



# Preeclampsia amongst Australian Aboriginal women

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*No Disclosures*

**WCE**

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# Acknowledgement of Country

I acknowledge today we meet on  
the traditional lands of the San  
and Khoekhoe Indigenous  
Peoples of South Africa.

I respect their right to self-  
determination as defined by the  
UN Declaration on the Rights of  
Indigenous Peoples.



# Background



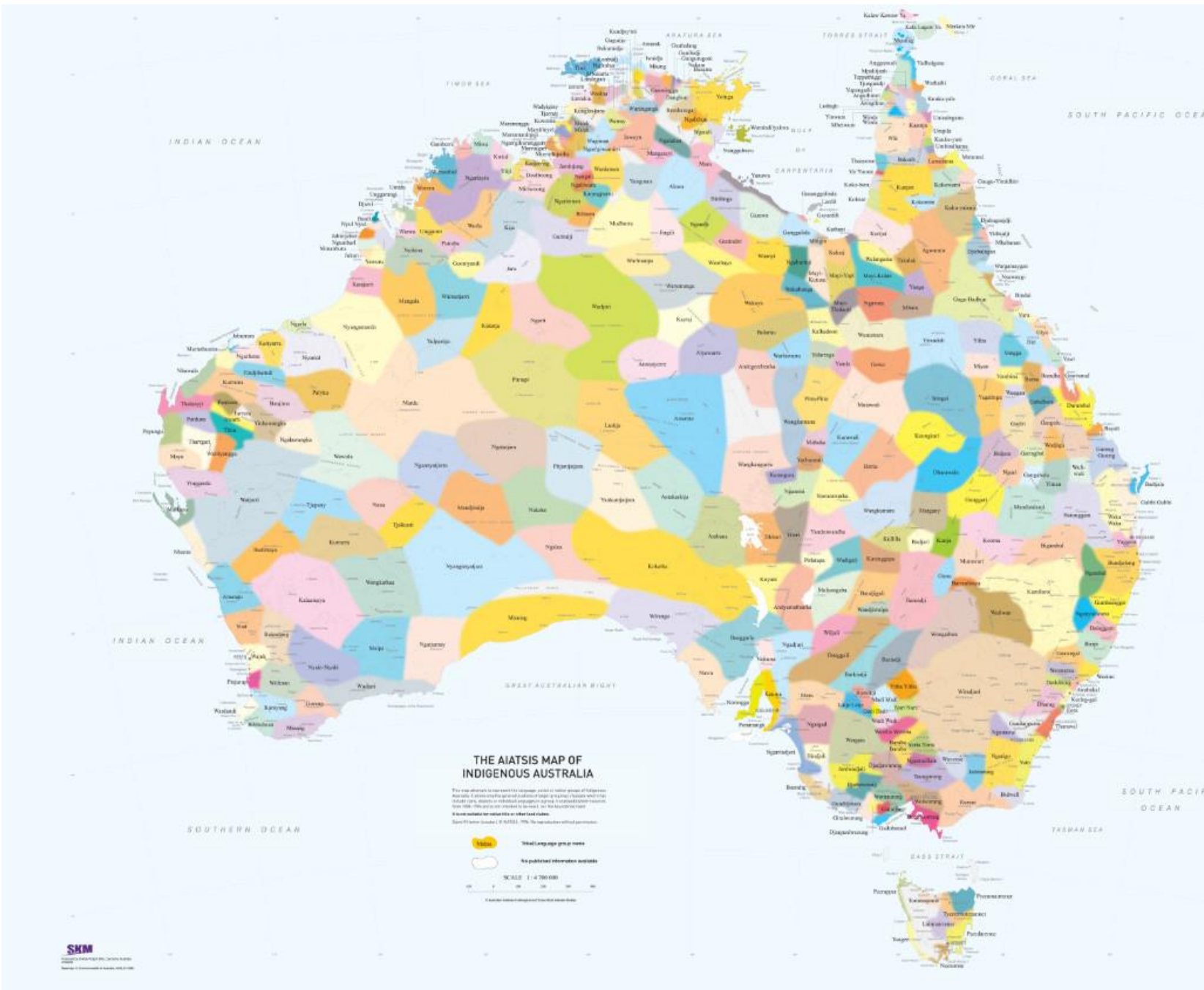
- 3.3% of Australian pregnancies affected by PE/HDP
- Clinical diagnosis
  - High blood pressure and proteinuria (protein in the urine)
  - Usually detected after 20 weeks' gestation
- Associated with severe pregnancy complications
- Associated with increased risk of developing chronic diseases
- Indigenous & First Nations women documented to have higher rates

