

Counting what matters & making what matters count

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Health Custodian

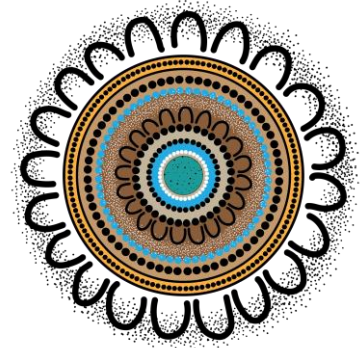
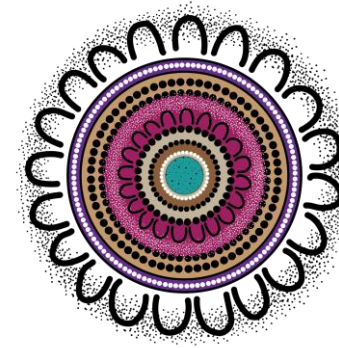
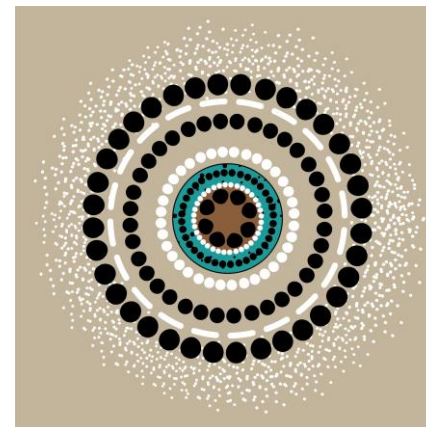
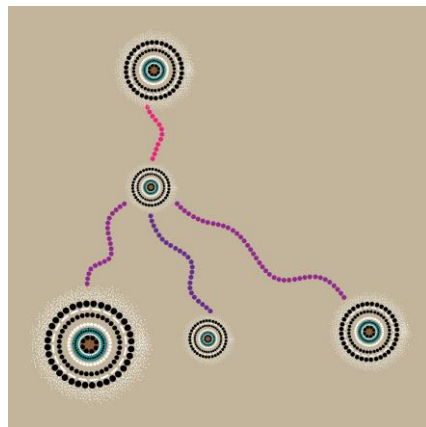
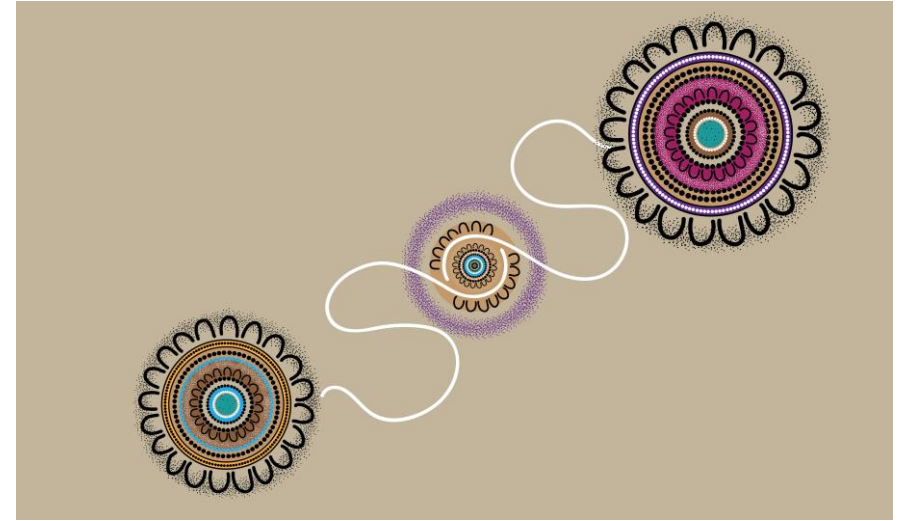
by Jasmine Sarin

This artwork has been commissioned by the CEC. It is called 'Health Custodian' and was created by Jasmine Sarin. Jasmine is a proud Kamilaroi (kuh-mi-luh-roy) and Jerrinja (jer-in-ja) woman from New South Wales.

Acknowledgement of Country and Elders

Before we begin, I would like to acknowledge the traditional owners of the land where we meet today.

I pay my respects to their Elders past and present. It is upon their lands that this building is built.



Conflict of Interest Declaration

The presenters, Dr Felicity Gallimore and Mr Steven Bowden have no conflicts of interest to declare

- All work presented is commissioned and paid for by the Clinical Excellence Commission, NSW

Safety Intelligence

The CEC's approach to data and patient safety

What is safety intelligence?

Safety intelligence is an approach to leverage and triangulate data to accurately anticipate, correctly diagnose and drive targeted intervention for patient safety.

What are the key tenets of safety intelligence?

Safety intelligence is underpinned by a focus on

- **improvement** rather than judgement,
- **anticipation** rather than retrospection, and
- **curiosity** rather than reporting

Safety Intelligence seeks to encourage questions of 'so what' and 'now what'.

Safety intelligence is not a goal in itself, it is a tool to assist in identifying, informing and monitoring improvement programs

Safety Intelligence Tools



01. SAFETY KPIs

Routine monitoring and response to established safety and quality KPIs such as HACs and potentially avoidable readmissions

02. INCIDENT REPORTING

Investigation and response to serious harm incidents as well as evaluating emerging trends and patterns

03. DATA TRIANGULATION

Use of novel and non-traditional data sets to provide greater insight to factors that influence patient safety

04. SMOKE SIGNALS

System monitoring of triangulated and trended data to anticipate emerging harm and safety signals

05. DATA DIVES

Investigation of targeted cohorts to identify causal factors and opportunities for improvement

06. INITIATIVE MONITORING

Access to targeted, near real-time data to inform progress of improvement initiatives

Counting what matters & making data count

in NSW's maternity hospitals



Dr Felicity Gallimore

*Obstetrician, Medical Clinical
co-Lead QIDS MatIQ*

What matters?

EXCLUSIVE: Maternity hospital scandals could cost the NHS £1bn a year to prevent more baby deaths

After the Shrewsbury maternity scandal in which more than 200 babies died officials warn it

Police examine 600 cases after damning NHS baby deaths report

Inquiry into maternity practices at Shrewsbury and Telford hospital trust finds 201 babies could have survived with better care



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NSW birth trauma inquiry described as 'me too' moment for mothers receives record 4,000 submissions

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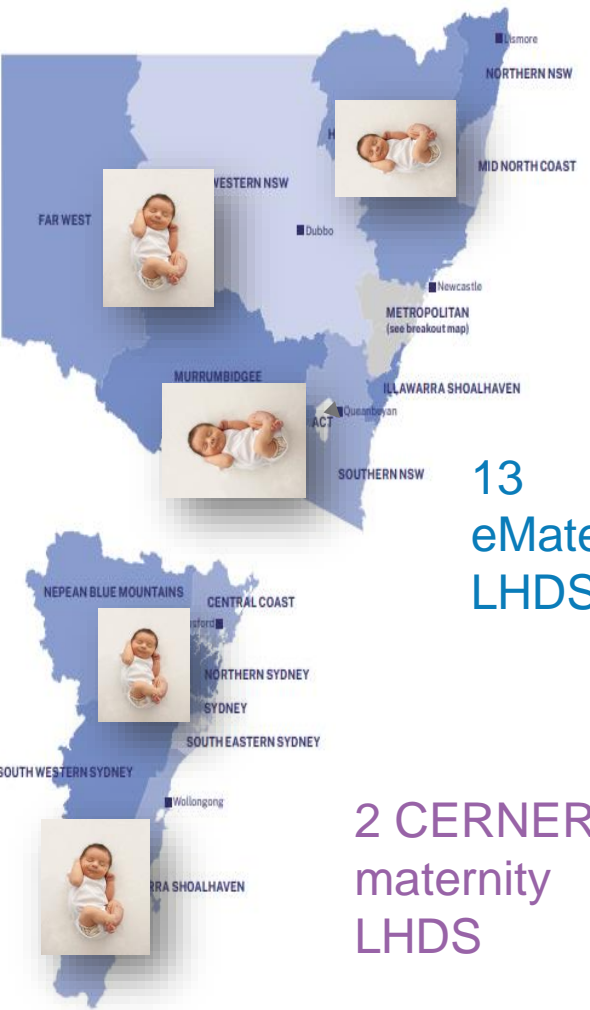
What should patients expect?

