

Born in Queensland

Macarena San Martin Porter, BPhty, MPH

PhD Student

Institute for Social Science Research, The University of Queensland




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Primary Investigators

- Professor Rosa Alati
- Dr. Kim Betts
- Professor Steve Kisely

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)
 - Consumer Integrated Mental Health Application (CIMHA)
- } 2009-2015
- 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).
- The sample consists of 429,058 offspring and 306,799 mothers (2009-2015)

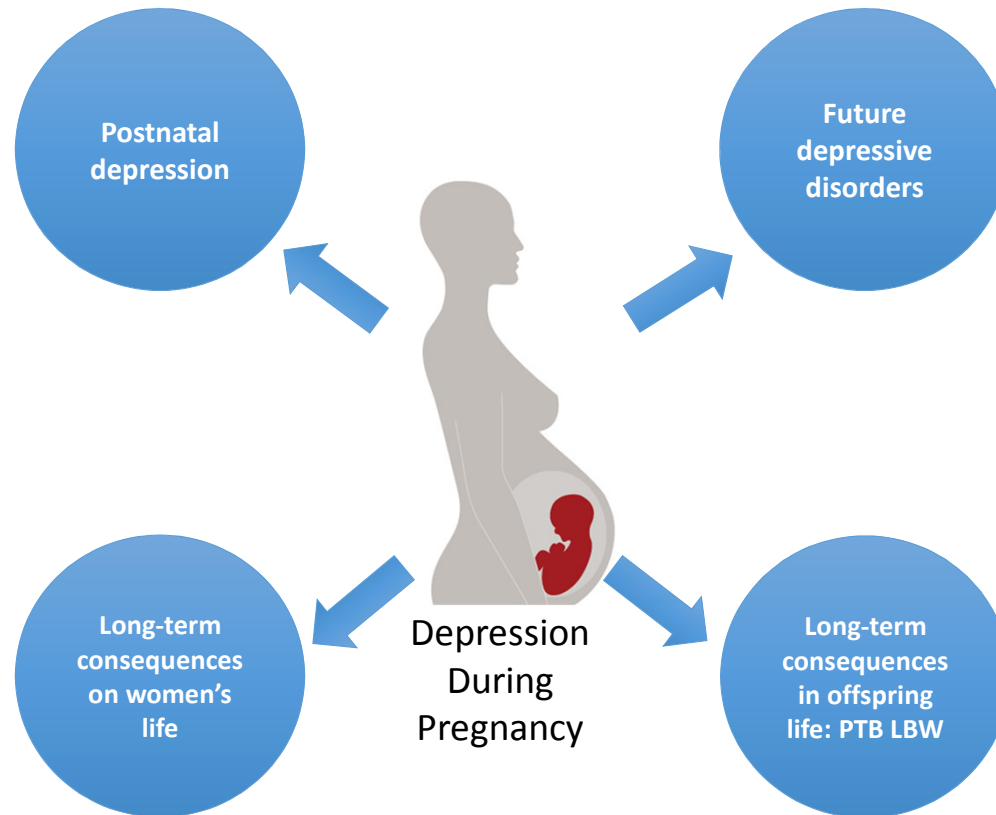
Current research

- Investigating trajectories of infant morbidity (hospitalisations) in the first 12 months after birth and pregnancy predictors.
 - Betts KS, Soares Magalhaes RJ, Alati R. **The role of neonatal pulmonary morbidity in the longitudinal patterns of hospitalisation for respiratory infection during the first year of life.** Epidemiol Infect. 2018:1–8.
- 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



