## Counting what matters & making what matters count

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### Steve Bowden

Associate Director, Patient Safety



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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

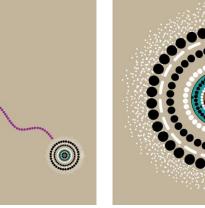
Before we begin, I would like to acknowledge the traditional owners of the land where we meet today.

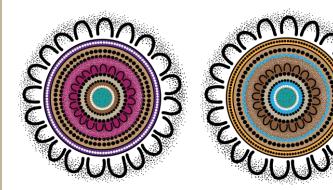
I pay my respects to their Elders past and present. It is upon their lands that this building is built.



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## **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

#### **03. DATA TRIANGULATION**

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

#### **05. DATA DIVES**

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

#### **02. INCIDENT REPORTING**

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

#### 04. SMOKE SIGNALS

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

#### **06. INITIATIVE MONITORING**

Access to targeted, near realtime 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 MatlQ



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## What should patients expect?

Best possible care

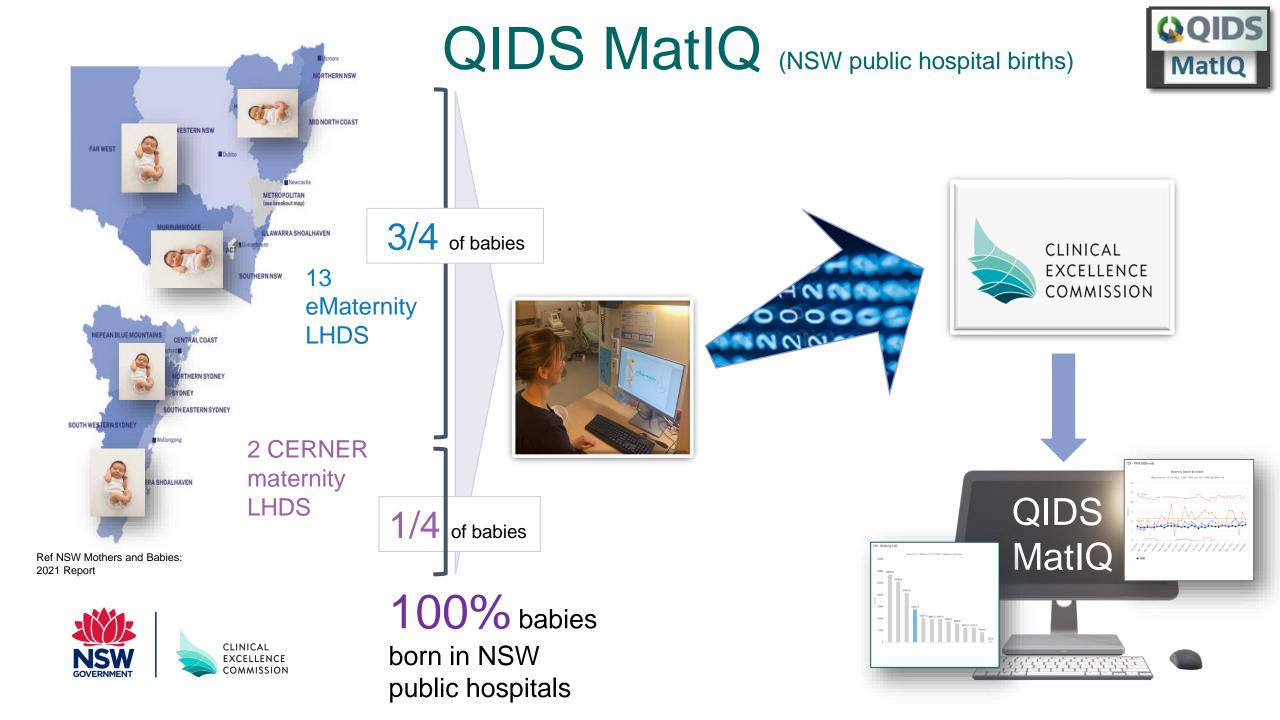
- Confident that we are not overlooking safety and quality issues
- System should not be satisfied with treading water.
- Using every opportunity to improve

