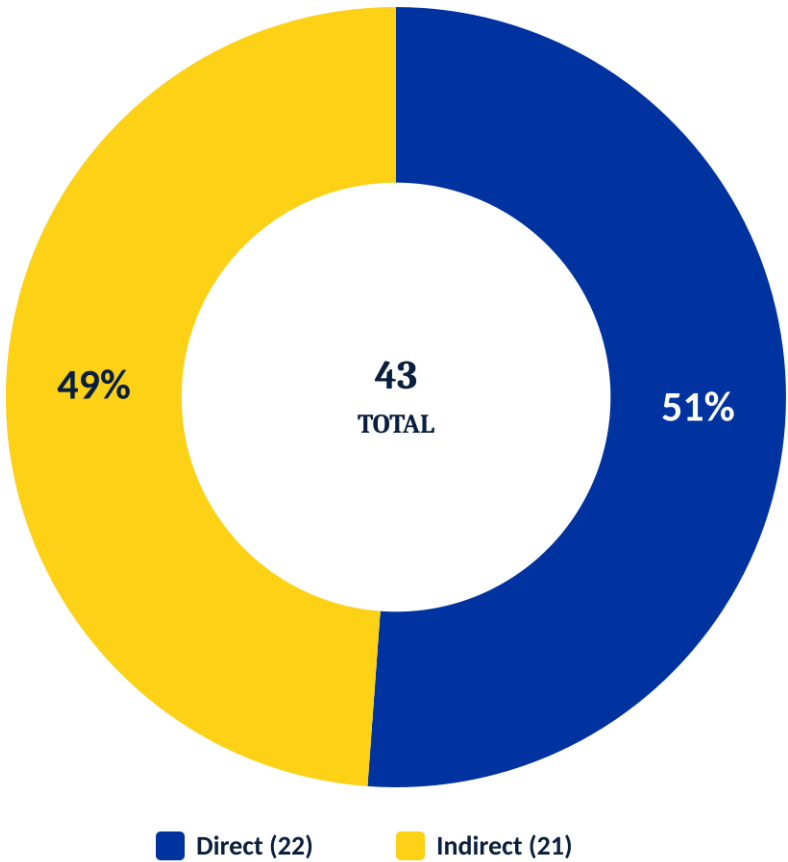


TIMING

The postpartum period is the highest-risk window



Direct and indirect deaths are almost evenly split



Direct: obstetric complications

Most commonly from PPH, Pre-eclampsia/eclampsia, puerperal sepsis, 1st trimester complications, AFE/PE, GTD



Indirect: aggravated by pregnancy

Pre-existing or coincidental conditions — infection (malaria, dengue, covid, bowel sepsis, meningitis), cardiac, liver or renal disease, GI haemorrhage



A significant shift since 2019

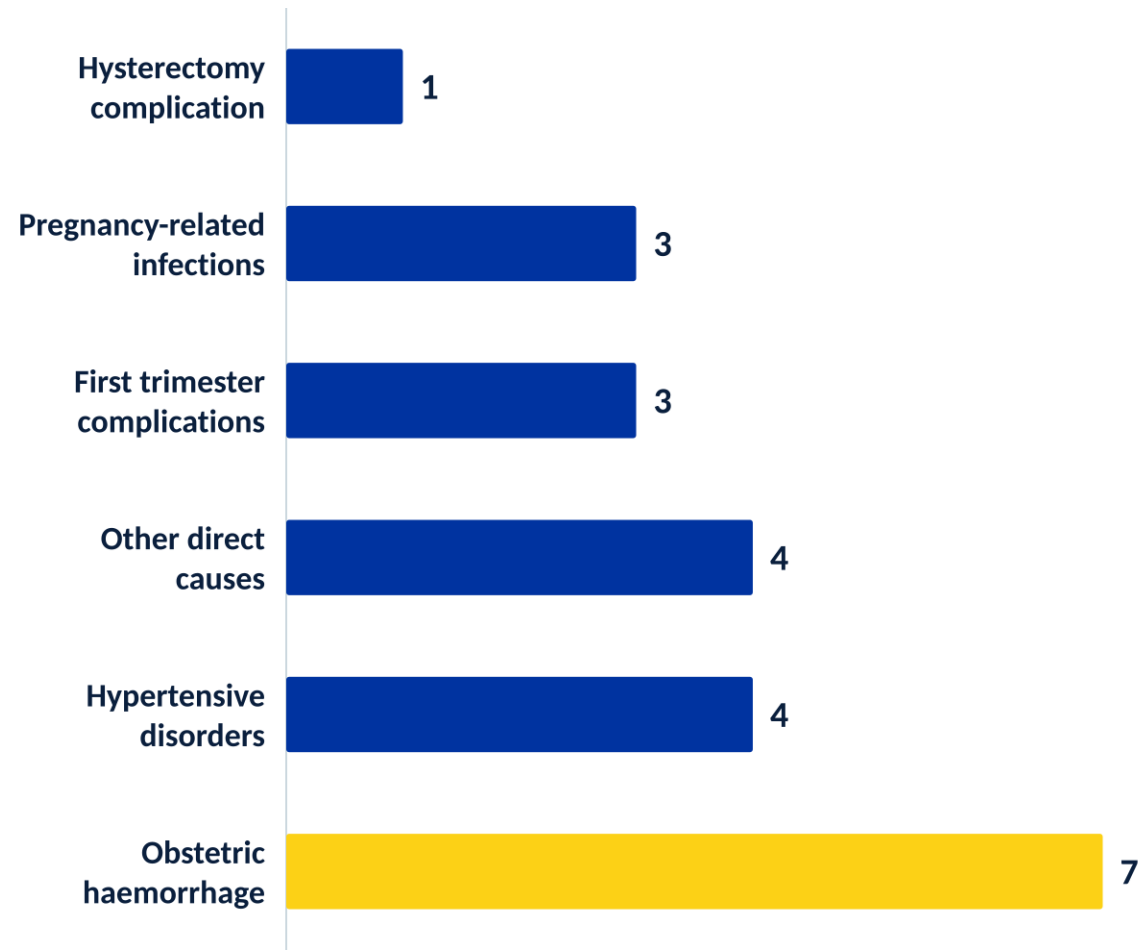
Indirect deaths rose significantly compared to the 2013–2017 study ($p=0.008$) — where as direct deaths trended down.