# Aim



- To estimate the incidence of preeclampsia (PE) & Hypertensive Disorders in Pregnancy (HDP) in a cohort of Australian Aboriginal women.



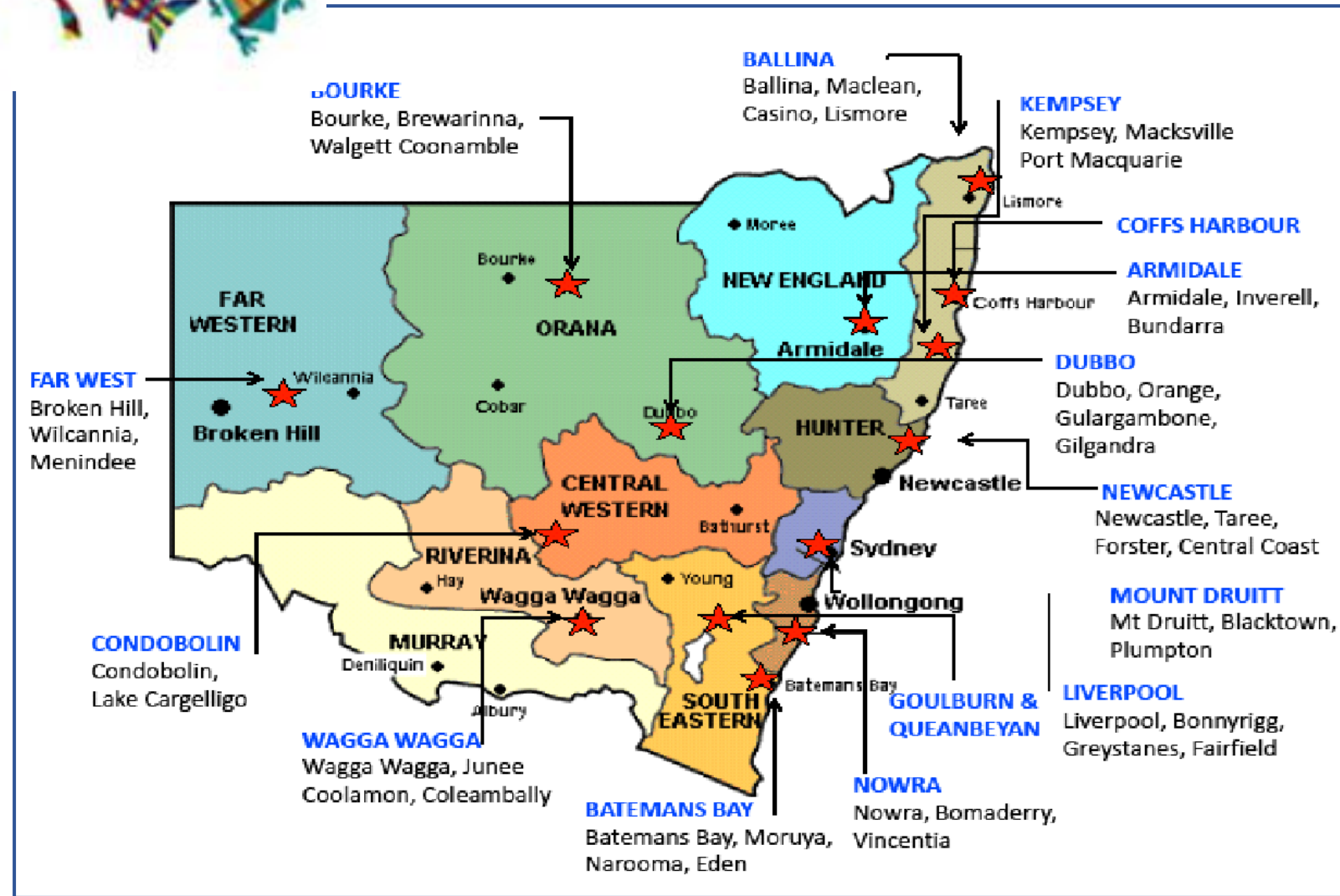


Many different Aboriginal & Torres Strait Islander groups.