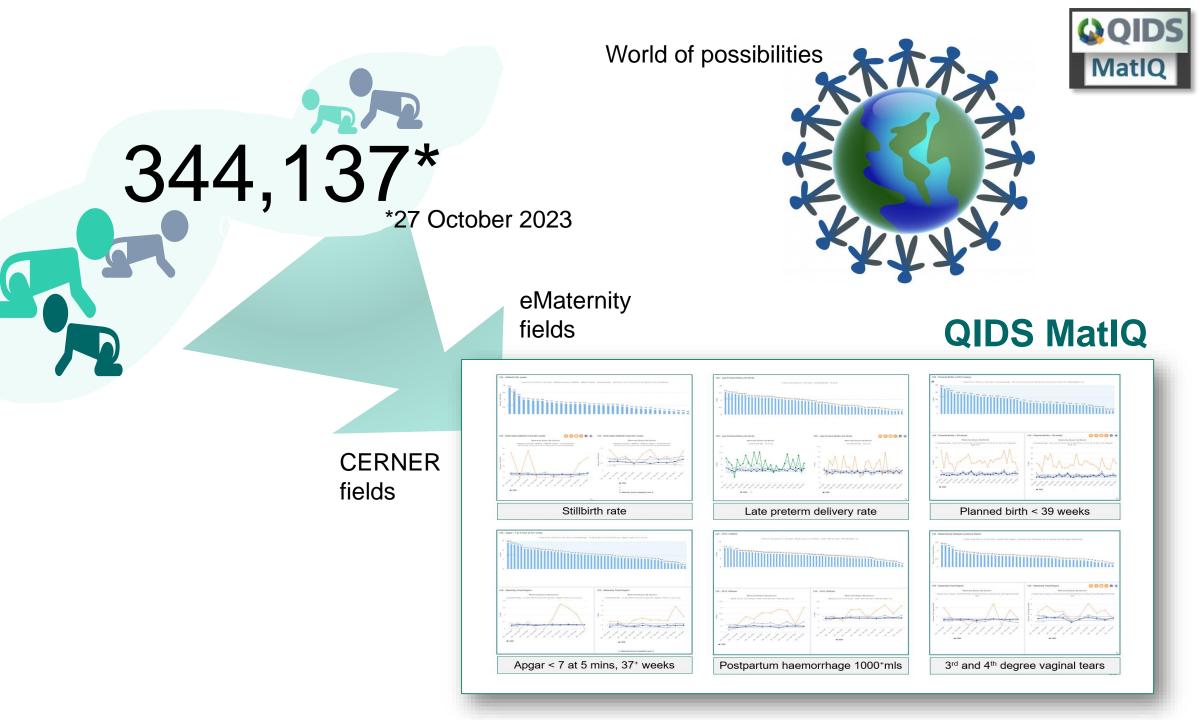




## Best possible information









## 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

3<sup>rd</sup>/4<sup>th</sup> degree tear rates

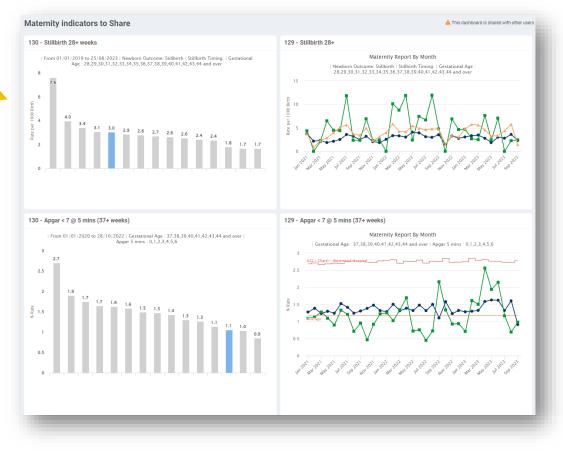
Post Partum haemorrhage rates

Low Apgar scores

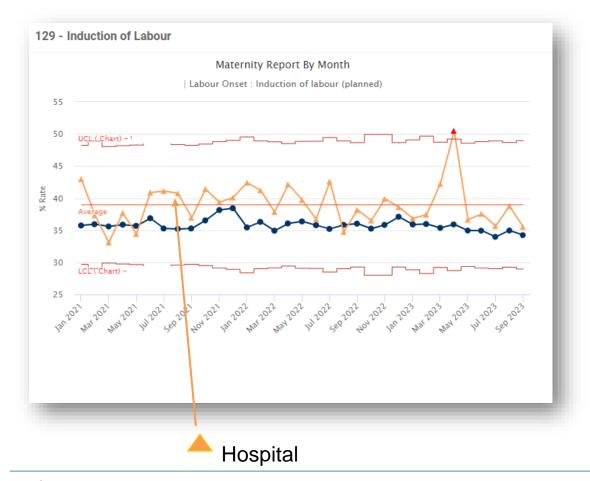
NICU/Special care nursery admissions



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## Induction of Labour Trend Jan 2021 - Sept 2023





**/la** 

## Induction of Labour Trend Jan 2021 - Sept 2023

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# Induction of Labour: Drilldown

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			Normal Vaginal	2023/04/13	41.50	4385	9	🖻 View	
			Caesarean section	2023/04/20	39.40	4075	9	Þ View	

