



# GESTATIONAL ANTIDEPRESSANT DISPENSING TRENDS IN NEW ZEALAND

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# DISCLAIMER

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# DEPRESSION

- Disorder characterised by depressed mood, loss of interest and enjoyment, and decreased energy
- WHO-estimated prevalence:
  - 4.4% globally
  - 5.1% females vs. 3.6% males
- Exacerbated during major life events (e.g. pregnancy)
  - Pregnancy prevalence: 7-13%
  - 11.9% in longitudinal *Growing Up in New Zealand* study



# DEPRESSION IN PREGNANCY

- Antidepressants can contribute to treatment
- Concerns about risks to child associated with both gestational depression and antidepressant intake
  - Mixed findings
  - Antidepressants vs gestational depression
  - Gestational depression vs postnatal/later depression

Depression	Antidepressants
Pre-term birth	Pre-term birth
Low birth weight	Low birth weight
Difficult temperaments	Congenital abnormalities incl. heart defects
Later neurocognitive outcomes	Neonatal withdrawal symptoms
Later behaviour and mental health	Neurobehavioural effects
Postpartum depression in mother	Longer term outcomes unclear

# DEPRESSION IN PREGNANCY

- For some women, antidepressants may be particularly helpful
- Talk therapy is undoubtedly beneficial, but may be harder to access than medication
- Important to understand:
  1. Existing trends (over time and across sociodemographic groups) in antidepressant intake during pregnancy
  2. Unmedicated depression – how prevalent? Does this vary across sociodemographic groups?
  3. Are the risks associated with gestational antidepressant intake greater than risks associated with unmedicated depression?

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  3. Are the risks associated with gestational antidepressant intake greater than risks associated with unmedicated depression?
- Are we seeing changes over time? Is it getting more prevalent?
- Are we seeing differences across sociodemographic groups?
  - Might demonstrate issues with access

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  3. Are the risks associated with gestational antidepressant intake greater than risks associated with unmedicated depression?
- Are many women who are experiencing depression not receiving medication?
- Differences by sociodemographic groups may further indicate a vulnerable group with access difficulties

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  3. Are the risks associated with gestational antidepressant intake greater than risks associated with unmedicated depression?
- Are there risks associated with antidepressant intake/unmedicated depression relative to those not taking medication or experiencing depression? Does the risk differ between those on antidepressants compared to those with unmedicated depression?
  - Birth outcomes and longer term cognitive, behavioural and mental health outcomes