Best possible care

- Confident that we are not overlooking safety and quality issues
- System should not be satisfied with treading water.
- Using every opportunity to improve

Best possible information

QIDS MatIQ (NSW public hospital births)



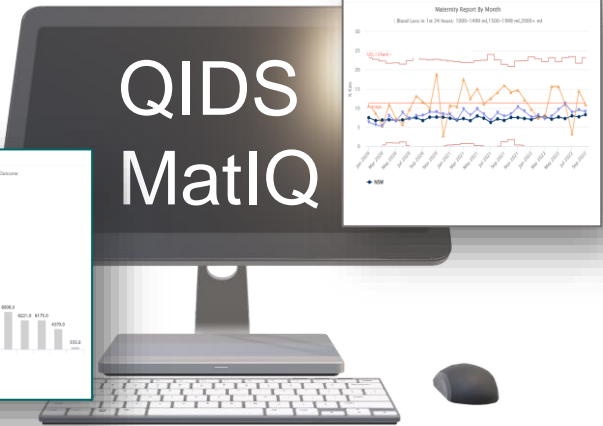
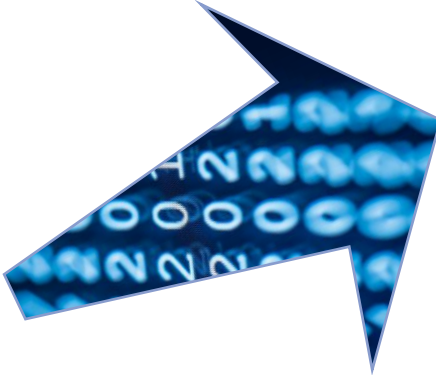
13 eMaternity LHDS

2 CERNER maternity LHDS

3/4 of babies

1/4 of babies

100% babies born in NSW public hospitals



Ref NSW Mothers and Babies: 2021 Report

World of possibilities



344,137*

*27 October 2023



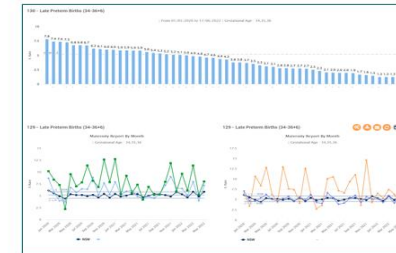
eMaternity
fields

QIDS MatIQ

CERNER
fields



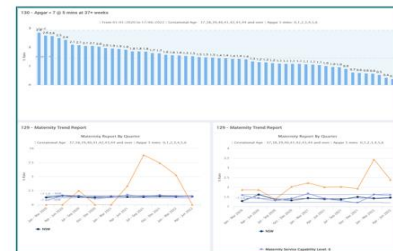
Stillbirth rate



Late preterm delivery rate



Planned birth < 39 weeks



Apgar < 7 at 5 mins, 37+ weeks



Postpartum haemorrhage 1000+mls



3rd and 4th degree vaginal tears

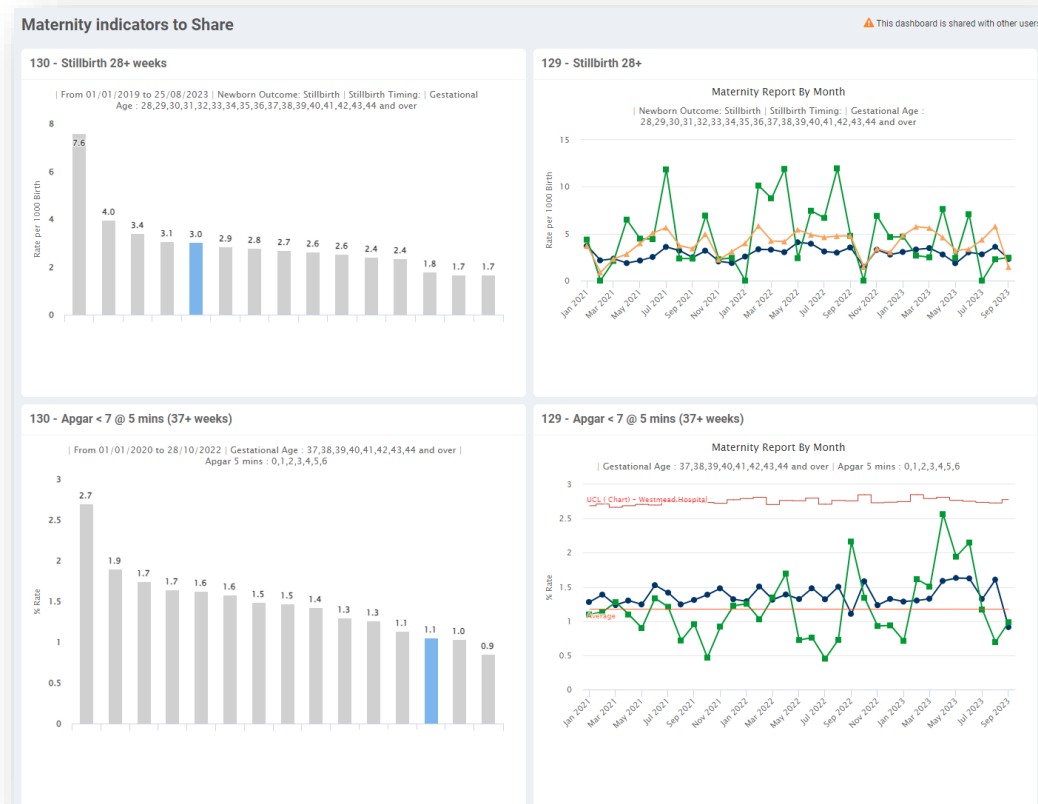
How do we reassure ourselves that the system is performing well and is providing safe, high quality care to NSW's mothers and babies?

Maternal and newborn outcome indicator dashboard

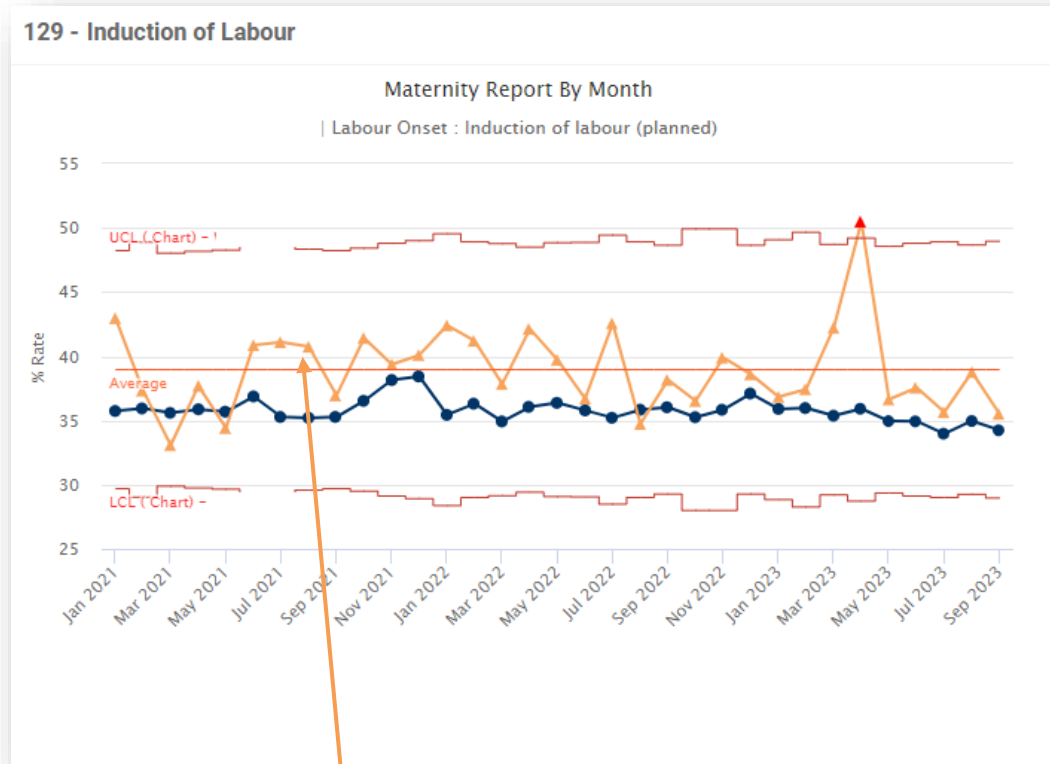
Individual hospital – ‘self-monitoring’

Maternity indicators to Share
30 reports

- Stillbirths- @ 28+ weeks.
- Rates of induction of labour,
- Pre-term birth rates
- Caesarean section rates
- 3rd/4th degree tear rates
- Post Partum haemorrhage rates
- Low Apgar scores
- NICU/Special care nursery admissions