**NSW** 

GOVERNMENT

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### **Detailed Individual Patient Drilldown Information**



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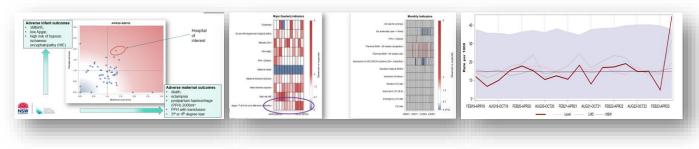




## March 2023 onwards.. State-wide coverage

### 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

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- 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

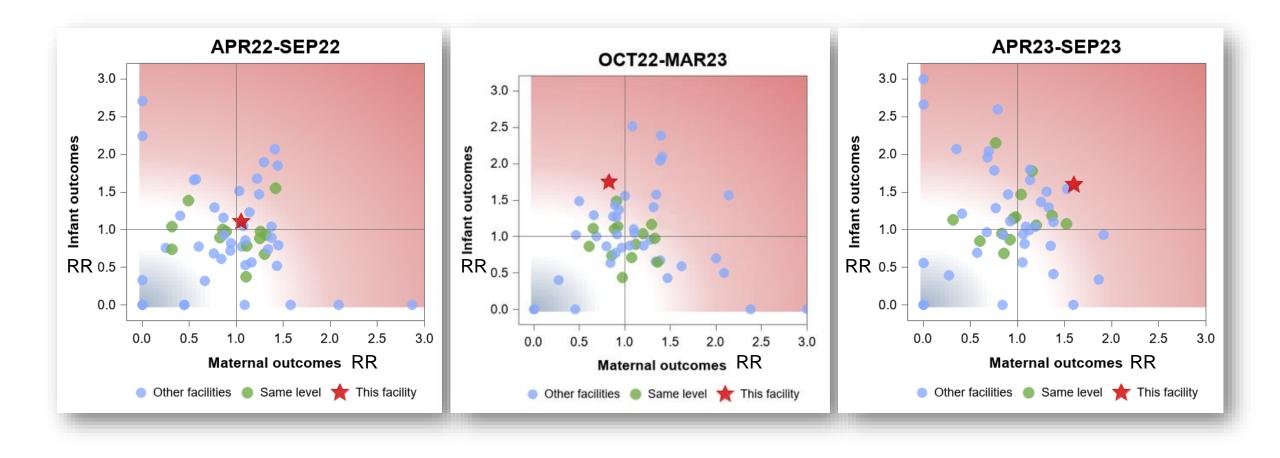
Antenatal indicators

- Smoking in pregnancy
- Antenatal care in first trimester





### Quadrants - Severe infant and maternal outcomes





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## 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