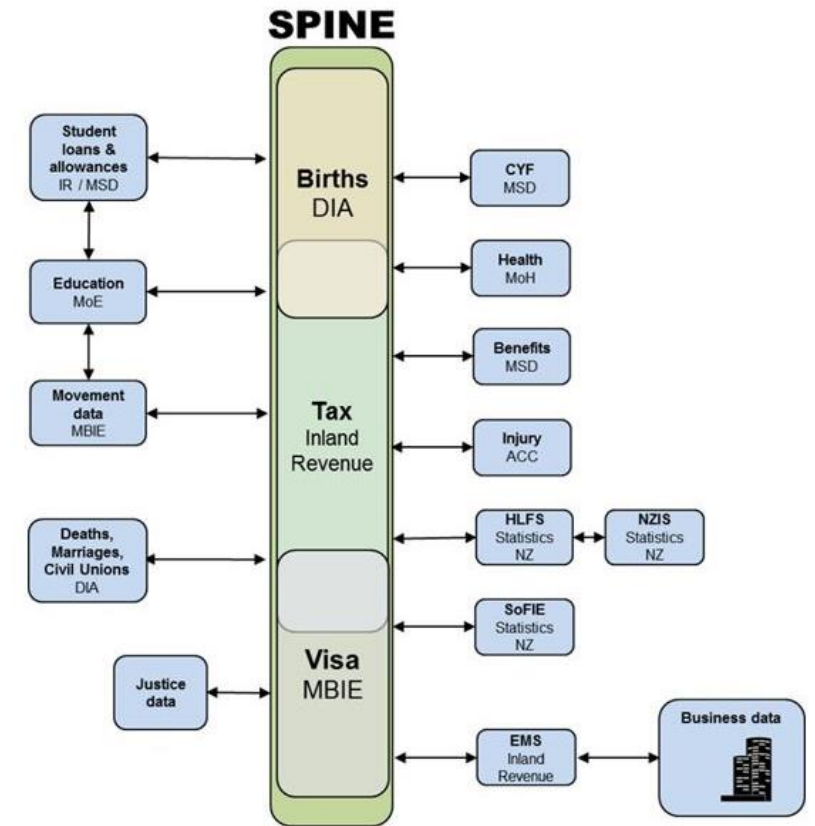
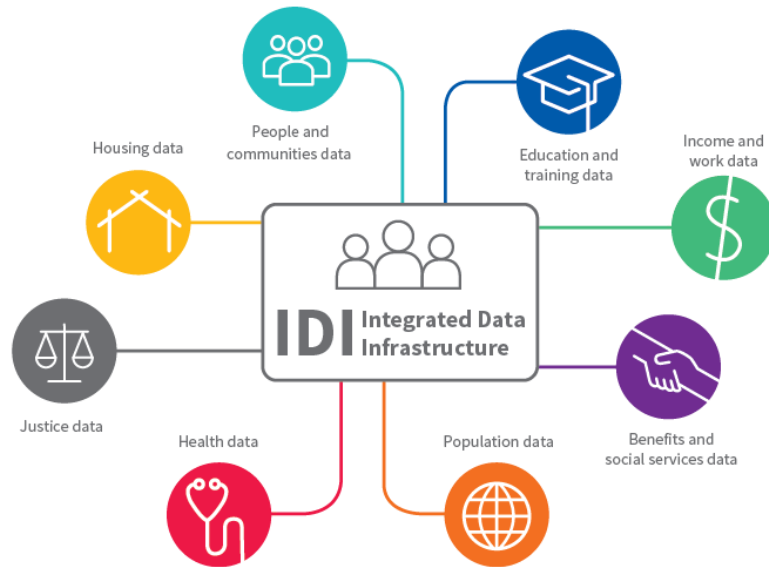


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# THE INTEGRATED DATA INFRASTRUCTURE

- **Data Source:** Statistics New Zealand Integrated Data Infrastructure (IDI)
  - Large database of de-identified administrative and survey data.
  - Linked at the individual level
  - Can connect information about a person across different sources



Source: Statistics New Zealand

# SAMPLE

- All resident New Zealand women who gave birth, taken for each fiscal year between 1<sup>st</sup> July 2007 and 30<sup>th</sup> June 2018.
  - Identified via Department of Internal Affairs birth records
  - Estimated approximate date of conception based on gestational age at birth

Fiscal year	N
2007/08	60,843
2008/09	60,390
2009/10	61,323
2010/11	60,105
2011/12	58,674
2012/13	57,642
2013/14	55,947
2014/15	55,848
2015/16	55,713
2016/17	56,142
2017/18	55,194

# ANTIDEPRESSANTS

Obtained from the Ministry of Health community pharmaceutical dispensing collection

Selective serotonin  
re-uptake inhibitors  
(SSRIs)

Monoamine oxidase  
inhibitors (MAOIs)

Serotonin &  
noradrenaline  
re-uptake inhibitors  
(SNRIs)

Tricyclic  
antidepressants (TCAs)

Tetracyclic  
antidepressants (TeCA)

Noradrenergic &  
specific serotonergic  
antidepressants  
(NaSSAs)

