Centre for Community Child Health

Variation in ADHD medication prescribing: where, what and why?

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Overview

- What is variation and does it matter?
- Drivers of variation (supply and demand)
- Variation in stimulant medication prescribing in Australia
  - 2015 Australian Atlas of Healthcare Variation
  - 10% Medicare (PBS) data set
- Next steps in research……

What is variation in care?

- Wennberg's framework (2002) most common
- Focuses on unwarranted variation i.e. "*variation that cannot be explained by type or severity of illness or by patient preferences*"

- Further categorised as variation in:
  - Effective care i.e. when proven, clinically effective care is not used
  - Preference-sensitive care i.e. where there are two or more choices for care
  - Supply-sensitive care i.e. when variation arises due to availability of healthcare resources such as doctors or pathology services, rather than evidence.

Types of care in context of variation

- Effective care: strong evidence of efficacy, proven value, no significant tradeoffs, benefits outweigh risks
  - Management of mild and moderate asthma

- Preference-sensitive care: competing treatment options - different risks and benefits that individual patients may evaluate differently; cost or affordability factors.
  - Tonsillectomy vs. 'watch and wait' vs. nasal steroids in mild to moderate OSA

- Supply-sensitive care: utilisation driven by availability of resources, equipment and workforce; often no evidence of better outcomes in high-utilisation populations.
  - Laparoscopic cholecystectomy (Birkmeyer et al 2013, Wennberg et al 2002)

Why does it matter?

- Variation in health care raises questions about:
  - appropriateness of care,
  - equity,
  - access, and
  - cost to patient and system.

- Understanding variation helps engage clinicians and patient groups to improve value in healthcare

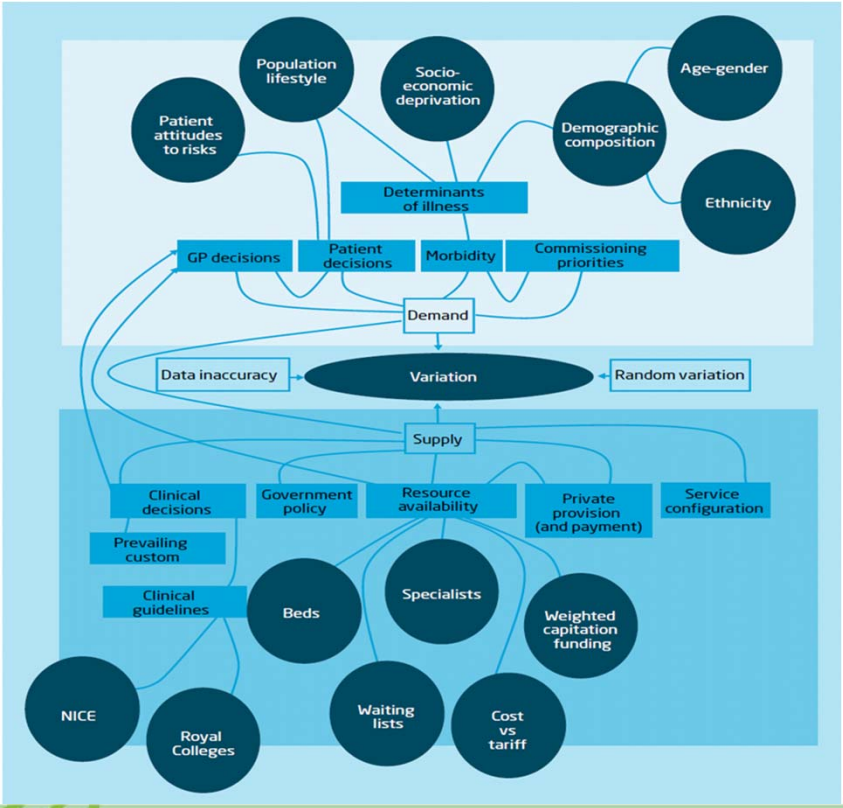
Variation in itself does not infer good or bad