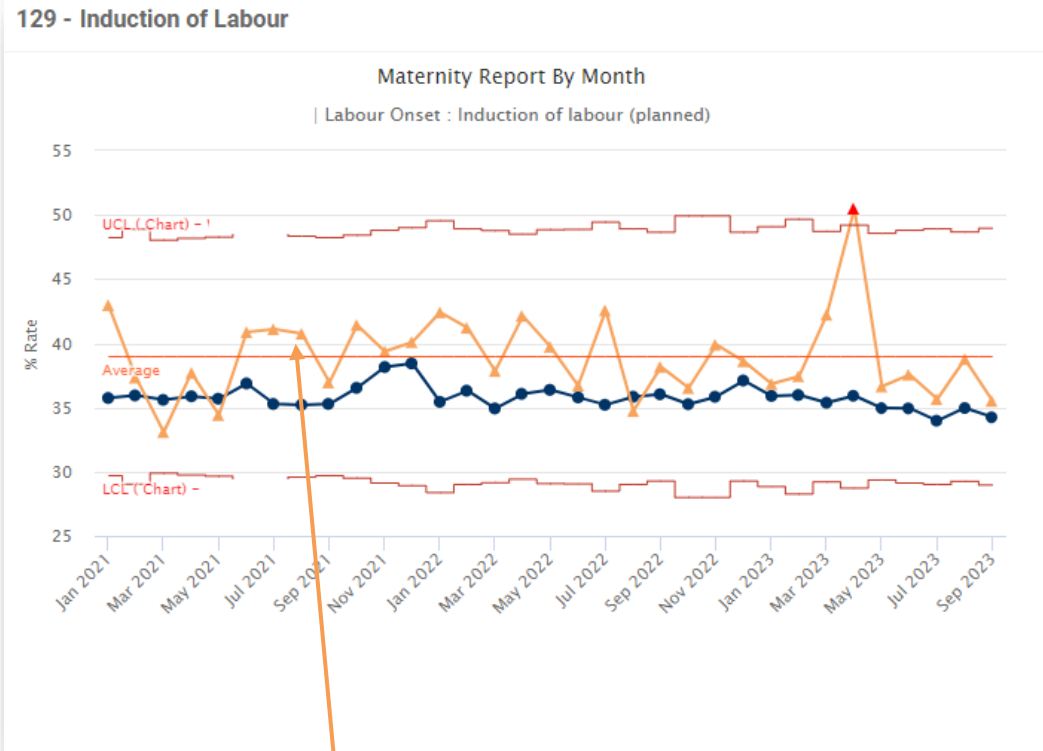


Induction of Labour Trend Jan 2021 - Sept 2023

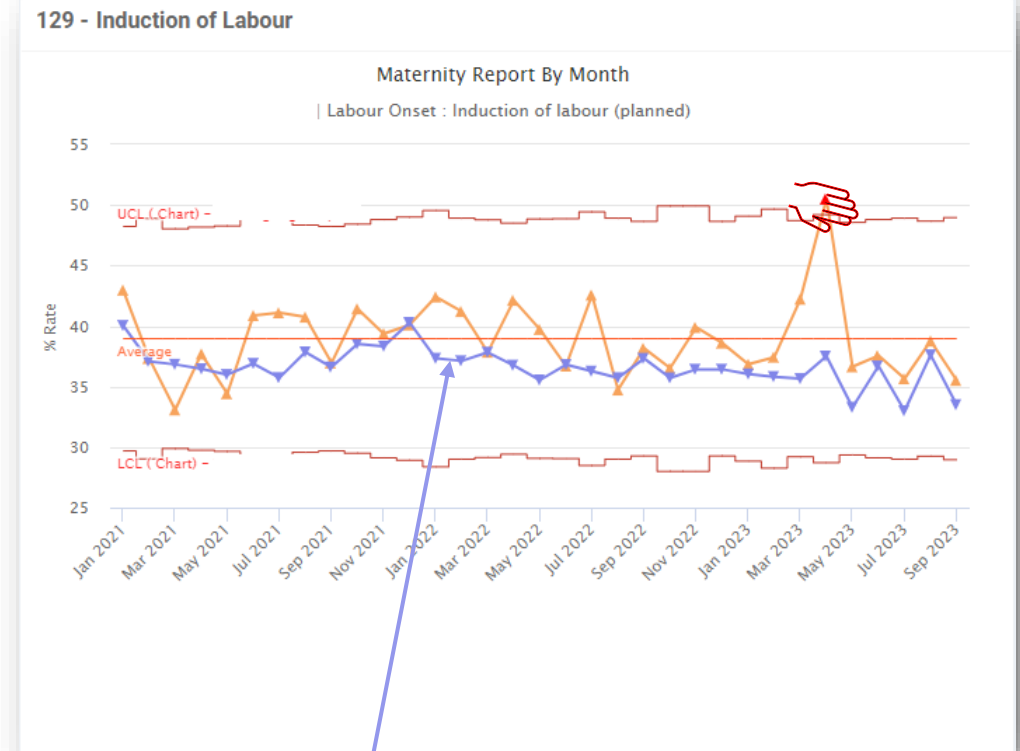


▲ Hospital

Induction of Labour Trend Jan 2021 - Sept 2023

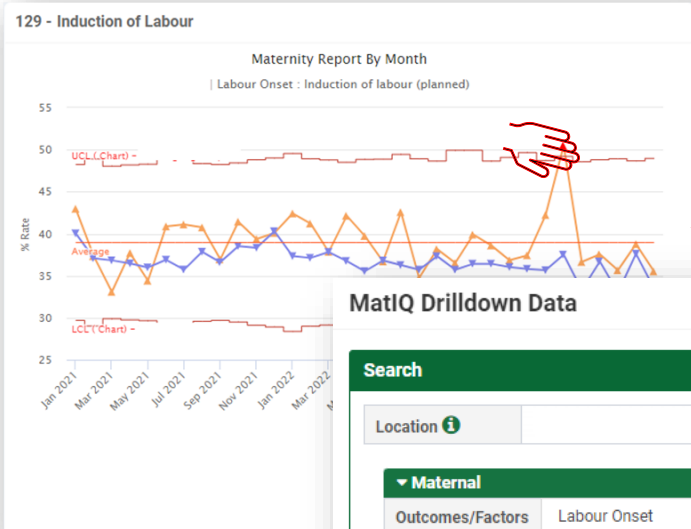


▲ Hospital



Maternity Hospitals of the same Capability Level

Induction of Labour: Drilldown



MatIQ Drilldown Data

Search

Location 📍

Maternal
Outcomes/Factors: Labour Onset
Labour Onset: Induction of labour (planned)

Neonatal
Outcomes/Factors: All

Report Type
View By: Month
Year Month: To

[Download Excel](#)

Woman MRN	Hospital of Birth	Mode of Birth	Newborn Date of Birth	Gestational Age at Birth	Newborn Weight	Apgar 5 Minutes	View
		Normal Vaginal	2023/04/06	41.30	4145	9	View
		Forceps	2023/04/27	39.40	3525	9	View
		Normal Vaginal	2023/04/13	41.50	4385	9	View
		Caesarean section	2023/04/20	39.40	4075	9	View
		Normal Vaginal	2023/04/18	39.00	3930	9	View

Detailed Individual Patient Drilldown Information

MatIQ Record Details ✕

Summary details +

This Pregnancy +

Past Medical History (only past medical conditions that have been reported will be listed below) +

Newborn Details -

Newborn MRN	12081962
Newborn Date of Birth	6/04/2023 2:26:00 PM
Gestational age at Birth	41+3
Birth weight (g)	4145
Plurality	1
Gender	Female
Apgar score at 1 minute	9
Apgar score at 5 minutes	9
Apgar score at 10 minutes	9
Birth Hospital	
Transfer to SCN or NICU for > 24 hours	No

Birth +

Postnatal details +

+ Add to M&M List

↓ Excel Download

✕ Close

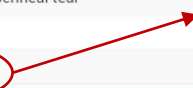
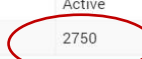
Past Medical History (only past medical conditions that have been reported will be listed below) -

Hx Breast Surgery	Breast or nipple piercing
Hx Gynaecological Conditions	Other
Hx Haematological Disease	Anaemia: Iron deficiency
Hx Infectious Disease	Chicken pox/Shingles
Hx Kidney Renal Disease	Recurrent UTI or pyelonephritis
Hx Mental Health Diagnosis	Anxiety, Other
Hx Mental Health Rx	Mental health diagnosis with treatment
Hx Musculo Skeletal Disease	Fractures

Birth -

Labour type	Induction of labour
Induction type	PG + OXY
Indication/s for induction of labour	Suspected macrosomia
Pharmacological Analgesia provided in labour	Epidural, Nitrous Oxide gas
Duration of 1st stage (hours and minutes)	3 Hrs 30 Mins
Duration of 2nd stage (hours and minutes)	2 Hrs 4 Mins
Active Pushing Duration (hours and minutes)	0 Hrs 54 Mins
Duration of 3rd stage (hours and minutes)	0 Hrs 15 Mins
Duration of ruptured membranes (hours and minutes)	15 Hrs 4 Mins
Mode of Birth	Normal Vaginal Birth (NVB)
Manoeuvres to deliver shoulders	Nil
Main indication for caesarean section	
All listed indications for caesarean section	
Caesarean section urgency code (1-4)	
Epidural anaesthesia provided during delivery	Yes
Spinal anaesthesia provided during delivery	
Genital tract trauma	1st degree perineal tear
Management type for 3rd stage	Active
Estimated blood loss in first 24 hours (mls)	2750

2750 ml

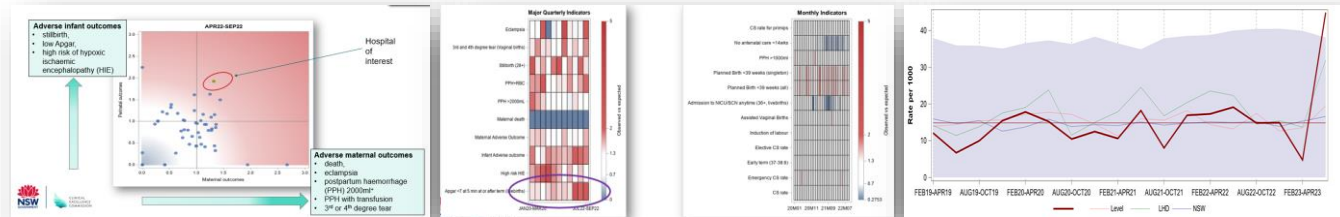




March 2023 onwards.. State-wide coverage

Responsibility to inform of concerning trends

What to monitor and How to communicate findings



Maternity indicators

Major infant adverse outcomes

- Stillbirths 28+ wks
- Apgar <7 @ 5 mins, 37+ wks livebirths
- Poor infant condition (blood gases)

Major maternal adverse outcomes

- Maternal death
- Eclampsia
- 3rd or 4th degree perineal tears
- PPH 2000+ mls
- PPH with transfusion

Other infant adverse outcomes

- Admission to NICU/SCN 36+ wks
- Small babies <3rd centile at 40+ wks

Other maternal adverse outcomes

- PPH 1000+ mls
- Transfer to ICU/HDU postnatal
- Peripartum hysterectomy
- Uterine rupture