# DATA ANALYSIS

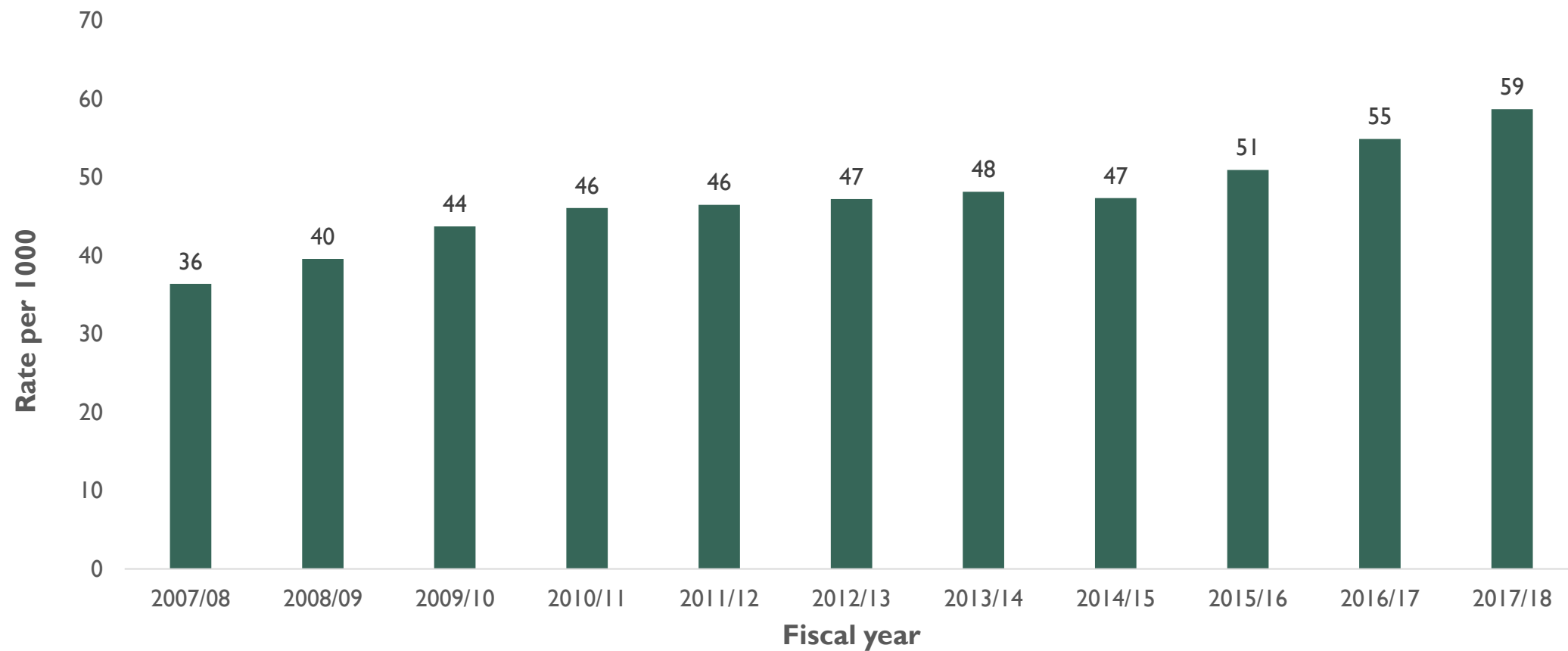
**Data analysis:** Dispensing for each fiscal year

$$\frac{\text{Number with one or more dispensing}}{\text{Total number in resident pregnant population}} \times 1000$$