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Plans for improvement

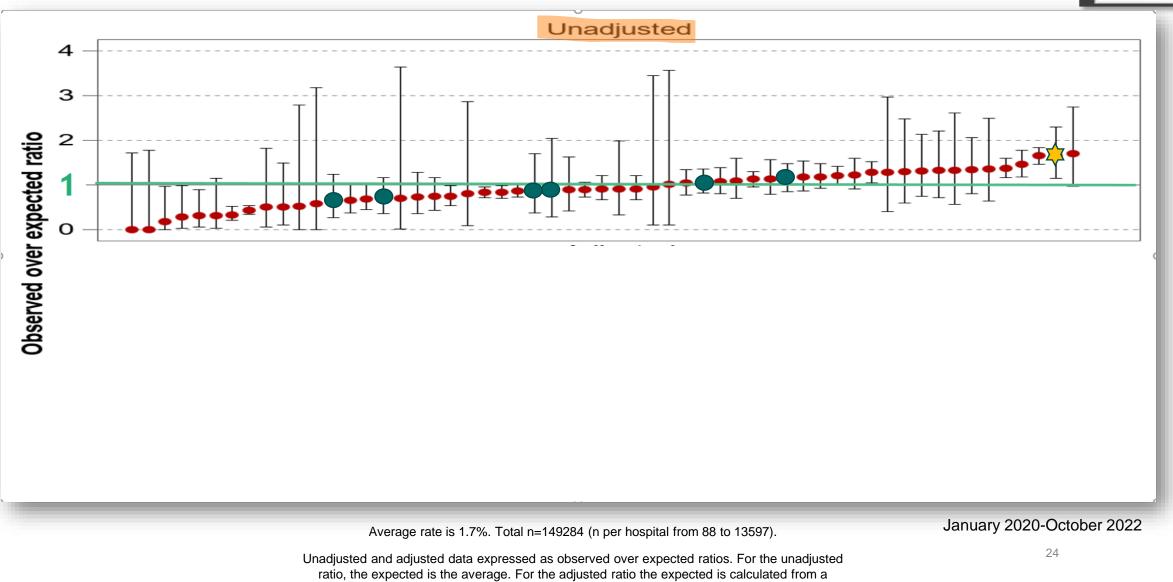


Confidence in data

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



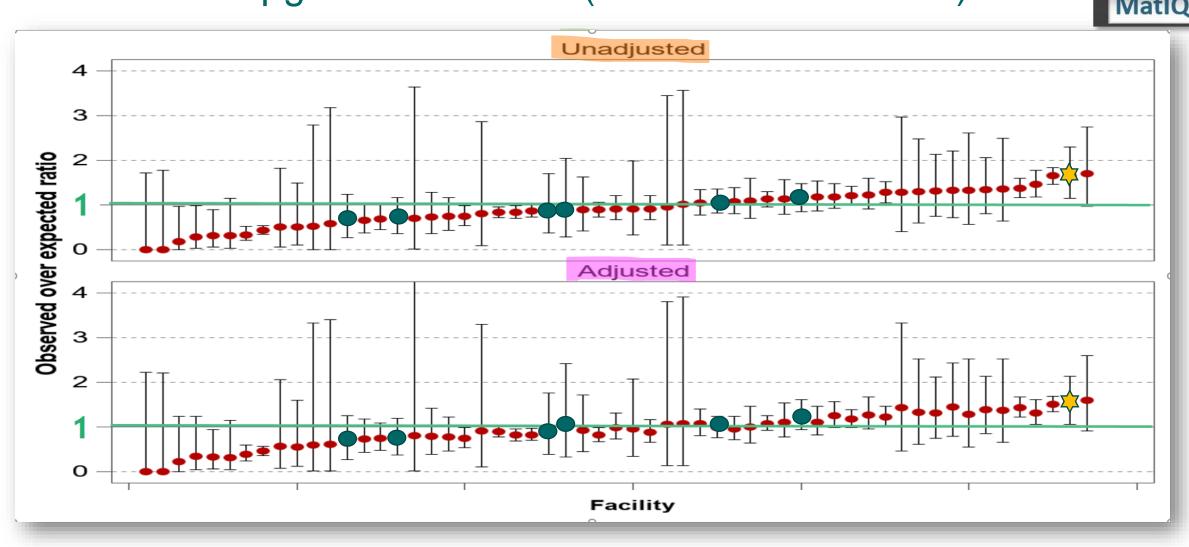
### VARIATION: Apgar <7 at 5 mins (livebirths 34+ weeks)