What this means

Reducing MMR further now depends as much on strengthening general health systems as on obstetric care itself.

Obstetric haemorrhage remains the leading direct cause



7 deaths (16%)

Obstetric haemorrhage — down from 28% in the 2013–2017 cohort, but still the single largest direct cause.



4 deaths (9%)

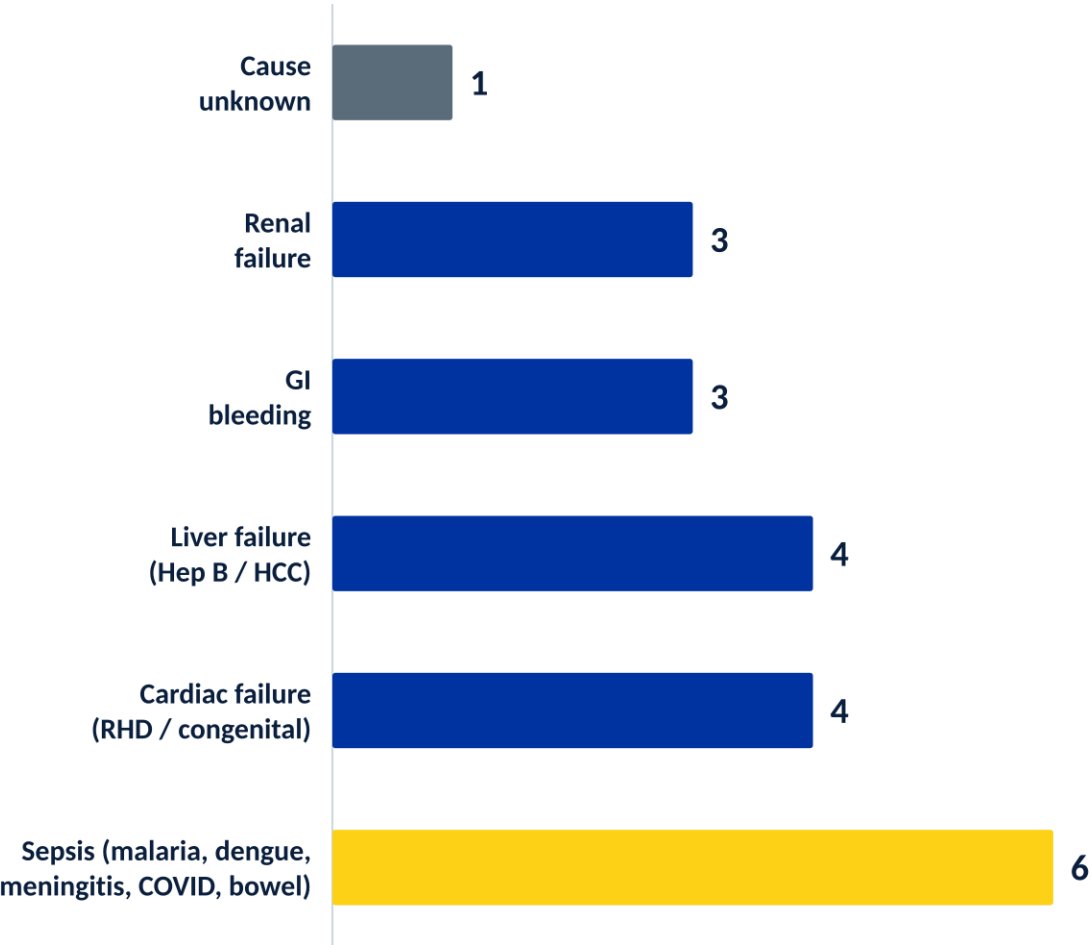
Hypertensive disorders of pregnancy, incl. pre-eclampsia and eclampsia.