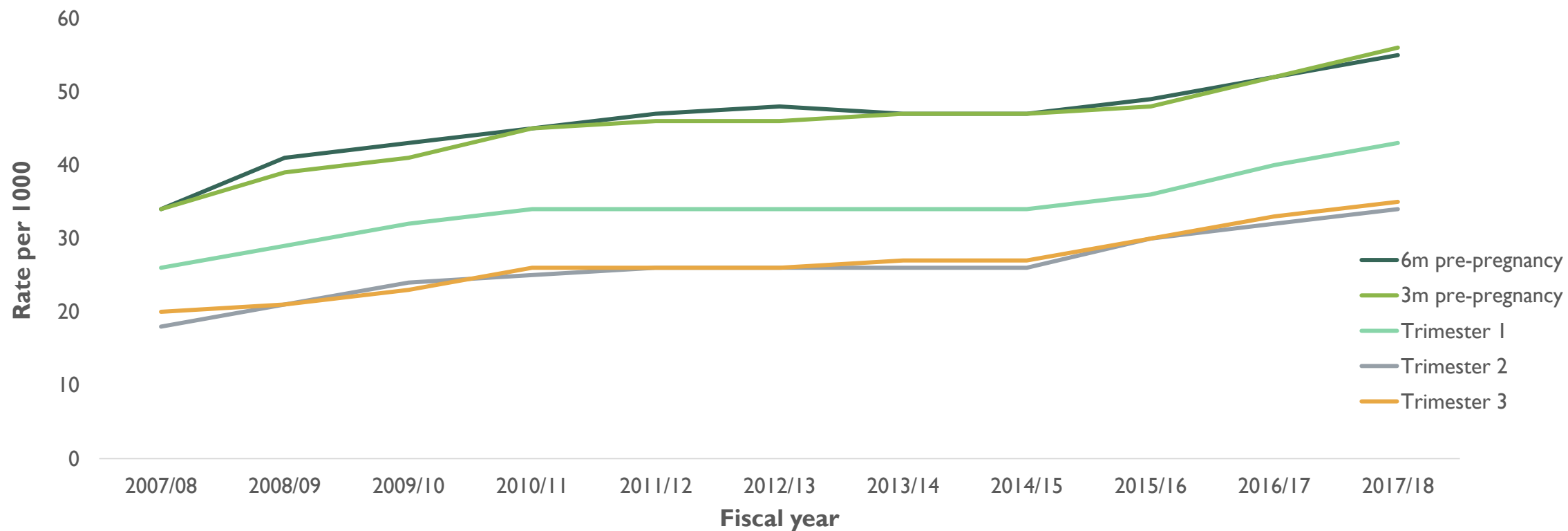
**Prevalence also calculated for:**

Each trimester, 3m and 6m pre-pregnancy, age groups, ethnicity (total response), 2013 NZDep quintiles and medication type.