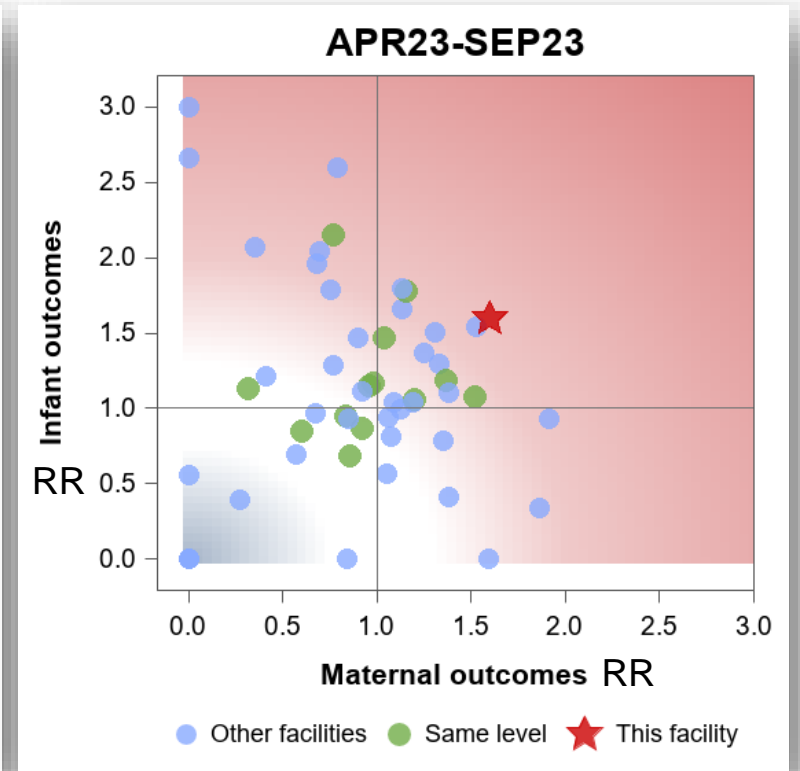
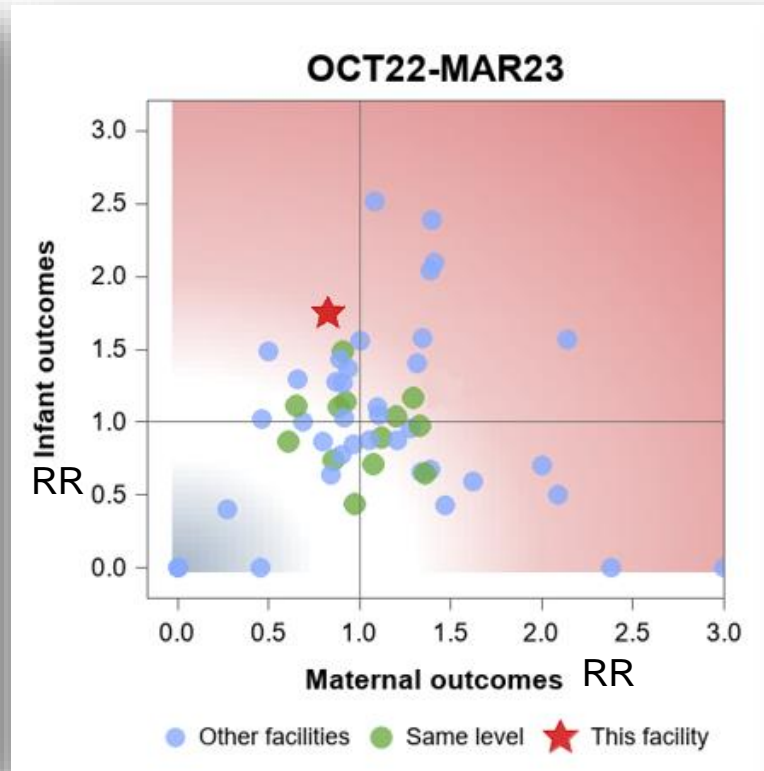
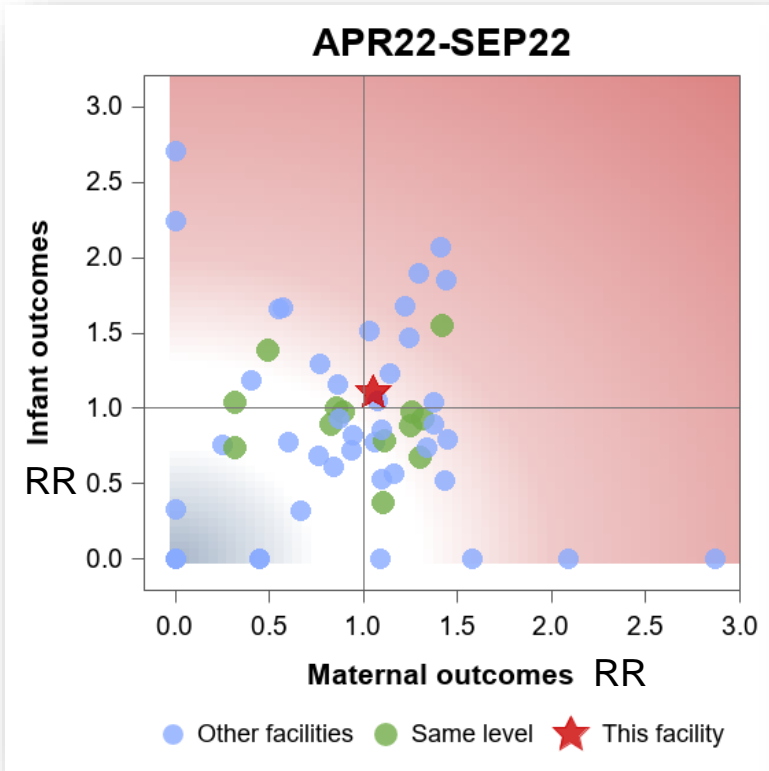
Timing of birth and interventions

- Late Preterm Births (34-36.6)
- Early Term Births (37-38.6)
- Induction of labour
- Assisted delivery (vacuum/forceps)
- Planned births <39 weeks
- Overall Caesarean section (CS) rate
- Emergency CS rate
- Elective CS rate
- CS under general anaesthetic

Antenatal indicators

- Smoking in pregnancy
- Antenatal care in first trimester

Quadrants - Severe infant and maternal outcomes



Monitor 30 indicators

Semi-automated – equivalent to looking at 1800+ control charts across the system every quarter

Statistically significant changes over previous 12 months – assessing how a hospital is changing relative to the whole system

Special cause variation – how a hospital is changing relative to its own ‘form’ over time

Facility	Control charts (qtr/yr)	Trend
Hospital A	Planned Birth <39 weeks (singleton) 1/ 1 Planned Birth <39 weeks (all) 1/ 1 Elective CS rate 1/ 1 Antenatal care first trimester (<14 wks) 0/ 1	Planned Birth <39 weeks (singleton) ▲ Planned Birth <39 weeks (all) ▲ Early term (37-38.6) ▲ Emergency CS rate ▼
Hospital B	CS rate 0/ 1 Emergency CS rate 0/ 1 CS rate for primips 0/ 1 Late or postterm births (>41.3) 0/ 1	Maternal Adverse Outcome ▲ Poor condition at birth ▲ CS rate ▲ Elective CS rate ▲ CS rate for primips ▲
Hospital C	Infant Adverse outcome 1/ 1 Apgar <7 at 5 min at or after term (livebirths) 1/ 1 Stillbirth (28+) 0/ 1	Infant Adverse outcome ▲ Apgar <7 at 5 min at or after term (livebirths) ▲ eMaternity Adverse infant outcome ▲
Hospital D	CS rate 1/ 2 Emergency CS rate 1/ 1 Antenatal care first trimester (<14 wks) 0/ 1 Planned Birth <39 weeks (singleton) 0/ 1 Planned Birth <39 weeks (all) 0/ 1 Elective CS rate 0/ 1	Emergency CS rate ▲ PPH >1000ml ▲

How to help and support improvement



Contact with Director of Clinical Governance and Obstetric Head of Department

Informed of the result of the hospital surveillance for that quarter and offered targeted, deep dive of outcome data using the CEC/MatIQ + biostatistician support team

Confidence in data

More data

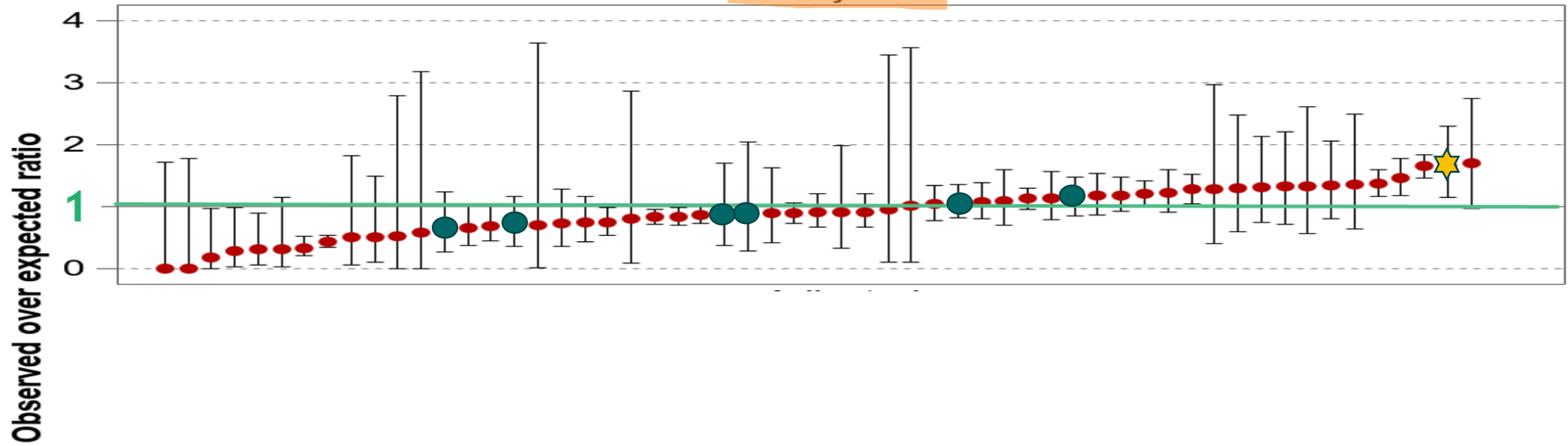
Plans for improvement

Confidence in data

My patients are 'higher risk'.....