Variation: not all bad

- Warranted (expected) variation
  - Reflects population health need or burden of disease
  - Individual preferences and values of patients
  - On a small scale may reflect practice innovation

- Unwarranted variation
  - Not explained by need, preferences and values
  - May signal inappropriate care – safety and quality issues
  - May signal resource misallocation – questions around equity/access, efficiency ($) and value

Causes of variation



Appleby. J et al. 2011. *Variations in healthcare - the good, the bad and the inexplicable.* King's Fund

Child mental health in Australia

14% of 4-17 year-olds in Australia (580,000 children and adolescents) are experiencing mental disorders.

Most common disorders are ADHD (7.5%), anxiety (6.9%) and depression (2.8%)*

Despite this, only 50% of children with a mental health disorder received professional care.*

Need to understand who gets care, who does not, where care is accessed, barriers (with a focus on equity) and clinician concerns about current service models.

*2013 National Child and Adolescent Mental Health Survey

Australian Atlas of Variation in Healthcare

- 2013 MBS, PBS and hospital data, based on child's postcode of residence.
- PBS - dispensed medication (includes repeat scripts)
- Conditions/medications:
  - Asthma & related respiratory admissions
  - Asthma medications
  - Anti-depressant/anti-anxiety medications
  - **Stimulant medications**
  - Grommets
  - Tonsillectomies
- Data mapped to statistical area 3 (ABS area, n=325 in Australia)

Stimulant medication variation in 2013-14

- 544,218 PBS prescriptions
- 10,780 prescriptions per 100,000 people aged 17 years and under (the Australian rate).
- No. of PBS prescriptions dispensed across 325 local areas ranged from 382 to 28,642 per 100,000 people aged < 17 years.
- No. of scripts **was 75.0 times higher** in the area with the highest rate compared to the area with the lowest rate.
- After excluding outliers, the rate across the 299 remaining local areas was **7.3 times higher** in one local area compared to another.

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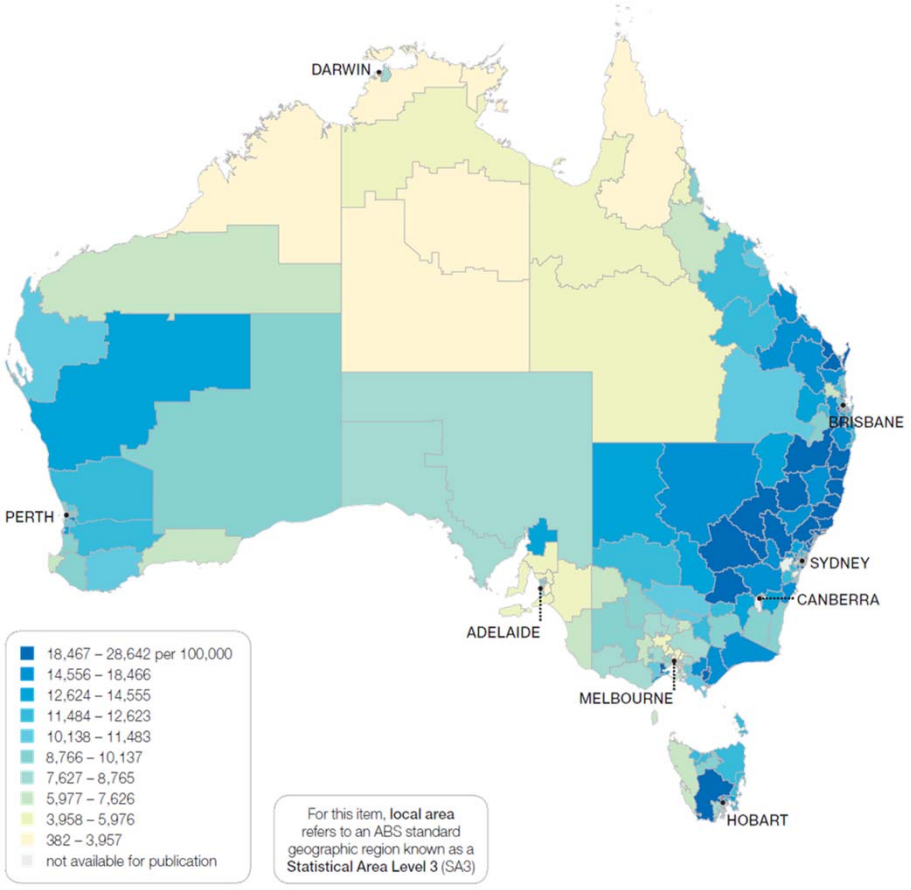
ADHD medicines