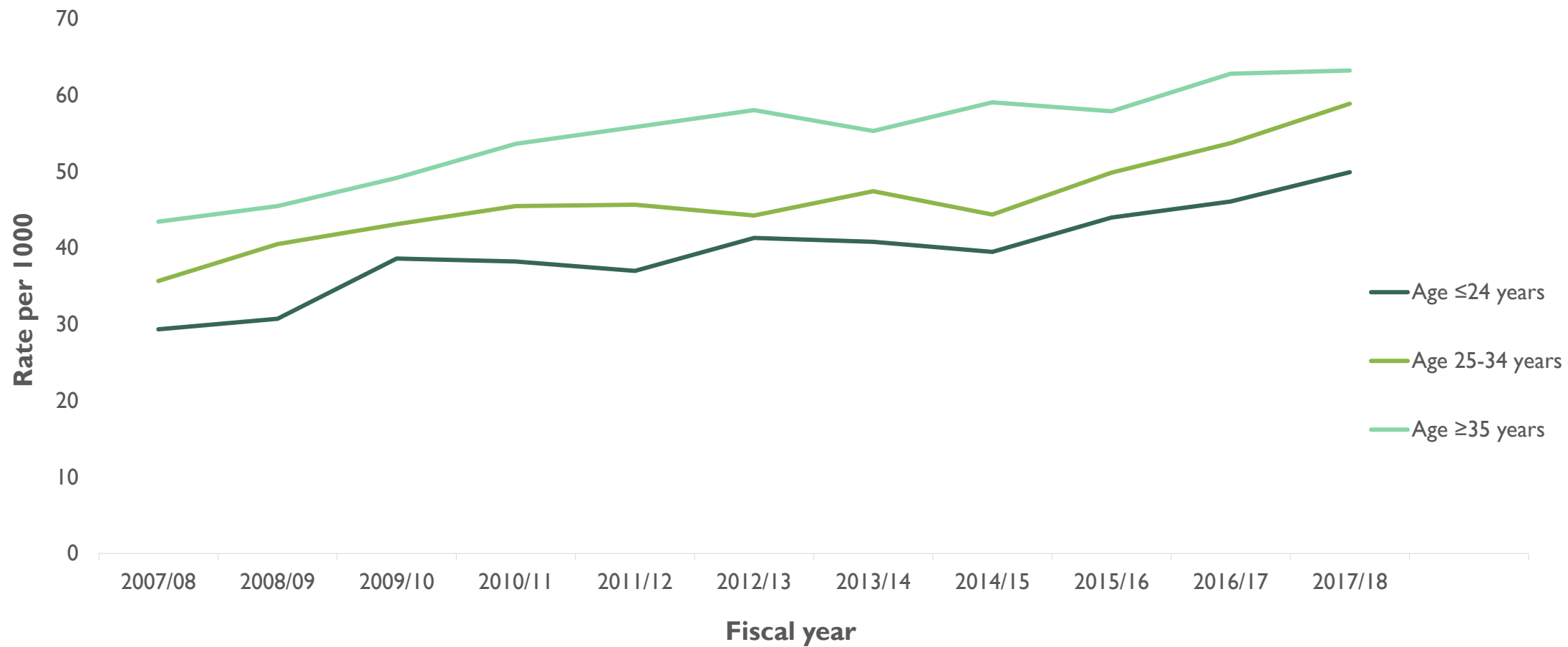
# DISPENSING PREVALENCE BY FISCAL YEAR



# DISPENSING PREVALENCE BY TRIMESTER

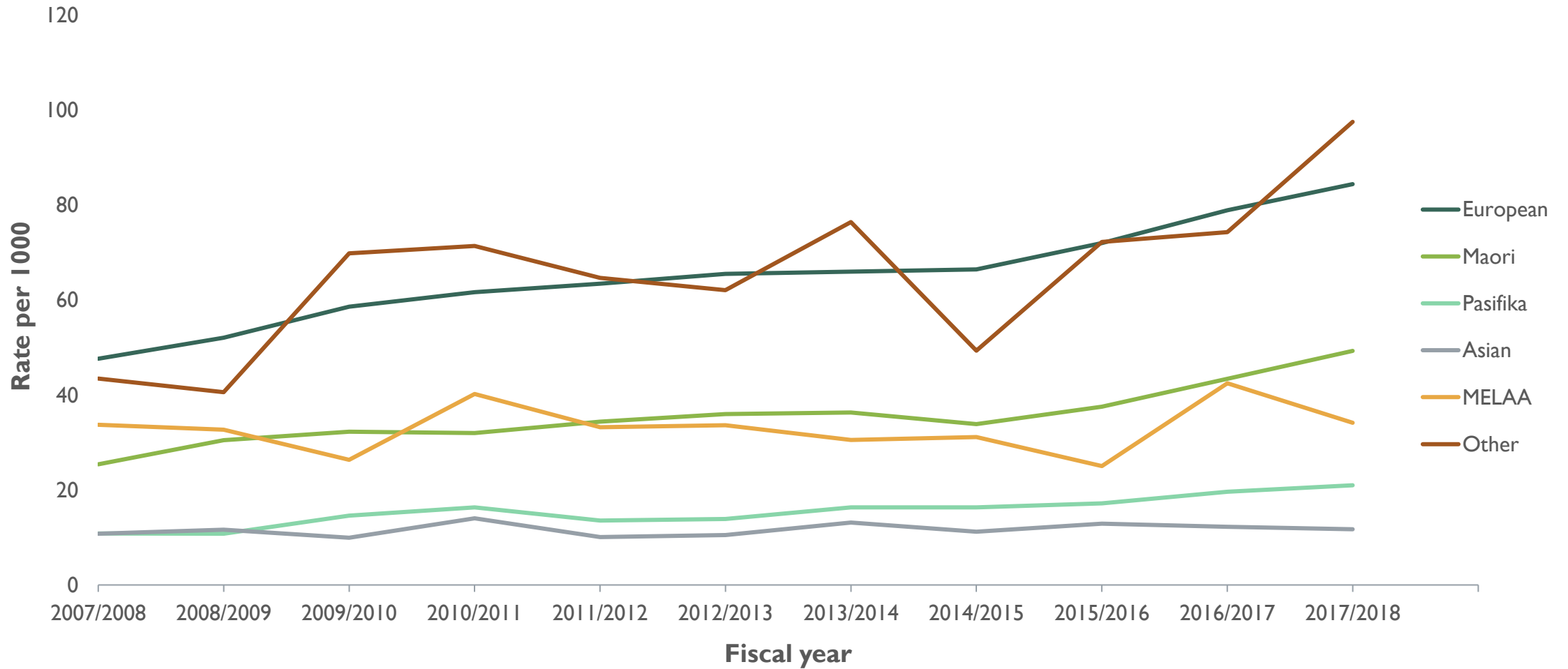


# DISPENSING PREVALENCE BY AGE

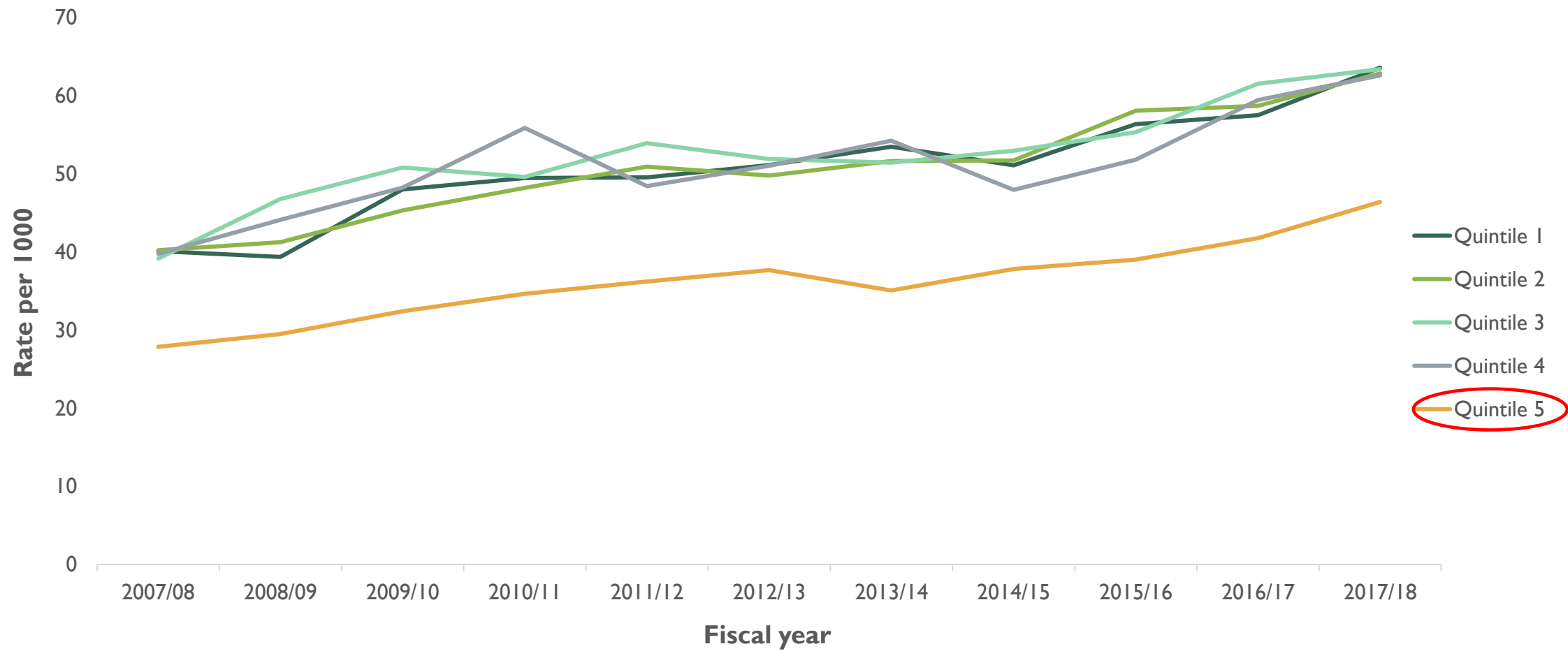




# DISPENSING PREVALENCE BY ETHNICITY



# DISPENSING PREVALENCE BY NZDEP2013 QUINTILES



## PREVALENCE BY MEDICATION TYPE (PER 1000)

Fiscal year	SSRI	SNRI	TCA	NaSSA
2007/08	30.4	1.7	5.5	s
2008/09	32.6	2.3	6.3	s
2009/10	35.4	2.8	6.8	s
2010/11	37.1	3.6	7.2	0.1
2011/12	37.4	3.8	7.4	0.3
2012/13	37.6	4.1	7.2	0.2
2013/14	38.6	4.5	7.0	0.3
2014/15	36.9	5.3	7.1	0.4
2015/16	40.4	5.7	7.2	0.5
2016/17	43.3	7.0	7.0	0.8
2017/18	46.4	7.1	7.3	1.2

*Note: s = suppressed; MAOIs and TeCA prevalence not shown due to suppression from very low counts*

# COMPARISON WITH OTHER COUNTRIES

New Zealand	Other countries
<p><b>Increased</b> reliance on antidepressants during pregnancy</p> <ul style="list-style-type: none"><li>• 3.6% to 5.9%</li></ul>	<p><b>Increased</b> reliance on antidepressants during pregnancy</p> <ul style="list-style-type: none"><li>• Denmark: 0.2% to 3.2%</li><li>• US: 2% to 7.6%</li></ul>
<p><b>SSRIs</b> dominant antidepressant</p> <ul style="list-style-type: none"><li>• ~80% of women who received a dispensing</li></ul>	<p><b>SSRIs</b> dominant antidepressant</p> <ul style="list-style-type: none"><li>• UK: 80%</li><li>• Denmark: 88.7%</li></ul>