VARIATION: Apgar <7 at 5 mins (livebirths 34+ weeks)

Unadjusted

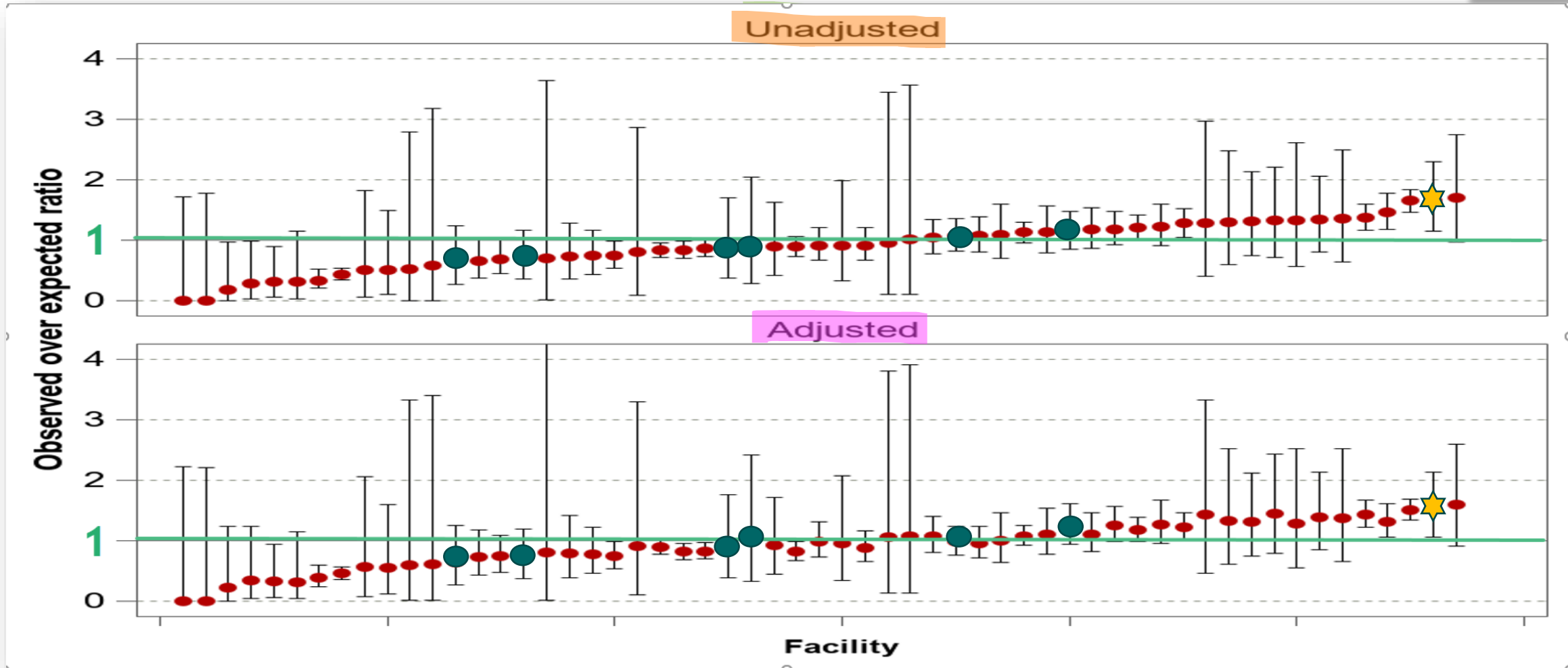


Average rate is 1.7%. Total n=149284 (n per hospital from 88 to 13597).

January 2020-October 2022

Unadjusted and adjusted data expressed as observed over expected ratios. For the unadjusted ratio, the expected is the average. For the adjusted ratio the expected is calculated from a regression model accounting for maternal age, BMI, socio-economic quintile, smoking status, multiple birth, parity, chronic conditions, IVF, drug use and alcohol risk.

VARIATION: Apgar <7 at 5 mins (livebirths 34+ weeks)