Each has their own culture, customs, language and laws.

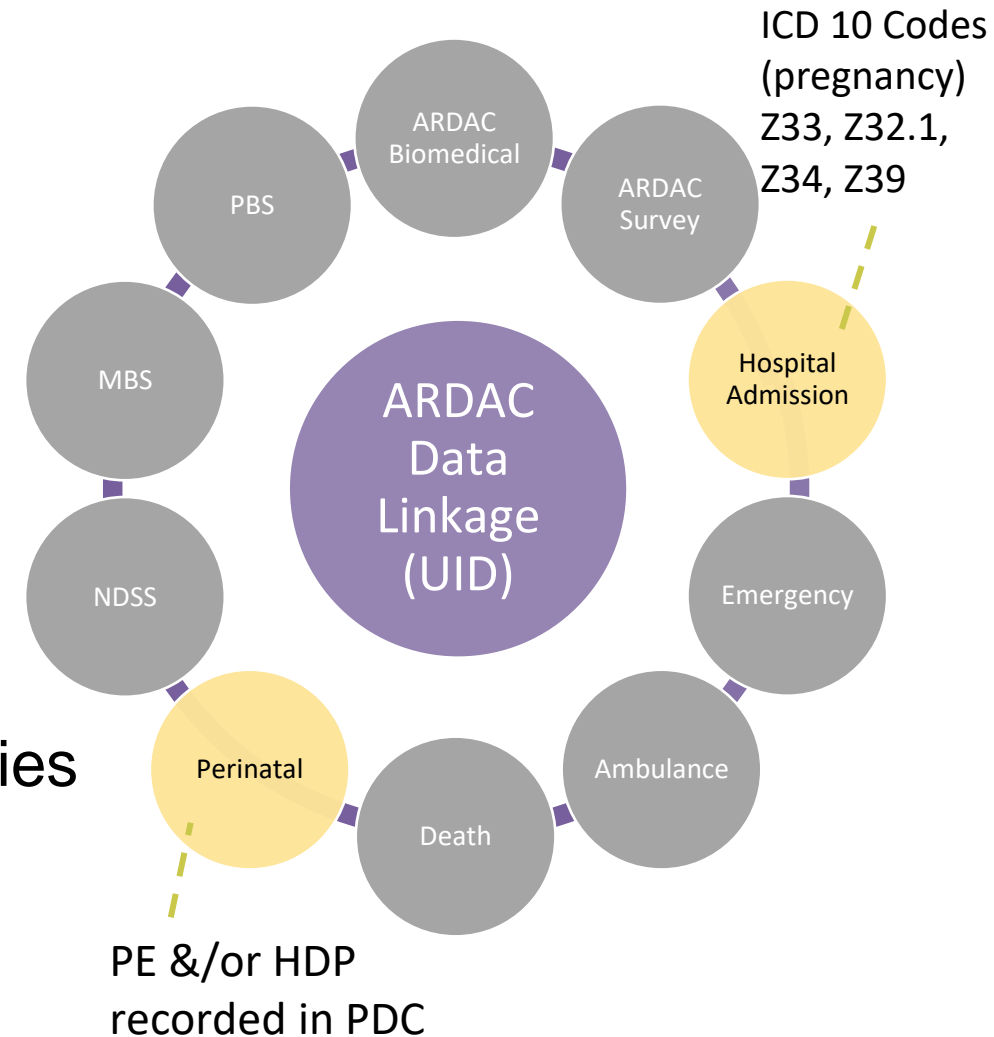
They are the world's oldest surviving culture.