# COMPARISON WITH OTHER COUNTRIES

New Zealand	Other countries
<p><b>Cessation during pregnancy</b></p> <ul style="list-style-type: none"><li>2017/18 - ~5.5% pre-pregnancy to 4.3% in trimester 1</li></ul>	<p><b>Cessation during pregnancy</b></p> <ul style="list-style-type: none"><li>Canada: 6.6% (study population prior to pregnancy) vs. 3.7% (first trimester)</li></ul>
<p><b>Decreased prevalence following trimester 1</b></p> <ul style="list-style-type: none"><li>2017/18 – 4.3%, 3.5% and 3.5%</li></ul>	<p><b>Decreased prevalence following trimester 1</b></p> <ul style="list-style-type: none"><li>Canada: 3.7%, 1.6% and 1.1%</li><li>Netherlands: 2.0%, 1.8% and 1.8%</li><li>US: 5.1%, 3.8% and 4.1%</li></ul>

# SOCIODEMOGRAPHIC DIFFERENCES

- Younger women and those from most deprived areas have the lowest dispensing prevalence
  - Younger age and low SES are risk factors for antenatal depression
  - Lower dispensing prevalence reflecting barriers to accessing medication?
- Highest dispensing prevalence in NZ Europeans
  - NZ Europeans are less likely to experience serious depressive symptoms or mood disorders during pregnancy relative to all other ethnic groups
  - Could reflect differences in access to healthcare or cultural differences in treatment and perception of depression
- Bowden et al. (2019) observed similar ethnicity and deprivation differences in antidepressant dispensing in NZ youth

## NEXT STEPS

1. Existing trends (over time and across sociodemographic groups) in antidepressant intake during pregnancy
  2. Unmedicated depression – how prevalent? Does this vary across sociodemographic groups?
  3. Are the risks associated with gestational antidepressant intake greater than risks associated with unmedicated depression?
- The IDI is based on **service use**
    - Not great for evaluating soft measures (e.g. symptoms) and biased in favour of those who use services
    - No GP information
  - Needs to be supplemented with data sources that provide this information
    - Representative surveys/longitudinal studies

## NEXT STEPS: *GROWING UP IN NEW ZEALAND* STUDY

1. Look at sociodemographic differences in antidepressant intake during pregnancy
  - Do they align with what we're seeing in the population
2. What proportion are experiencing **unmedicated** depression?
  - Edinburgh Postnatal Depression Scale – screen for antenatal and postnatal depression
  - Previous research with this study has identified that younger mothers, non-European mothers and those from low income homes are more likely to be experiencing depression in pregnancy
3. Are there differences in the risk of adverse child outcomes between women with unmedicated depression compared to women on antidepressants?
  - Birth outcomes, cognition, behaviour, mental health



# CHILD OUTCOMES



## Antenatal

Birthweight

Pre-term birth



## 2 years

Behaviour (SDQ)



## 54 months

Behaviour (SDQ)

Receptive language  
(Adapted PPVT-III)

Early literacy (DIBELS  
letter naming fluency)

Executive control (Luria  
hand clap task)



## 8 years

Behaviour (SDQ)

Emotion, cognition, and  
motor abilities (NIH  
toolbox)

Anxiety (PROMIS)

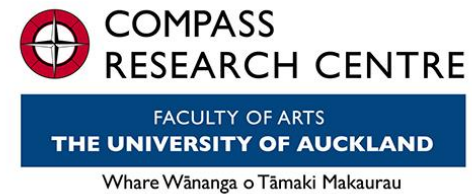
Depression (CES-DC)

# ADDITIONAL POINTS

- Not everyone may WANT to be on medication
  - Individual preferences
  - Ethnic and cultural backgrounds may influence treatment choice
- This is not to diminish the massive importance of talk therapy
  - This can be expensive and difficult to access as a long-term option for some women
- This research can hopefully inform treatment options for women who find antidepressants helpful but are worried about risks to their child

# ACKNOWLEDGEMENTS

- Charlotte Svardal
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National  
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A BETTER  
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# QUESTIONS