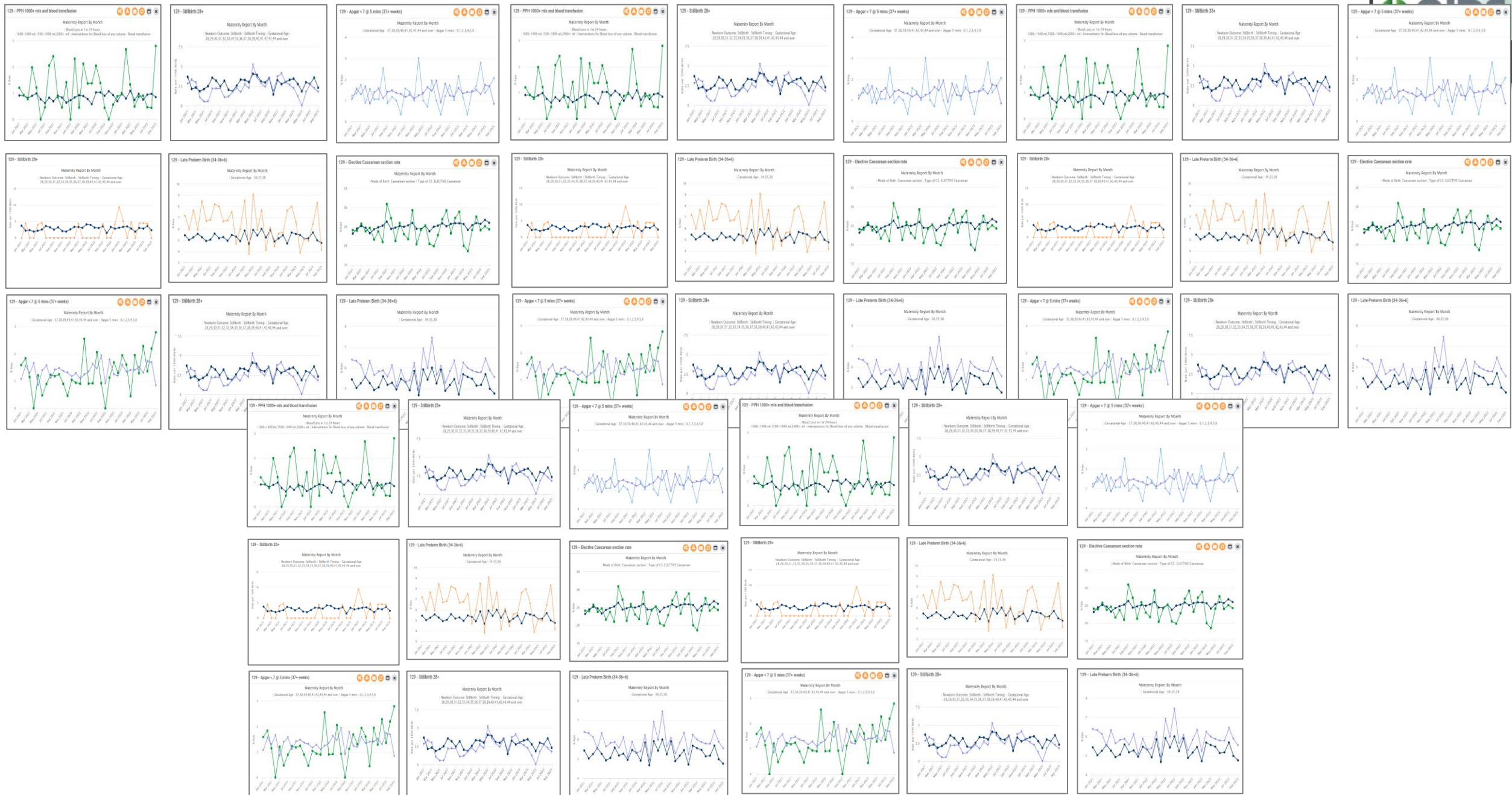


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More Data

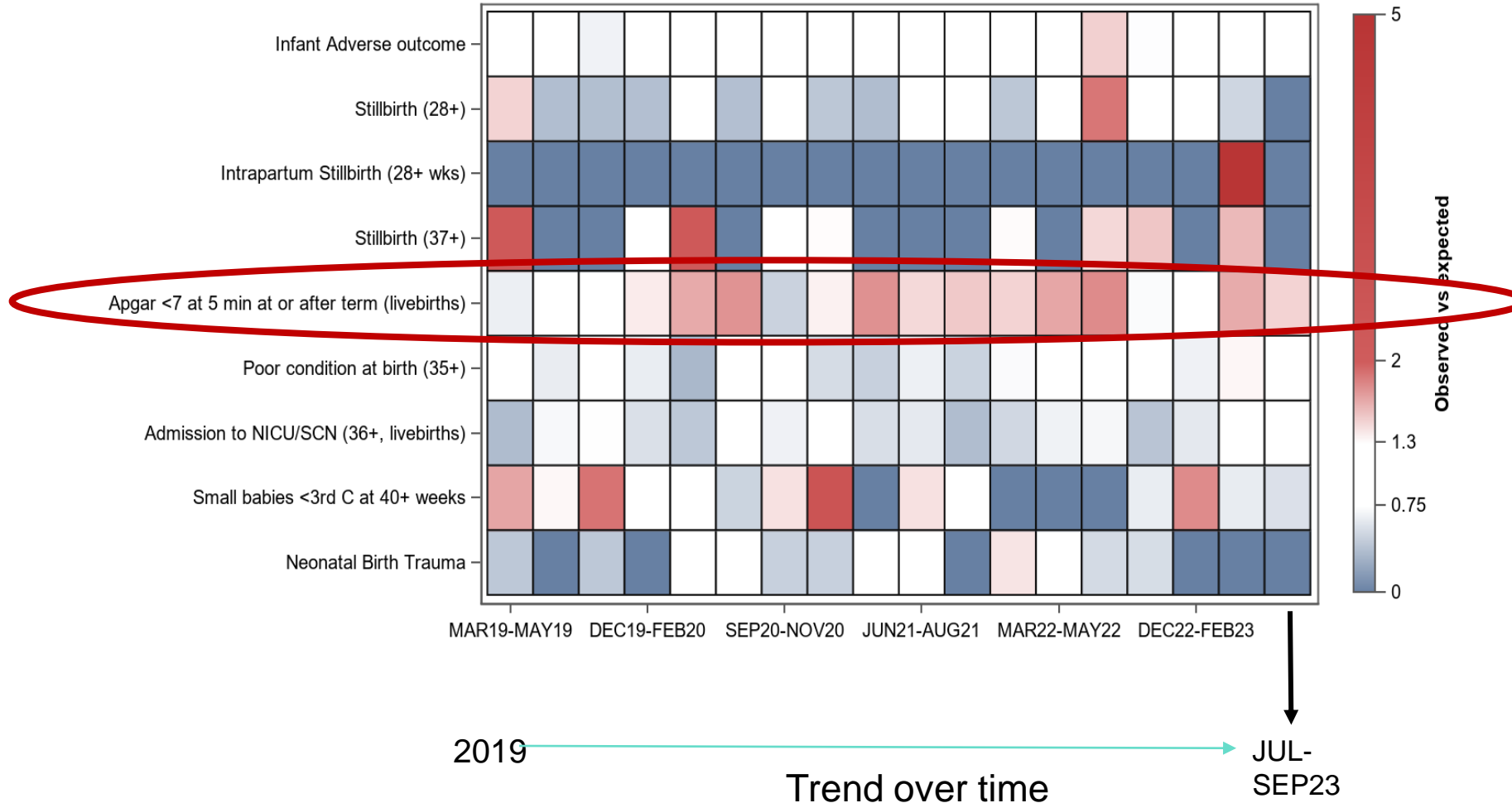
Deeper Understanding





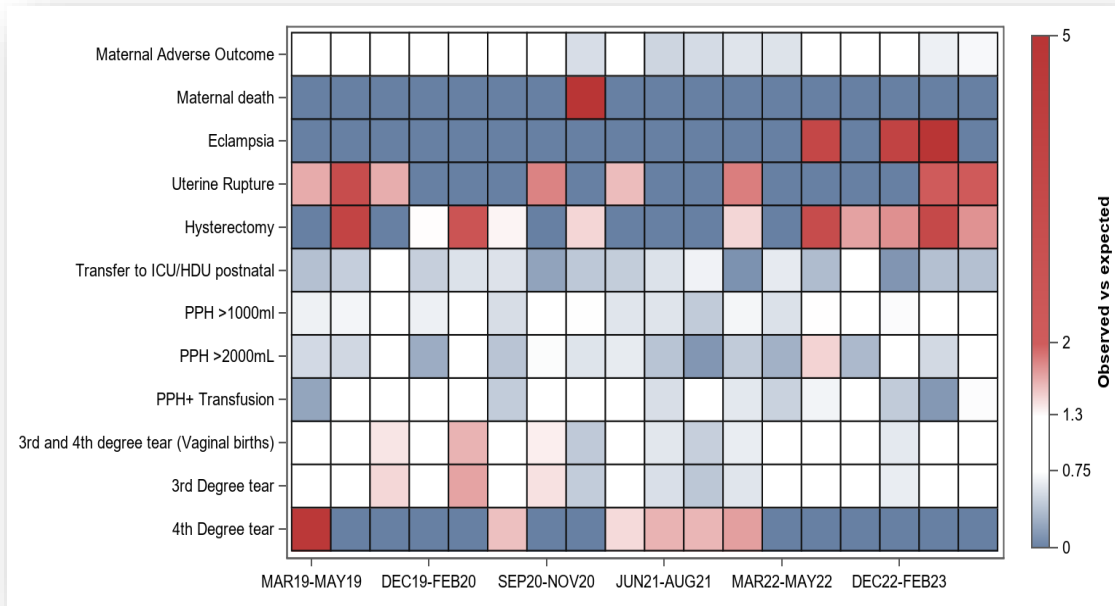
Heat maps: condense large numbers of trend graphs into a visual

Newborn Outcomes

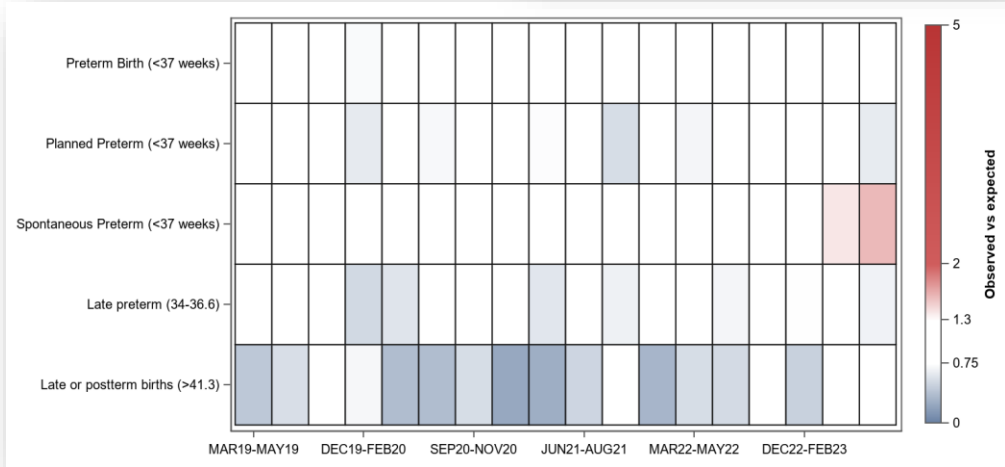


30 additional indicators...(and up to 60 if requested)