Background - Prevalence

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

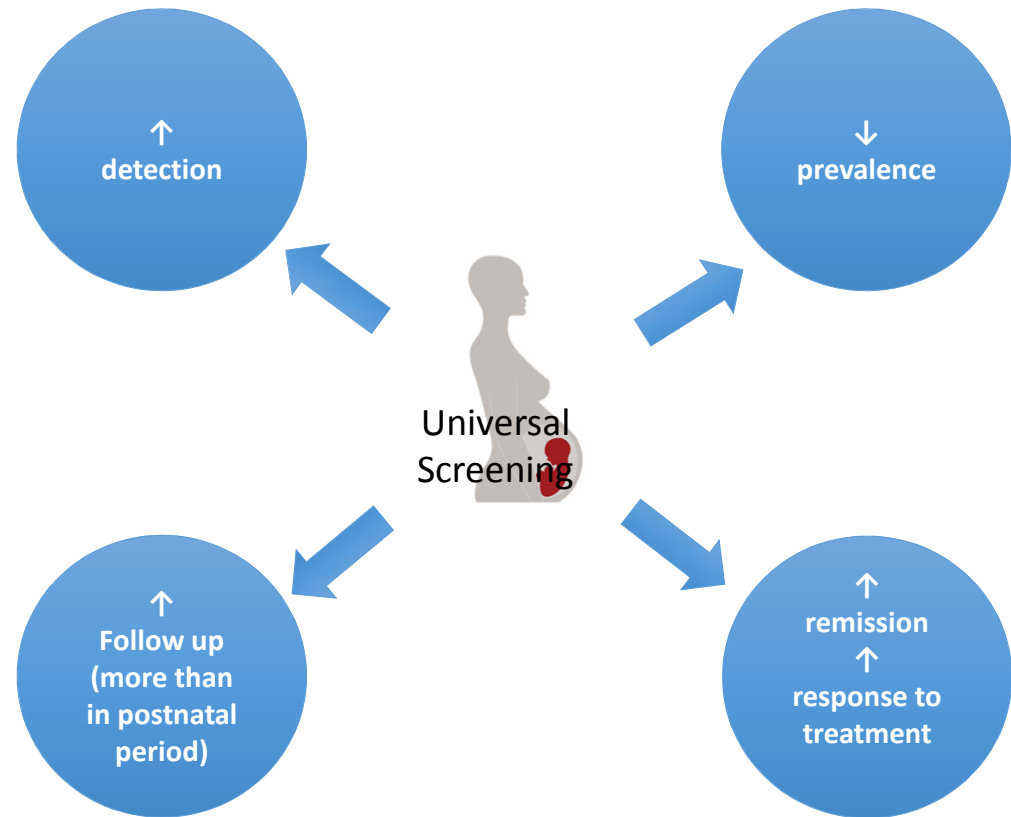
Background - Prevalence

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

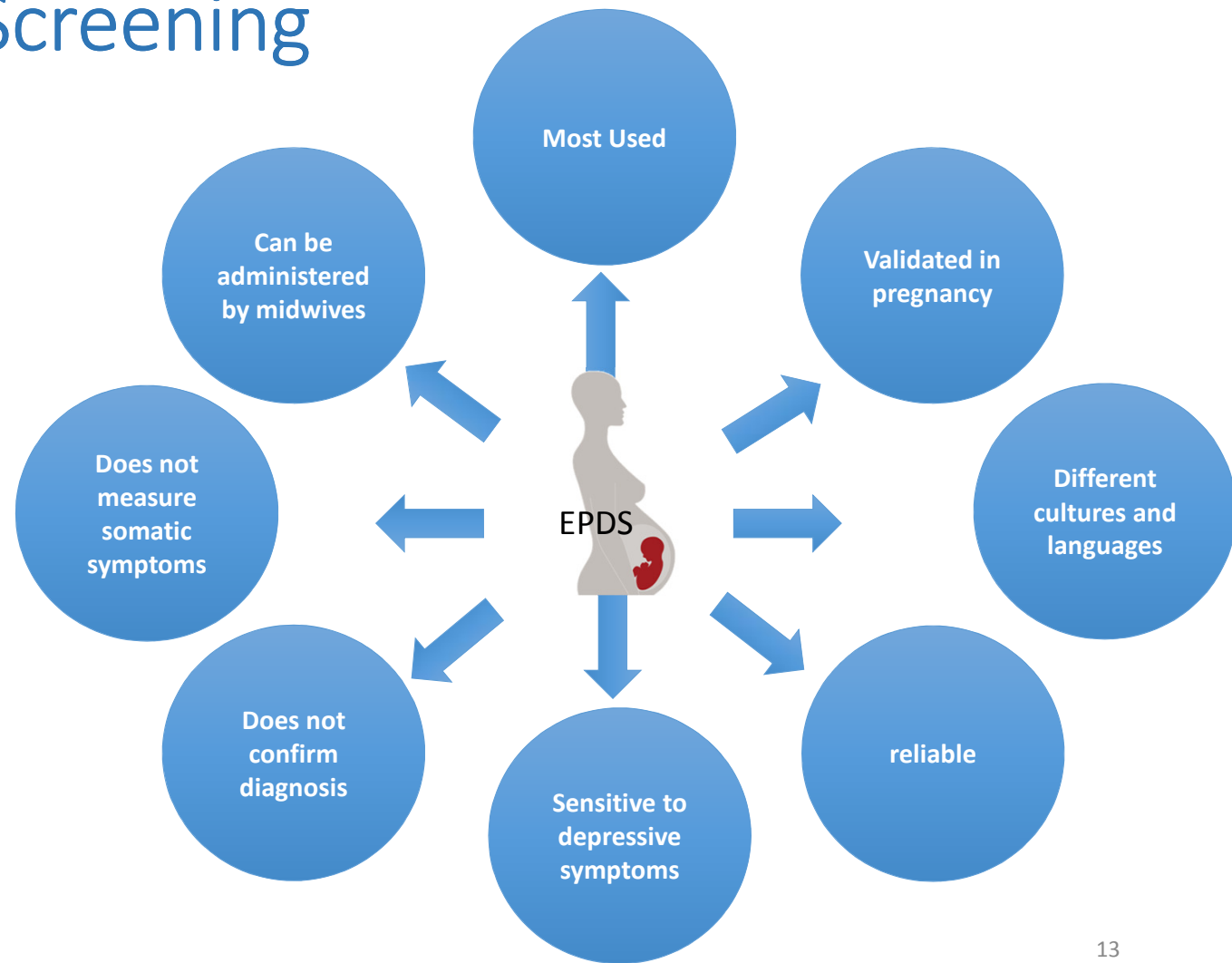
Background - Screening

Universal Screening



Background - Screening

Edinburgh Postnatal Depression Scale (EPDS)