17 years and under



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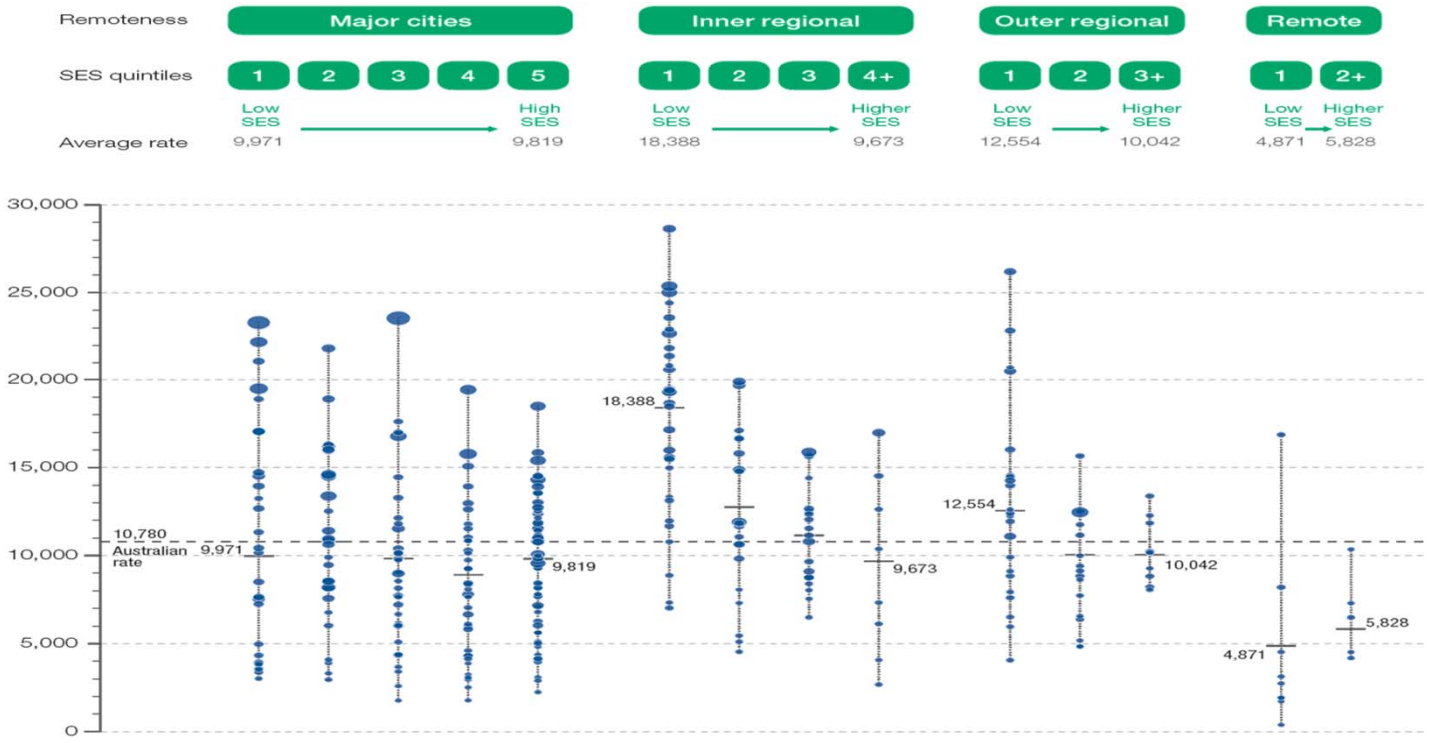
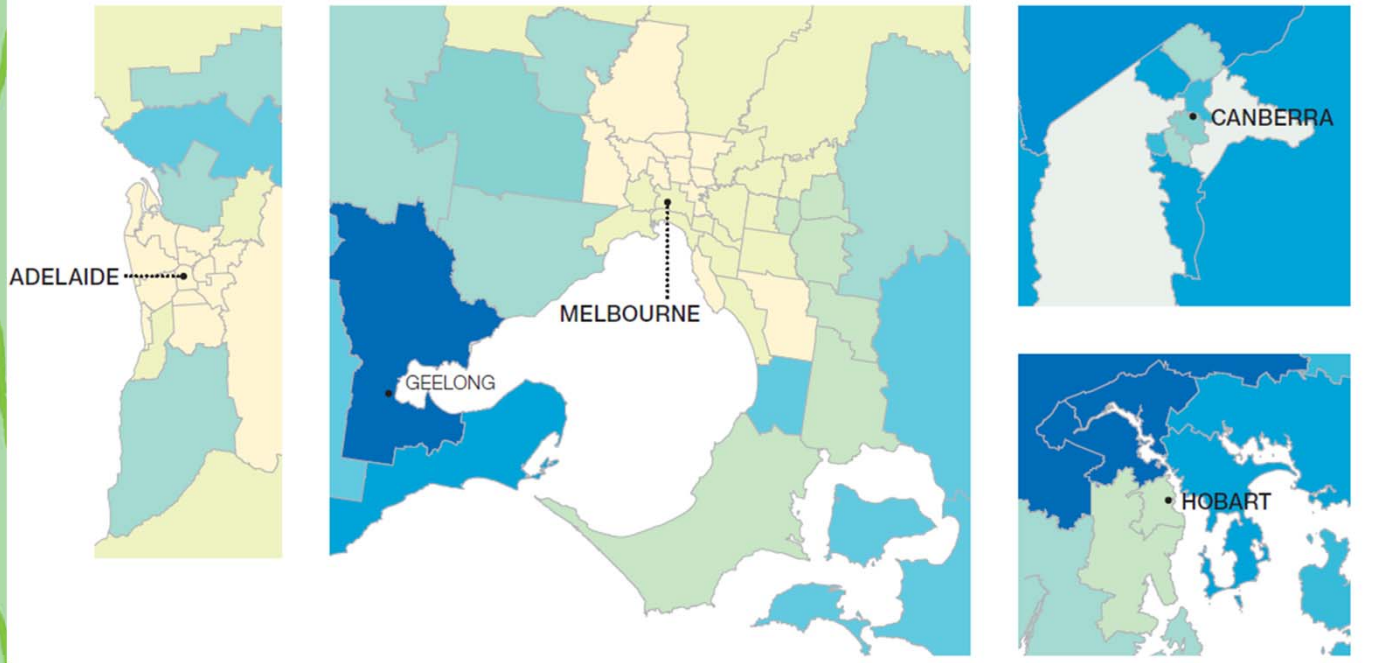


