Born in Queensland

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Born in Queensland

Primary Investigators

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Fetal development

• Long term health problems are associated with the prenatal environment

• Poor fetal development impacts offspring physical and neurological development

• A range of medical conditions and treatments during the perinatal period affect longer term health, social and education outcomes for the offspring and the mother

• We propose to investigate these important relationships utilising the strengths of combined QLD and Commonwealth administrative data collections.
Aims

• To identify how exposures and clinical decisions made during pregnancy and shortly after birth affect the health and development of the offspring and the mother

• Inferential
  • Risk factors
  • Interventions
  • Subgroups

  Negative impact on offspring development
  Preventing Program
  Practise improvements
  Clinical research

• Predictive
  • To construct models to use data to predict health and developmental outcomes.
  • Identify individuals at high risk and in need of more intensive clinical monitoring.
Data Collections

Administrative data from Queensland
• Perinatal Data Collection (PDC)
• QLD Hospital Admitted Data Collection (QHAPDC) 2009-2015
• Consumer Integrated Mental Health Application (CIMHA)
• Expand 2008-2017
• AUSLAB Pathology Data (public patients)
• Emergency Department Data Collection
• Commonwealth data:
  • Medicare benefits Schedule (MBS)
  • Pharmaceutical Benefits Scheme (PBS)
  • Australian Early Development Census (AEDC)
Population

- **Sample selection**: All live births in Queensland between 2009 – 2015 (including siblings) Expanding to an additional 3 years (2008-2017), and including all data since birth until study close.

- The sample also includes all **offspring mothers** from time of ‘conception’ to study close (9 months prior to birth to December 2017).

Current research

• Investigating trajectories of infant morbidity (hospitalisations) in the first 12 months after birth and pregnancy predictors.

• Investigating clustering of preterm birth by additional neonatal morbidities.

• Predicting neonatal diagnoses prior to discharge.

• Predicting common postpartum maternal diagnoses in the first 6 weeks following delivery.
Study of prenatal depression

• Data linkage for PhD topic

• Administrative data to study screening for depressive symptoms during pregnancy

• Subset PDC linked with other databases
Depression during pregnancy

- Postnatal depression
- Future depressive disorders
- Long-term consequences on women’s life
- Long-term consequences in offspring life: PTB LBW
10-20% Pregnant Women Will Experience Depression Worldwide

- 300,000 women give birth every year in Australia and between 30,000 of these women will experience depression
- Estimates vary between methodology used for assessment and between countries
- Greater in low and middle income countries
- Greater for those with lower SES

worldwide: Bennett, Einarson et al. 2004; Gavin, Gaynes et al. 2005
Background - Prevalence

Under-recognised and Under-treated

- Antenatal care targets physical health
- Overlapping symptoms of pregnancy (sleep, appetitive changes, fatigue)
- Attribute emotional complaints to hormonal and physical changes associated with pregnancy
- Help seeking rates among pregnant women are low
Background - Screening

Universal Screening

↑ detection

↓ prevalence

↑ Follow up (more than in postnatal period)

↑ remission

↑ response to treatment

Screening

Self-report questionnaires validated for obstetric population:

Universal Screening

Beck Depression Inventory

The Patient Health Questionnaire 9 (PHQ-9)
Background - Screening

Edinburgh Postnatal Depression Scale (EPDS)

Most Used
- Can be administered by midwives
- Validated in pregnancy
- Different cultures and languages
- Reliable
- Sensitive to depressive symptoms
- Does not measure somatic symptoms
- Does not confirm diagnosis
Background- Screening

Since 2011 Australian Clinical Practice Guidelines for antenatal care recommends “the use of the EPDS as a component of the assessment of all women for symptoms of depression in the antenatal period”

PDC: Information on EPDS screening since 2015
Objective 1

Study the current extent of the use of the EPDS for screening depression during pregnancy and the characteristics of the women who are not being screened.

EPDS Screening
N=30,468

- YES (21,735) 71%
- NO (7,543) 25%
- NOT STATED (1,190) 4%
Objective 1

Study the current extent of the use of the EPDS for screening depression during pregnancy and the characteristics of the women who are not being screened.

- Private patients are less likely to be screened (AOR, 0.05; 95% CI, 0.05–0.06; p<0.001).

AOR: adjusted for age of the mother, Indigenous status, marital status, birth country, parity, current medical conditions, screening for domestic violence, remoteness, assisted conception and SES * p<0.001
Objective 1

Study the current extent of the use of the EPDS for screening depression during pregnancy and the characteristics of the women who are not being screened

- After adjustment, significant predictors of under-screening included:
  - Born overseas (OR, 0.75; 95% CI, 0.68–0.82),
  - Indigenous status (OR, 0.47; 95% CI, 0.39–0.56),
  - Single or separated (OR, 0.83; 95% CI, 0.73–0.94)
  - Living in major cities
  - From higher SES

- Most significant finding:
  - Marked difference in screening between private and public patients (4 years post release of 2011 Clinical Practice Guidelines)

Objective 2

Analyse the difference in delivery and neonatal outcomes of women who are screened compared to those not screened

• Association between screening and preterm birth and low birthweight using PDC and QHADC

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<th>PRETERM BIRTH</th>
<th>LOW BIRTH WEIGHT</th>
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<tr>
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<td>Odds Ratio</td>
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<tr>
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*N= 27,501 adjusted OR (95% CI)*

**Adjusted for: mother age, private/public status, Indigenous status, marital status, birth country, smoking during pregnancy, parity, current medical condition (excluding mood and anxiety disorders as the only dg), BMI, remoteness, assisted conception, SEIFA (excluding twins and triplets)

**Adjusted for: preterm, mother age, private/public status, Indigenous status, marital status, birth country, smoking during pregnancy, parity, current medical condition (excluding mood and anxiety disorders as the only dg), BMI, remoteness, assisted conception, SEIFA (excluding twins and triplets)
Objective 2

Analyze the difference in post-natal mental health admissions outcomes of women who are screened compared to those not screened

• Association between screening and post-natal mental health admissions using PDC and QHAPDC

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<th>ADEMISSIONS</th>
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<tr>
<td></td>
<td>Odds Ratio [95% Conf. Interval] P&gt;</td>
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<tr>
<td>N= 27,582</td>
<td>adjusted OR (95% CI)*</td>
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<tr>
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<tr>
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<tr>
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<td>2.08 1.39 3.39 &lt;0.001</td>
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*Adjusted for: mother age, private/public status, Indigenous status, marital status, birth country, BMI, parity, current medical condition (excluding mood and anxiety disorders as the only dg), remoteness, assisted conception, SEIFA
Future directions

Explore the impact of antenatal depression on birth and neonatal outcomes in the offspring

Look impact of mood disorders on neonatal and maternal outcomes
  • PBS treatment and non-treated depression
  • EPDS data 2016-2017
  • EPDS 2018
Acknowledgments

• Statistical Services Branch (SSB) Queensland Health for linking and providing the data
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