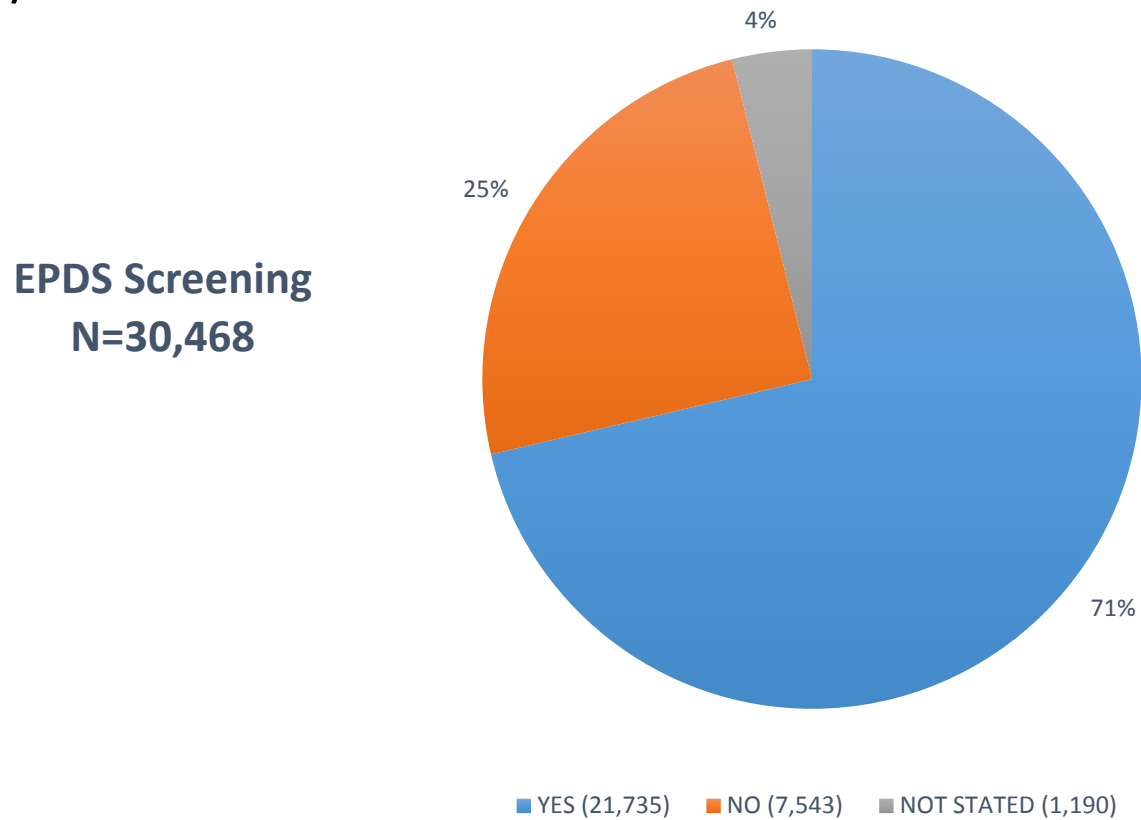
Background- Screening

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

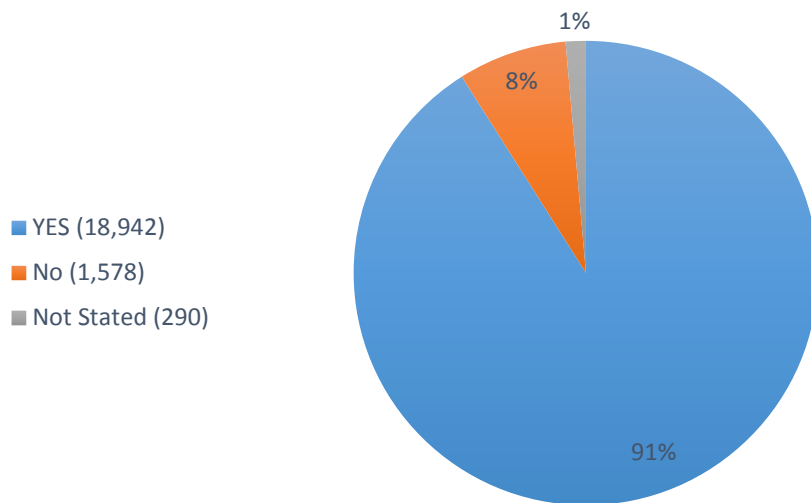
Study the current extent of the use of the EPDS for screening depression during pregnancy and the characteristics of the women who are not being screened



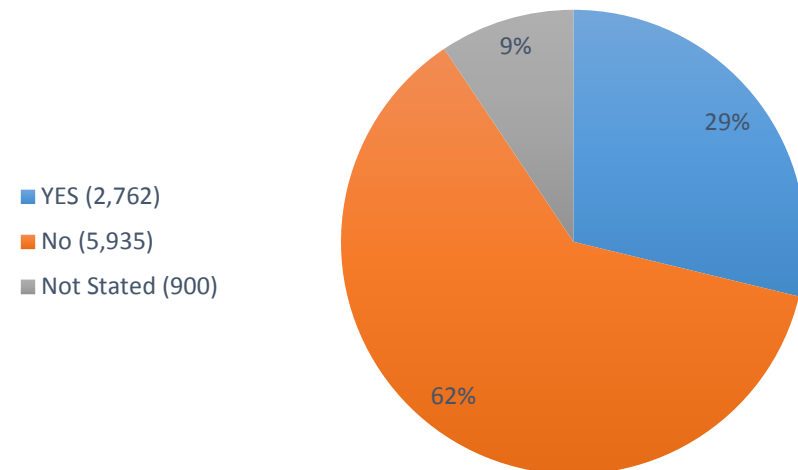
Objective 1

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 Public Patients
N= 20,810



EPDS Private Patients
N= 9,597



• 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)
- San Martin Porter M, Betts K, Kisely S, Pecoraro G, Alati R. Screening for perinatal depression and predictors of under-screening in Australia: The Born in Queensland Study. *Medical Journal of Australia* (Accepted 23rd of August 2018)

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

N= 27,501	PRETERM BIRTH				LOW BIRTH WEIGHT			
	adjusted OR (95% CI)*				adjusted OR (95% CI)**			
	Odds Ratio	[95% Conf. Interval]	P>z		Odds Ratio	[95% Conf. Interval]	P>z	
Screened								
Yes	1				1			
No	1.87	1.63	2.15	<0.001	1.37	1.13	1.65	0.001

*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

Analyse 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

	ADMISSIONS			
N= 27,582	adjusted OR (95% CI)*			
	Odds Ratio	[95% Conf.	Interval]	P>z
Screened				
Yes	1			
No	2.08	1.39	3.39	<0.001

*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

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m.sanmartinporter@uq.edu.au