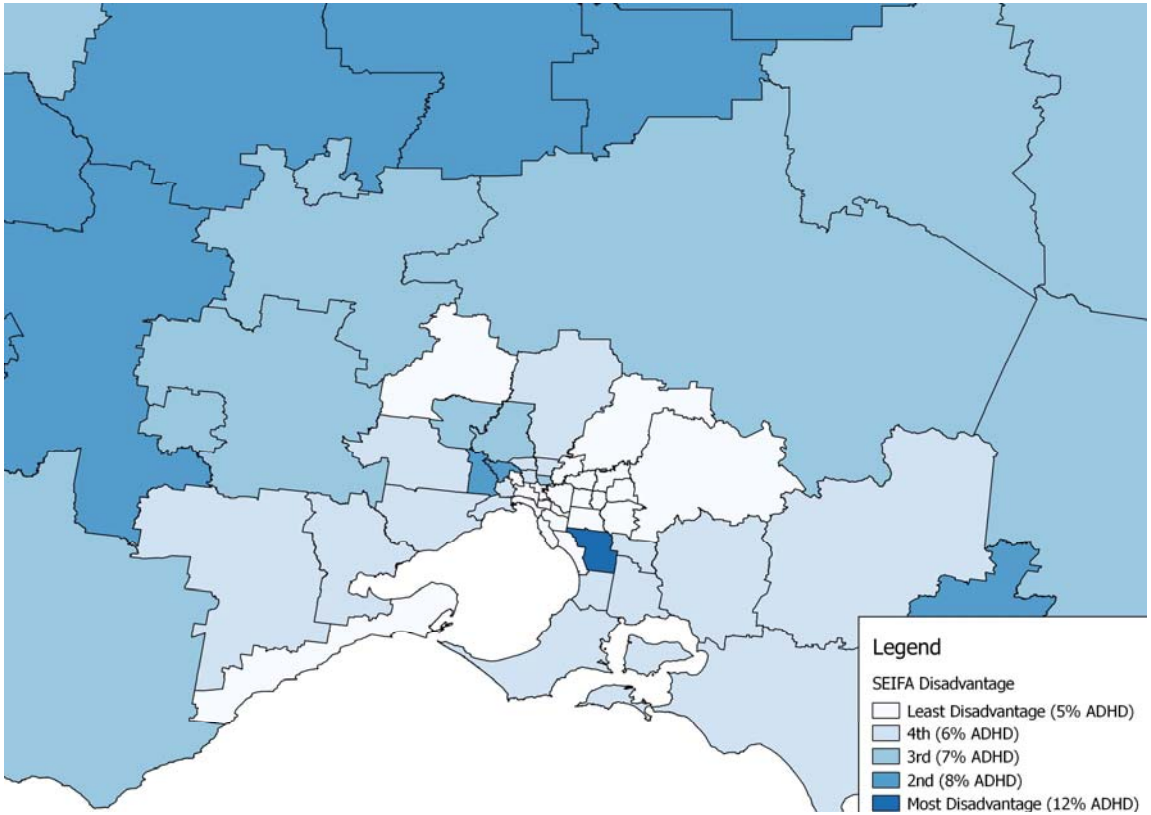
ADHD Medicines: Rural kids and poorer kids more likely to get meds than city or richer kids

Who gets care?



Stimulant medication dispensing in 2013

Source: Australian Atlas in Healthcare Variation (PBS data)



Prevalence of ADHD by socioeconomic quintile

Based on 2013 Young Minds Matter survey (n=6,630, nationally representative sample)