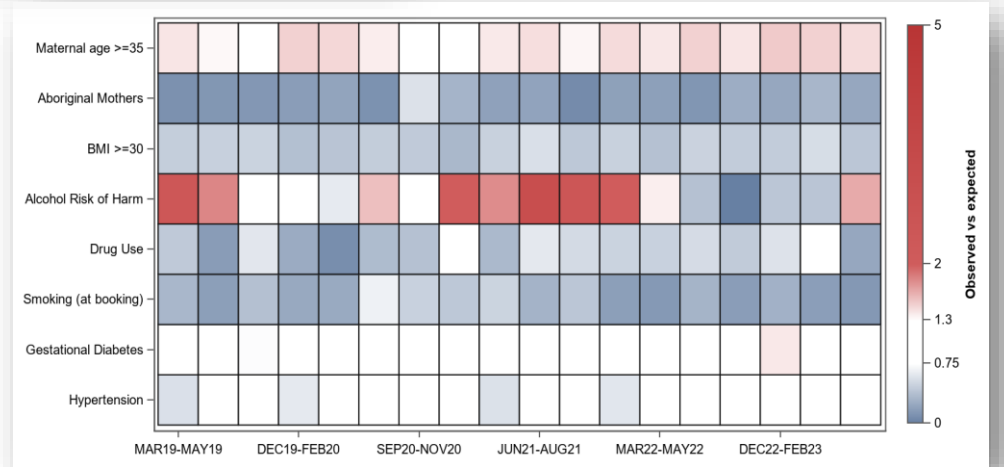
Maternal Outcomes



Timing of Birth

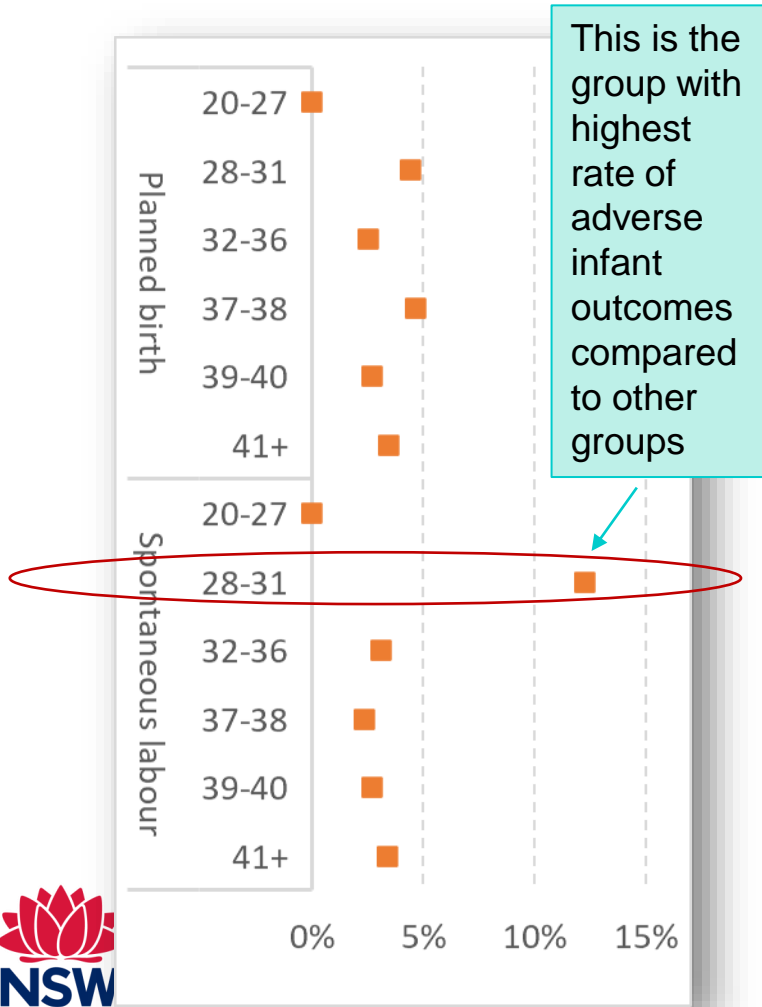


Maternity Population

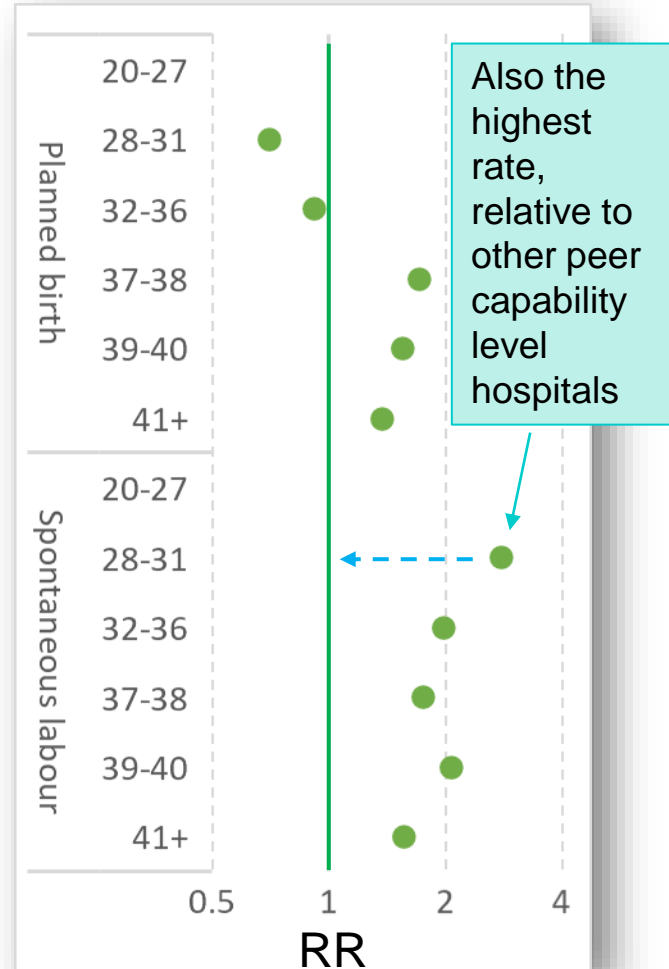


Where to target improvement resources?

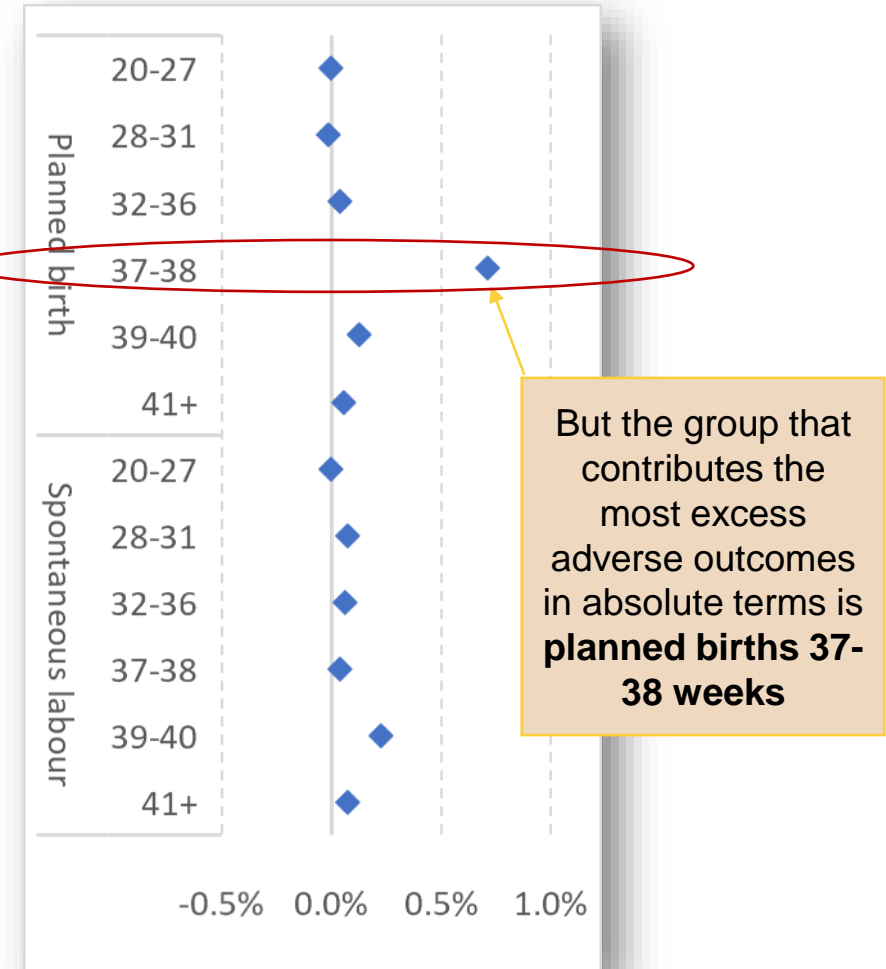
Adverse infant outcome rate by birth characteristics



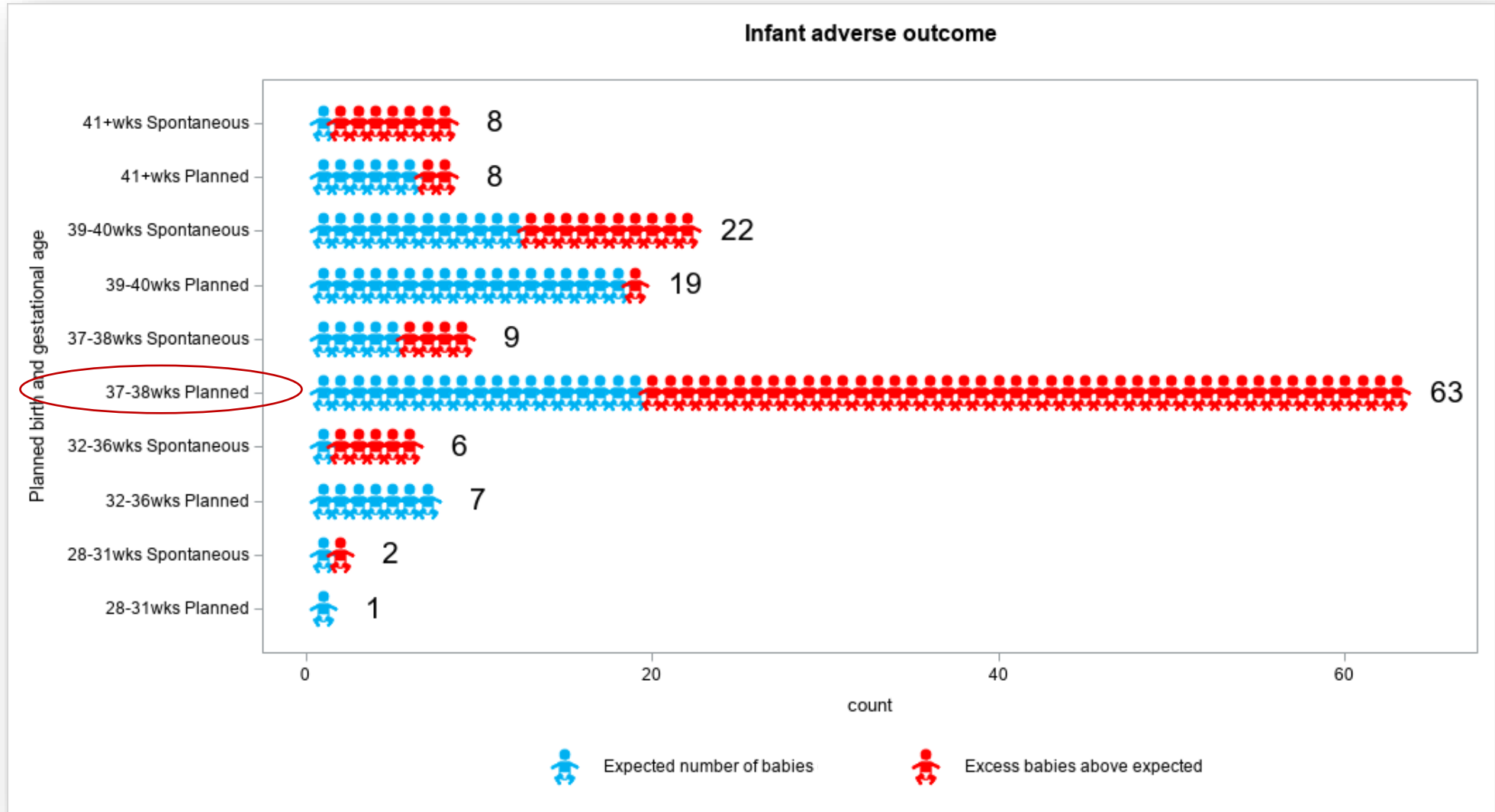
Relative rate against other hospitals of same level by birth characteristics



Excess adverse outcomes compared with same level hospitals



Number of babies (expected + excess) by category



Initiating improvement is not confined to ‘top-down change..’