Mat

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)



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

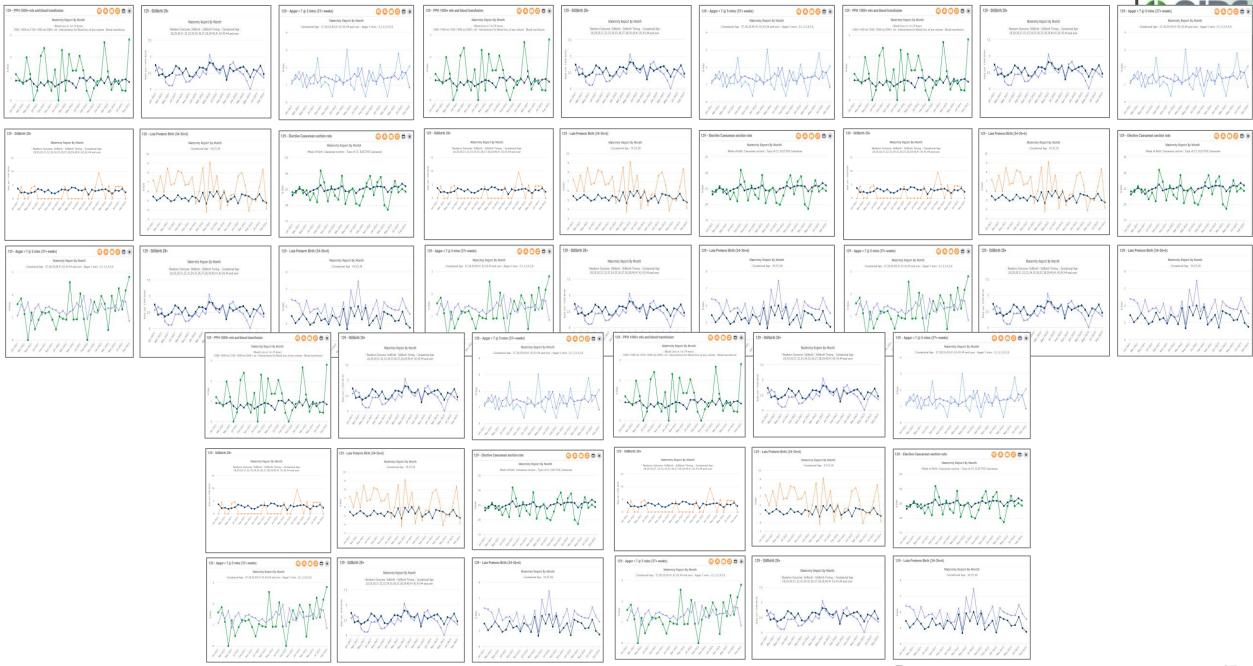
Unadjusted and adjusted data expressed as observed over expected ratios. For the unadjusted ratio, the expected is the average for capability level . For the adjusted ratio the expected is calculated from a regression model accounting for maternal age, BMI, socio-economic quintile, smoking status, multiple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