# Methods

- ARDAC cohort
- Hospital admissions & Perinatal Data
  - NSW and ACT only
  - 2007 to 2020
  - 781 women (42.3%) : 1,532 livebirth pregnancies
- Potential predisposing factors:
  - Early indicators collected during Cohort Study
  - Health conditions derived from data linkage
- Multilevel multiple regression (GLM)



# National and State Administration Data Linked

	Temporal coverage																											Total records (final)							
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		2017	2018	2019	2020	2021		
ARDAC Cohort																																			3,743
Birth Registration			NSW				ACT																											2,275 *	
Death Registration (NDI, NSW)																																		29	
Perinatal (baby)					NSW			ACT																										2,145	
Perinatal (mother)					NSW			ACT																										1,370 *	
NAPLAN																																		2,731 *	
Ambulance																																			2,677 *
Admissions																																			12,270 *
Emergency Department (ED)																																			35,858 *
MBS																																			727,168 *
PBS																																			185,693 *
ANZDATA																																			-
NDSS																																			201 up to 2023

\* More than one record per participant





# Results: Women who had $\geq 1$ pregnancy

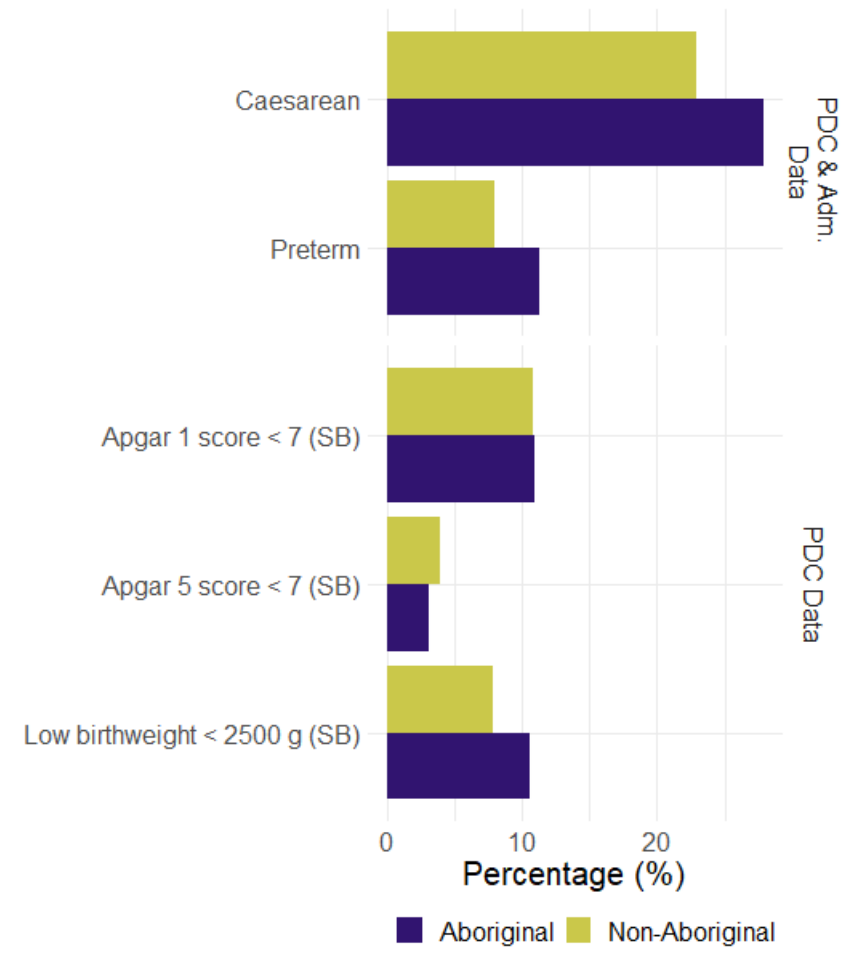
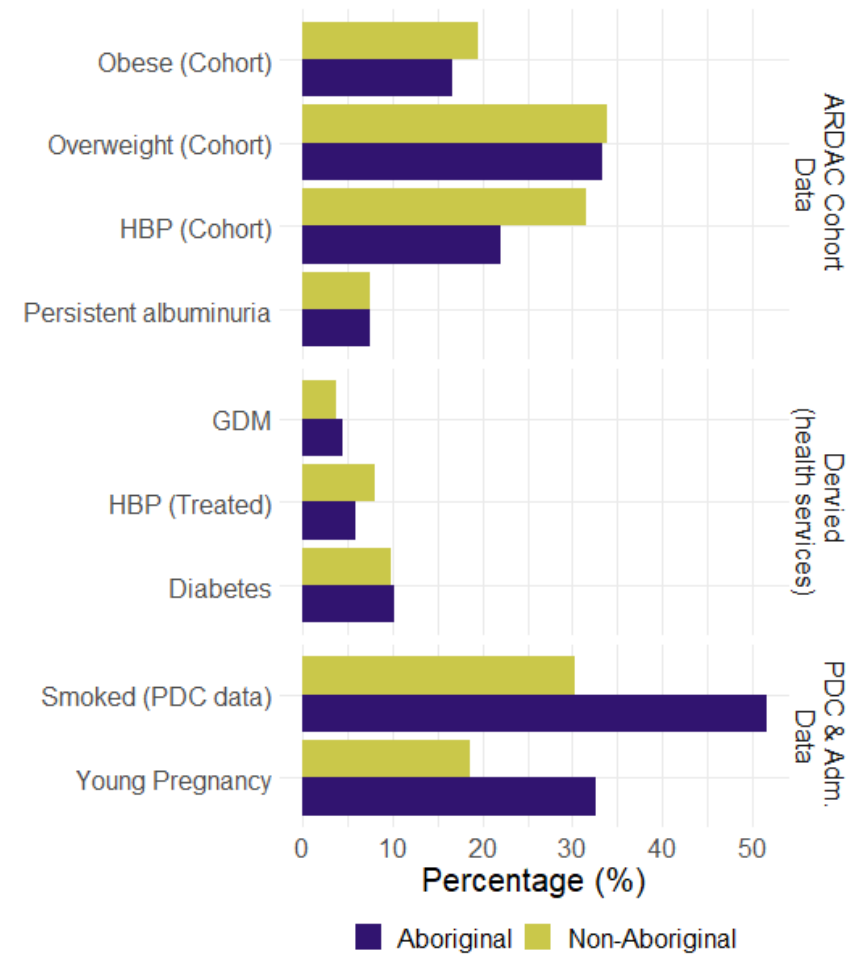
	Aboriginal (n = 524)		Non-Aboriginal (n = 257)	
	N	%	N	%
Major Cities Living (baseline)	75	14.3	48	18.7
Inner Regional Living (baseline)	275	52.5	170	66.1
Outer Regional, Remote & Very Remote (baseline) *	174	33.2	39	15.2
Young pregnancy (< 20 years) (first pregnancy) *	277	52.9	76	29.6
Number of livebirth pregnancies (3 or more) *	145	27.7	48	18.7
	Mean	95% CI	Mean	95% CI
SES (IRSAD) at baseline	917.9	913 – 923	927.8	921 – 935
Age at first pregnancy	20.2	20.0 – 20.5	21.7	21.3 – 22.0
Age at end of cohort (2021)	27.0	26.8 – 27.2	27.6	27.4-27.9