Encouraging trend

Both haemorrhage and hypertensive deaths trended downward — plausibly linked to EmOC training since 2016.

Sepsis, cardiac and liver disease dominate indirect deaths



Sepsis complicated 20/43 deaths

Across both direct and indirect categories, sepsis contributed to almost half of all maternal deaths.



Hepatitis B under-tested

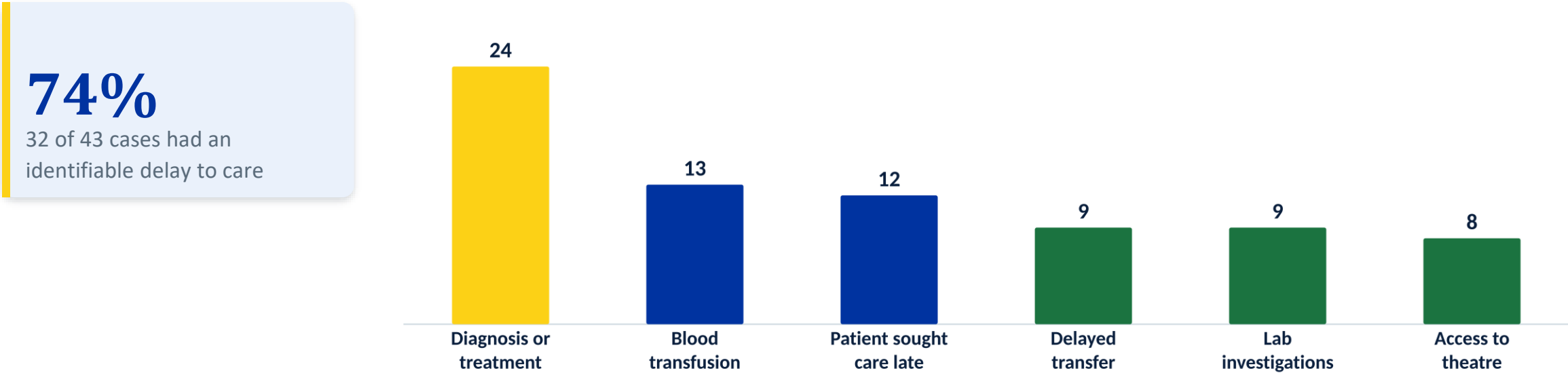
Only 11 women were tested for Hepatitis B — 6 were positive. Syphilis was positive in 5 of 22 tested (22.7%).



Anaemia was common

30 of 40 women with a recorded haemoglobin had Hb <110g/L; 3 had severe anaemia (Hb <50g/L).

Delays in care affected 3 in 4 women who died



67% had senior input

29 of 43 cases had direct Senior O&G involvement in care.