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More Data

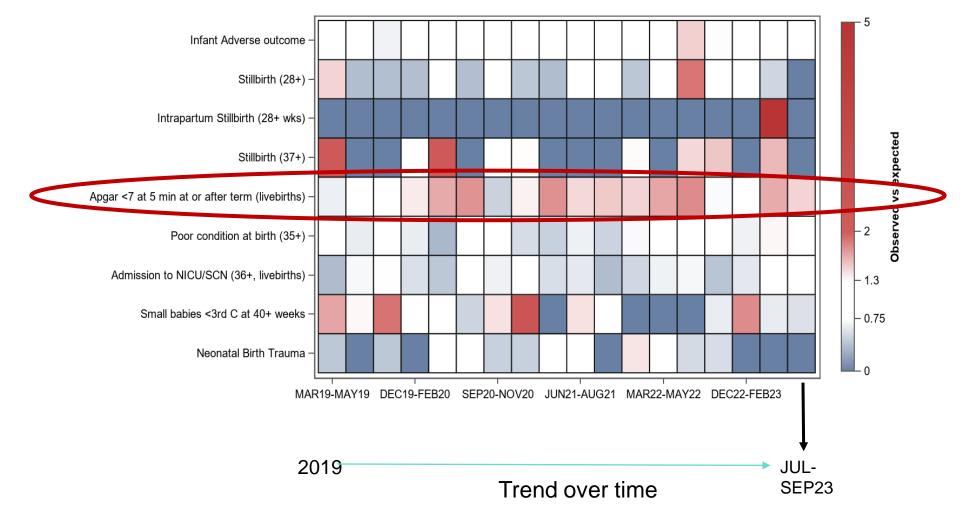
## **Deeper Understanding**







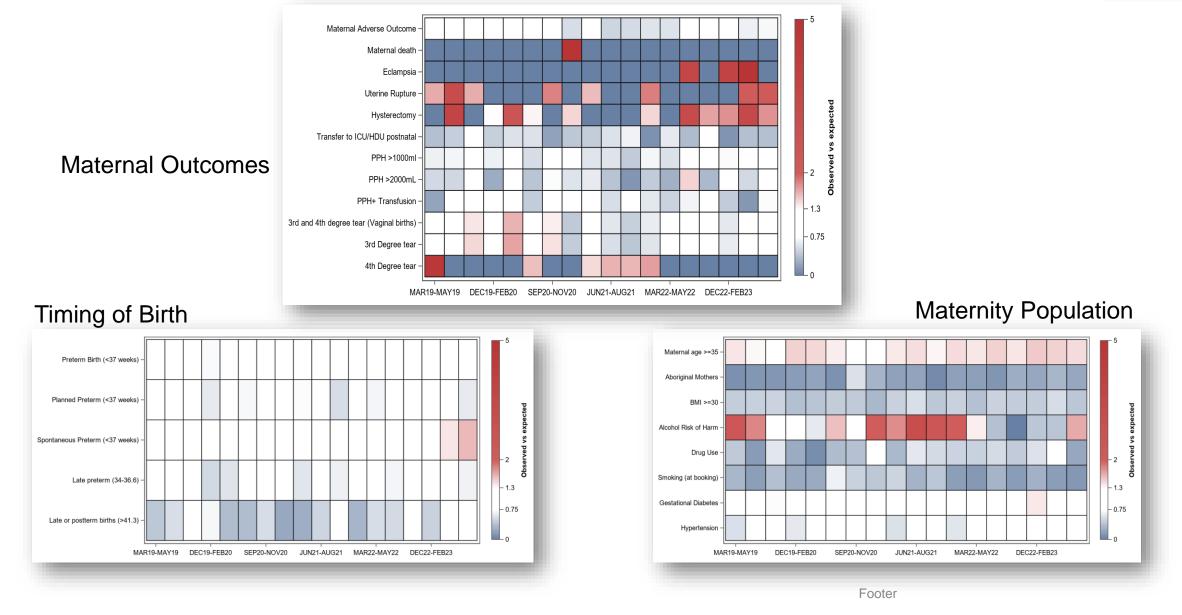
### Newborn Outcomes



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



30



## Where to target improvement resources?

28-31