\* Significant

# Preeclampsia / HDP

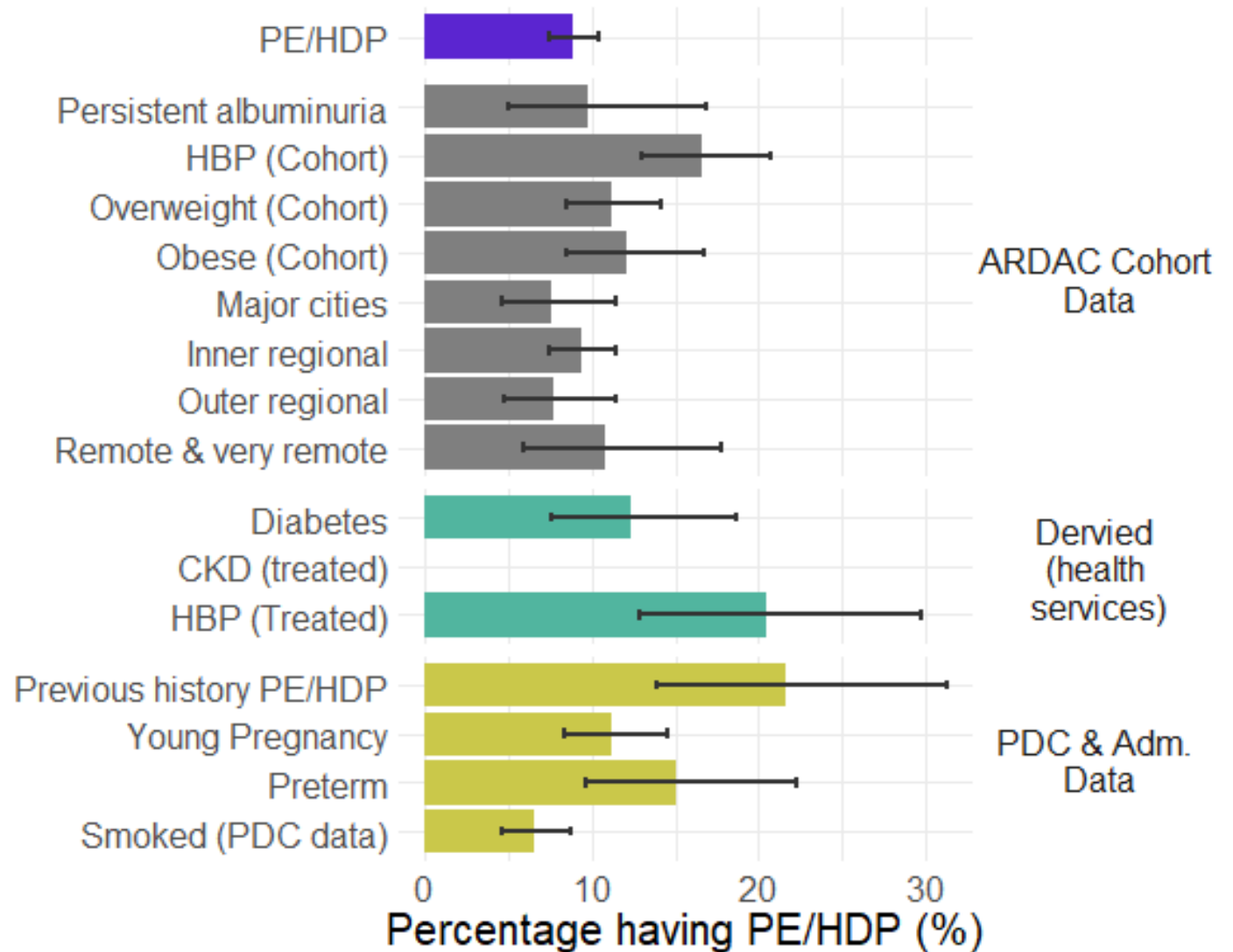
Characteristic	Aboriginal		Non-Aboriginal		Overall	
	N	%	N	%	N	%
All Pregnancies (n= 1,515)	86	8.2	46	10.0	132	8.7
First Pregnancy (n= 775)	64	12.4	33	12.8	97	12.5