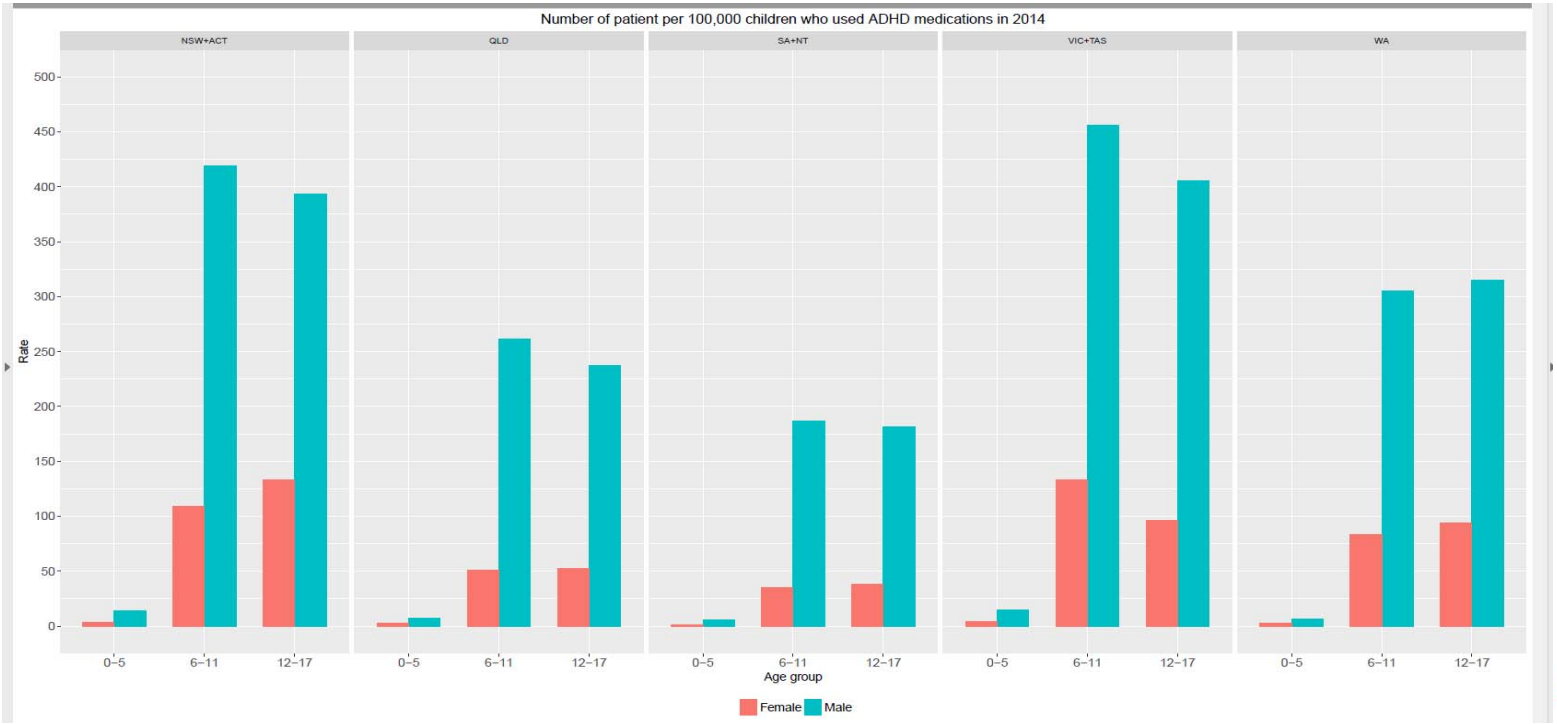
Medicare 10% sample

- Last year Medicare released first ever sample of data - 10% of the population, nationally representative
- Allows you to look at MBS and PBS item numbers, dating back over 15 years
- However, PBS item numbers BEFORE 2012 did not include medicines under the co-payment threshold ($35/script)
- We have analysed data on stimulant use from 2013 & 2014