32-36

37-38

39-40

28-31

32-36

37-38

39-40

41+

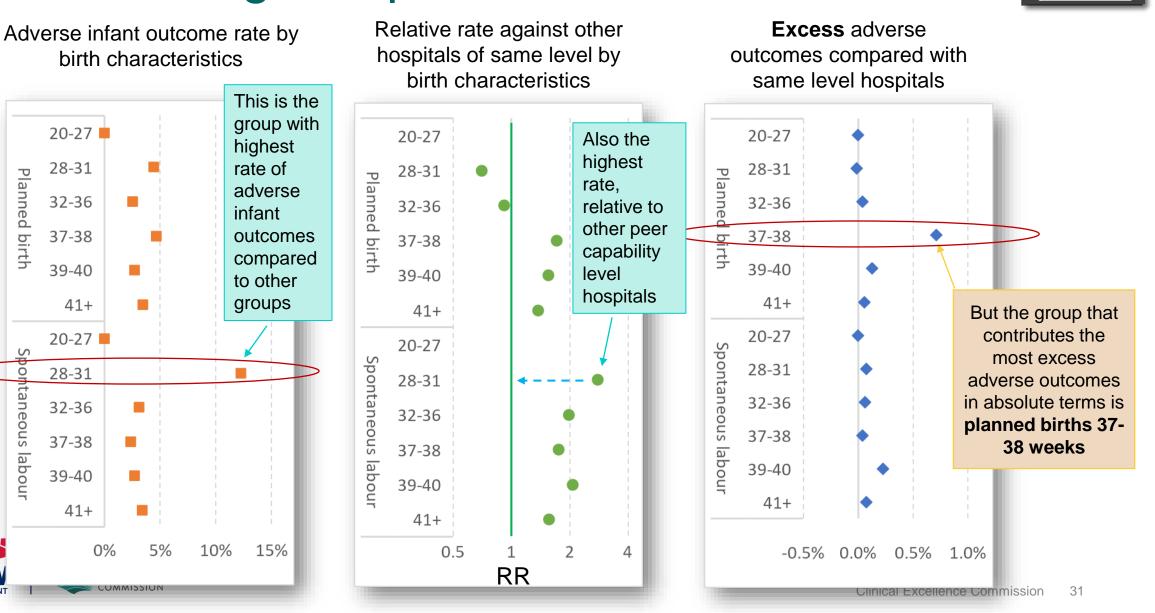
41 +

Planned birth

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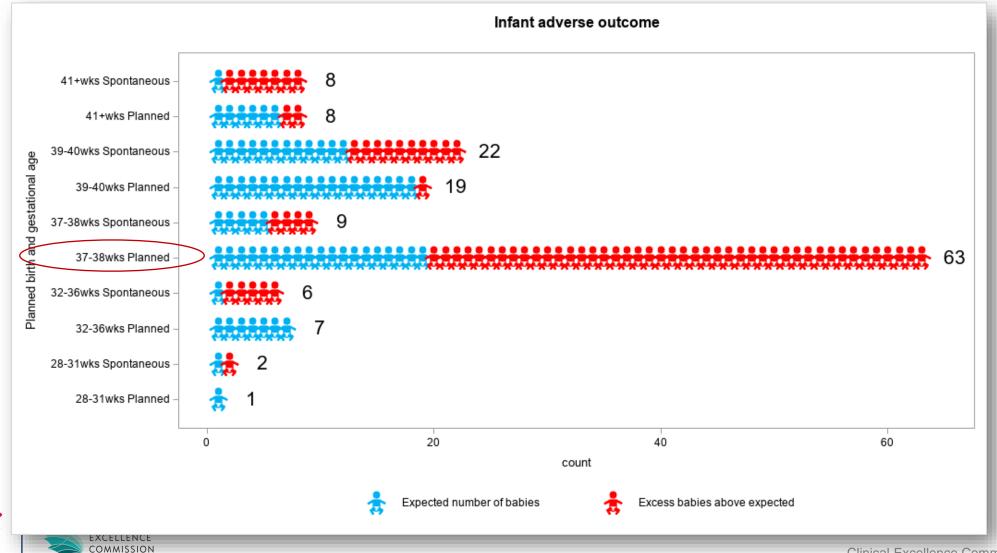
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itaneous labour