# Pregnancy Outcomes



**ALL PREGNANCIES EXCL. MULTIPLE BIRTHS (n = 1,515)**

# Preeclampsia / HDP by pre-existing health condition and risk factors



# Preeclampsia / HDP – GLM Models

All Pregnancies (n= 1,515)	Model 1		Model 2		Model 3	
	RR (est)	95% CI RR	RR (est)	95% CI RR	RR (est)	95% CI RR
Persistent albuminuria – before PE/HDP	0.97	0.45 - 2.09	0.91	0.41 - 2.01	1.03	0.55 - 1.93
Aboriginal	0.86	0.55 - 1.35	0.86	0.55 - 1.36	0.89	0.61 - 1.31
Obesity (cohort) – before PE/HDP	1.06	0.62 - 1.78	1.02	0.60 - 1.73	1.05	0.68 - 1.60
High blood pressure (cohort) – before PE/HDP	2.45	1.58 - 3.81	2.33	1.50 - 3.63	2.20	1.52 - 3.16
Diabetes (linked health services) – before PE/HDP	1.29	0.69 - 2.41	1.22	0.64 - 2.33	1.29	0.76 - 2.70
Hypertension (linked health services) – before PE/HDP			2.06	1.08 - 3.91	2.02	1.20 - 3.39
Previous history of PE/HDP					2.44	1.49 - 4.01

# Conclusions



- ARDAC Aboriginal women were:
  - Younger than non-Aboriginal women at time of first pregnancy
  - More likely to live in regional/remote locations
- ARDAC Aboriginal and non-Aboriginal women
  - Similar rates of preeclampsia
  - Increased risk of preeclampsia if had pre-existing high blood pressure
  - No evidence of association between pre-existing chronic kidney disease or persistent albuminuria, and preeclampsia

# Thank you

## Chief Investigators

Prof Jonathan Craig

Prof Allison Jaure

A/Prof Michelle Dickson

Prof Armando Teixeira-Pinto

Prof David Lyle

Prof Germaine Wong

Prof Natasha Nassar

A/Prof Jacqueline Stephens

Dr Kylie Ann-Mallitt

## Associate Investigators

## Advisory Committee

## Study Participants

## Research Team

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Ms Victoria Sinka

[www.ardac.org.au](http://www.ardac.org.au)