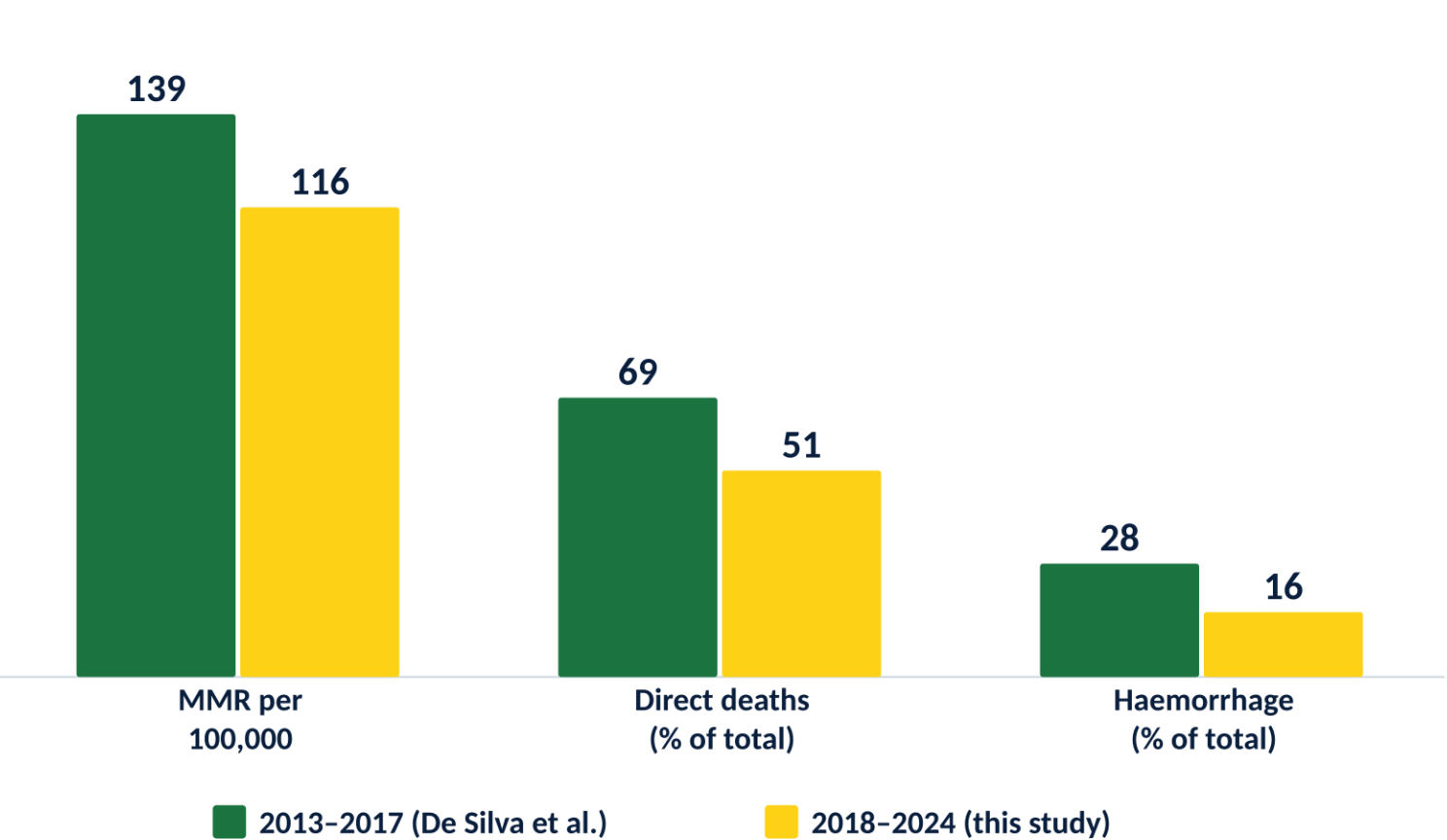
Transfer is a bottleneck

42% of women were transferred from provincial facilities; 9 cases saw delayed transfer.

Access to blood & theatre

13 cases delayed by blood product availability; 8 by access to theatre.

Progress since the 2013–2017 De Silva study



MMR improved: 139 → 116

A real reduction, though not statistically significant on its own.



Direct deaths: 69% → 51%

And haemorrhage-related deaths fell from 28% to 16% of all deaths.



Indirect deaths rose significantly

A statistically significant increase (p=0.008) — causes remain similar: sepsis, cardiac, liver, renal disease.



Likely drivers of improvement

Emergency Obstetric Care training (from 2016) and a national Obstetric Standard Treatment Manual (2019).

Limitations



Incomplete case records

Only 17 of the 43 original case files could be located, reflecting the real-world challenges of retrospective data collection in this setting.



No post-mortem examinations

Solomon Islands has limited access to post-mortem services. Cause of death was determined from the clinical picture alone, and may not always be accurate.



Single-site data only

Only deaths at NRH were captured. Maternal deaths in referring provinces, or before reaching hospital, are not included — so the true burden may be higher.

What this means for practice



Watch the postpartum period

Most deaths happened after delivery, often on general wards. Structured postnatal observation matters as much as intrapartum care.



Reduce delays at every step

Diagnosis, transfer, blood and theatre access were the most common delays. Local protocols and rehearsed emergency pathways can close these gaps.



Screen and treat indirect disease

Hepatitis B, rheumatic heart disease, malaria and dengue are driving a rising share of deaths. Systematic antenatal screening is essential.



Ongoing priorities identified by the study

- Strengthen High Dependency Unit capacity for critically unwell obstetric patients
- Continue Emergency Obstetric Care training and adherence to the national Standard Treatment Manual and Guidelines
- Improve provincial-to-NRH transfer systems, and access to blood products, labs and theatre



Thank you

Questions and discussion welcome.

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