## 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?

Police examine 600

NHS baby deaths re

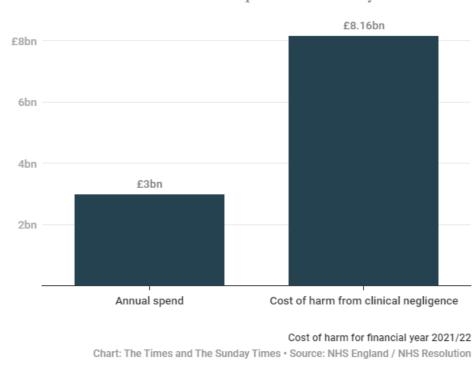
Mar

## **EXCLUSIVE:** Maternity hospital scandals could cost the NHS £1bn a

#### HEALTH COMMISSION

### Cost of harm

Clinical negligence in maternity services costs **more than double** the annual NHS spend on maternity care



#### y deaths

n 200 babies died officials warn it

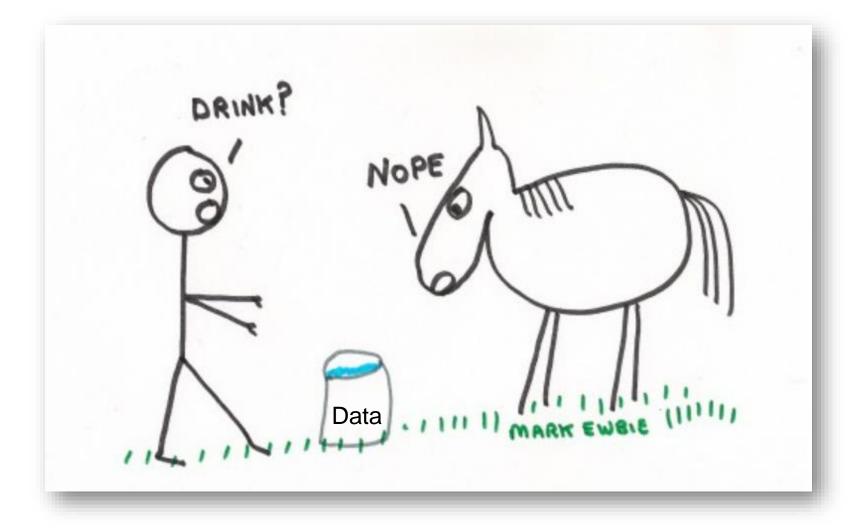




OCKENDEN REPORT



### Where we were..

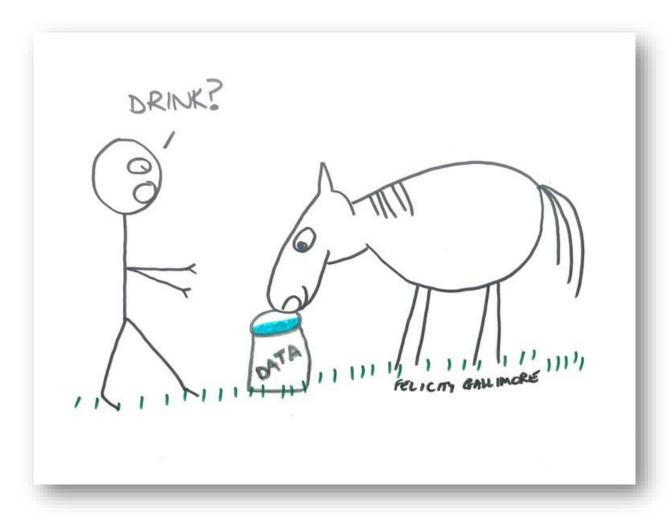




CLINICAL EXCELLENCE COMMISSION

### **QIDS** MatIQ

#### 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 MatlQ biostatisticians Ms Julianne Jones – Midwifery Lead/Project Manager Ms Amanda Rehayem – Midwifery Lead Preterm Birth Prevention eHealth NSW team