Armajun Aboriginal



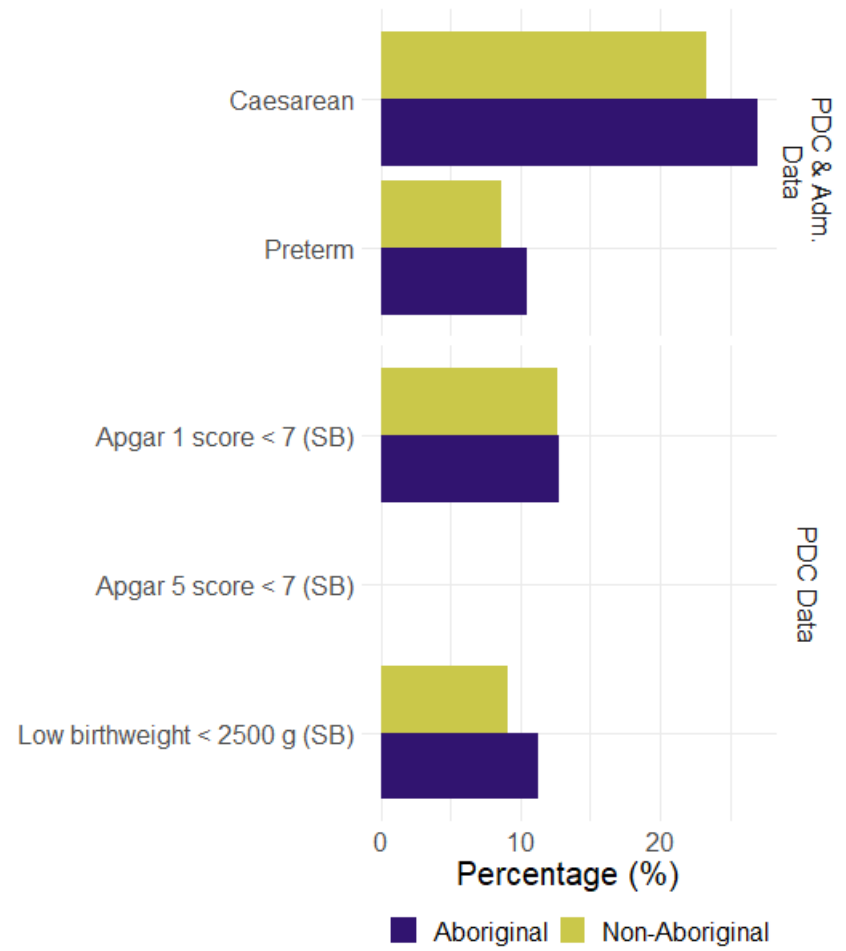
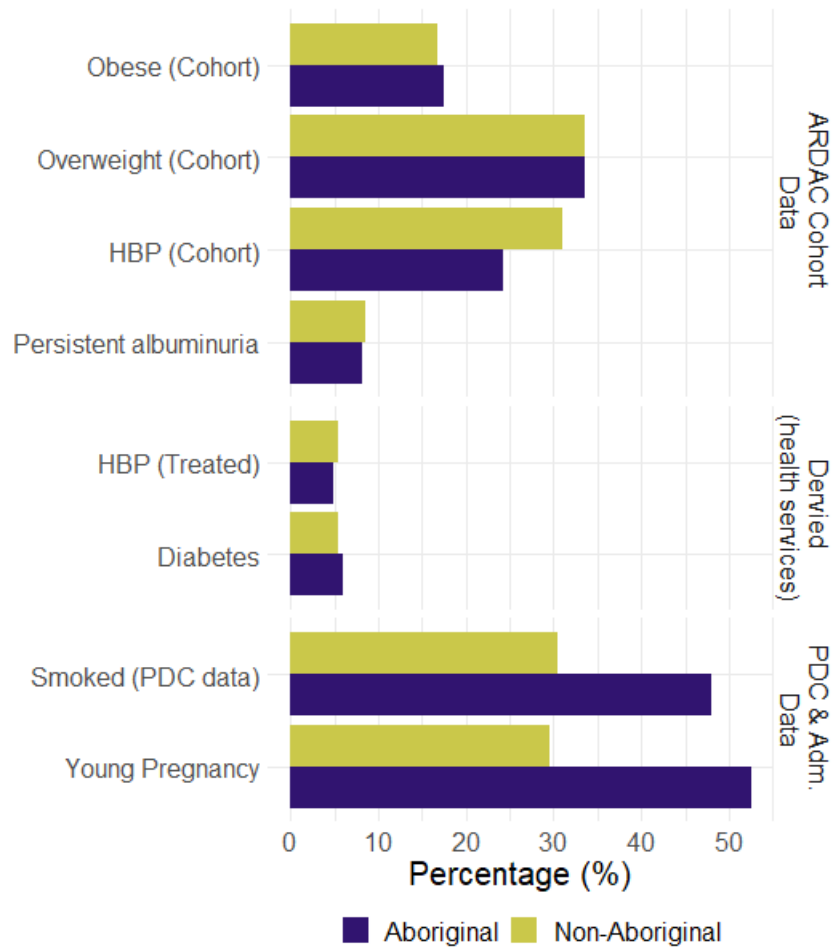
# Extra Slides



# Preeclampsia / HDP – GLM Models

All Pregnancies (n= 775)	Model 1		Model 2	
	RR (est)	95% CI RR	RR (est)	95% CI RR
Persistent albuminuria – before PE/HDP	1.00	0.50 - 2.0	0.94	0.47 - 1.90
Aboriginal	1.01	0.65 - 1.58	1.00	0.64 - 1.57
Obesity (cohort) – before PE/HDP	1.16	0.70 - 1.91	1.12	0.67 - 1.85
High blood pressure (cohort) – before PE/HDP	2.08	1.36 - 3.14	1.78	0.88 - 3.25
Diabetes (linked health services) – before PE/HDP	1.25	0.64 - 2.55	1.12	0.54 - 2.33
Hypertension (linked health services) – before PE/HDP			1.99	1.30 - 3.06

# Pregnancy Outcomes



**FIRST PREGNANCY EXCL. MULTIPLE BIRTHS (n = 775)**

# Preeclampsia / HDP by pre-existing health condition and risk factors