Australian Pre-term Birth Prevention Collaborative

Aiming to safely reduce preterm (< 37 weeks) and early term births (37-38+6) by 20%

*Reduce inductions/elective caesareans that are performed at **less than 39 weeks** for no medical indication.*

Empower the CHANGE-MAKERS – the midwives and junior doctors

Plans for theatre list changes

Sticky labels on notes

Changes in booking-in processes

Weekly graphs printed out and posted on back of staffroom door

What matters?

EXCLUSIVE: Maternity hospital scandals could cost the NHS £1bn a year to prevent more baby deaths

After the Shrewsbury maternity scandal in which more than 200 babies died officials warn it

Police examine 600 cases after damning NHS baby deaths report

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What matters?

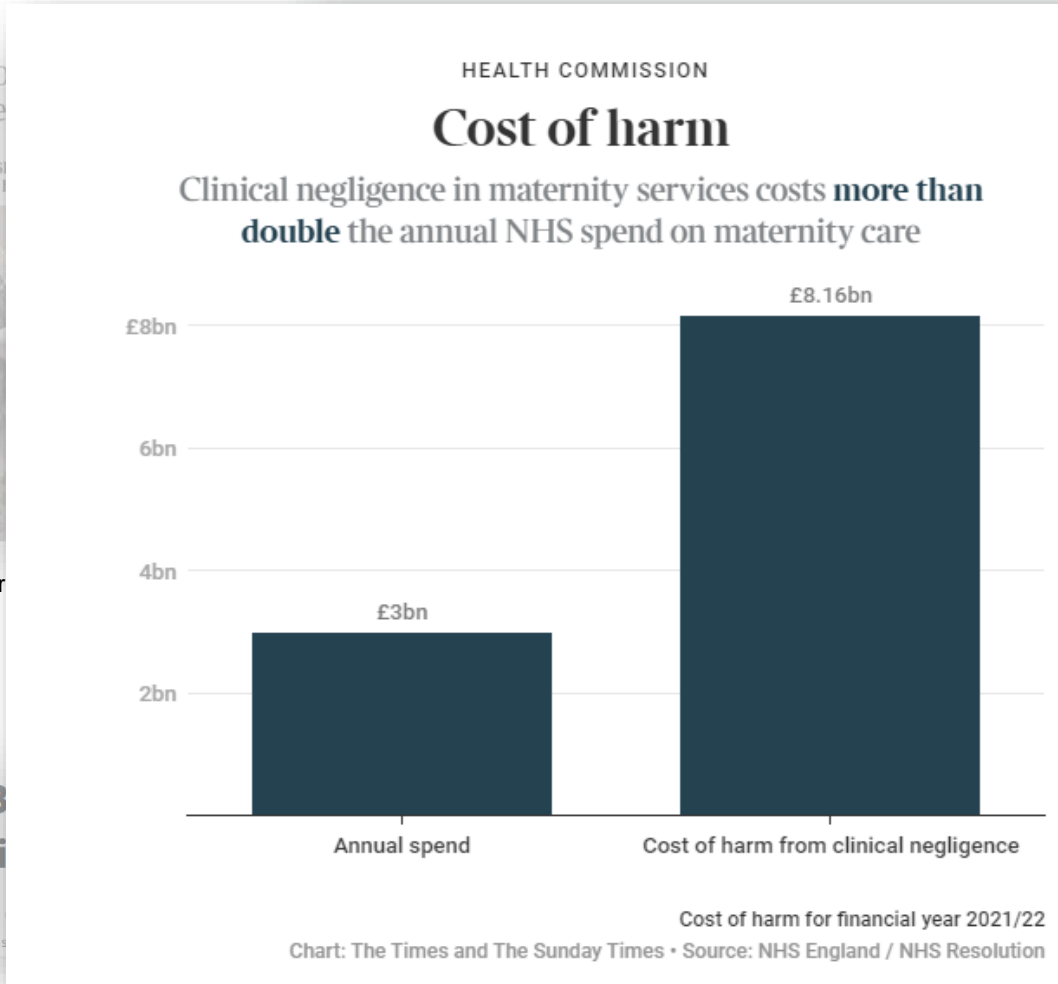
EXCLUSIVE: Maternity hospital scandals could cost the NHS £1bn a year by deaths

Police examine 600 NHS baby deaths re

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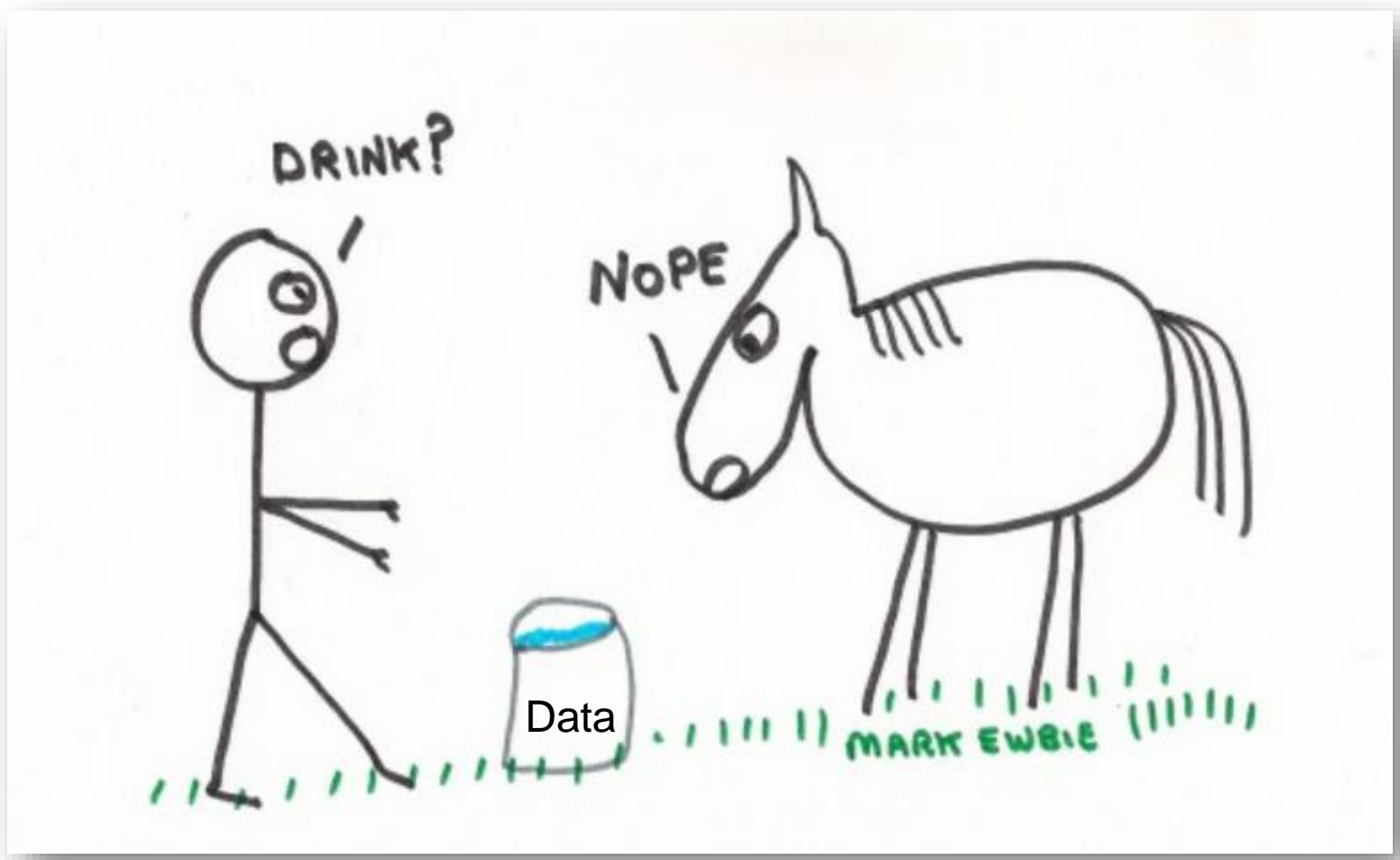
an 200 babies died officials warn it



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Established 21 June 2023

Where we were..



Where are we now?



A new generation of health workers, thirsty for improvement

QIDS MatIQ team

Dr Jim Mackie and Sarah Lyons and the CEC QIDS data team

Dr Felicity Gallimore and Prof Jonathan Morris – Obstetric Medical
Clinical Co-Leads

Ms Kristen Rickard – Midwifery Data Lead

Dr Deborah Randall and Dr Jill Patterson – QIDS MatIQ
biostatisticians

Ms Julianne Jones – Midwifery Lead/Project Manager

Ms Amanda Rehayem – Midwifery Lead Preterm Birth Prevention
eHealth NSW team