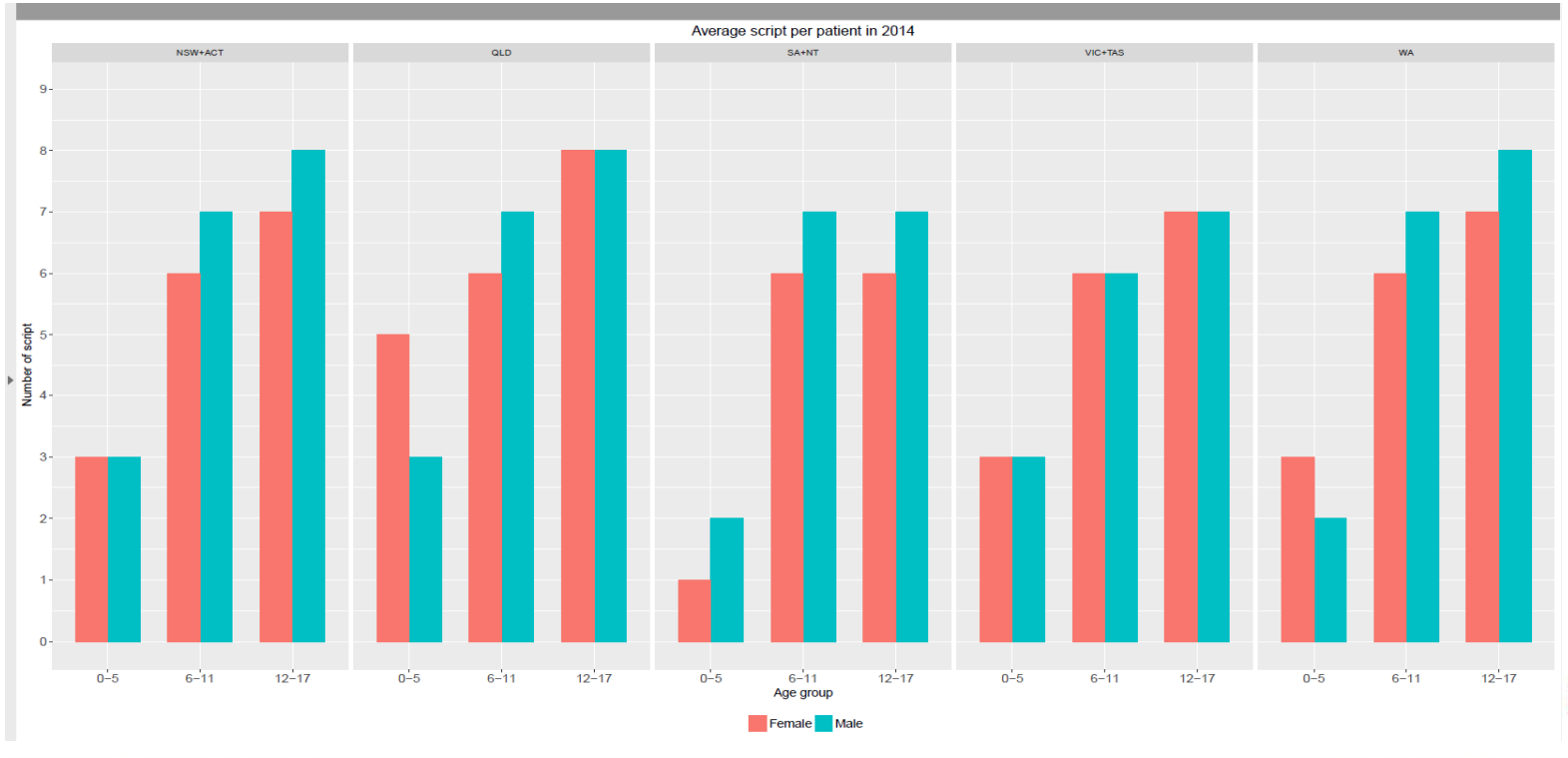
No. of children per 100,00 prescribed a stimulant medication, by state

Age group	Number of children prescribed per 100,000 children				
	NSW+ACT	QLD	SA+NT	VIC+TAS	WA
0-5 years 2013	8	6	5	11	4
2014	9	5	3	10	5
6-11 years 2013	258	142	115	279	181
2014	269	159	113	299	196
12-17 years 2013	265	161	100	243	194
2014	267	147	112	254	207

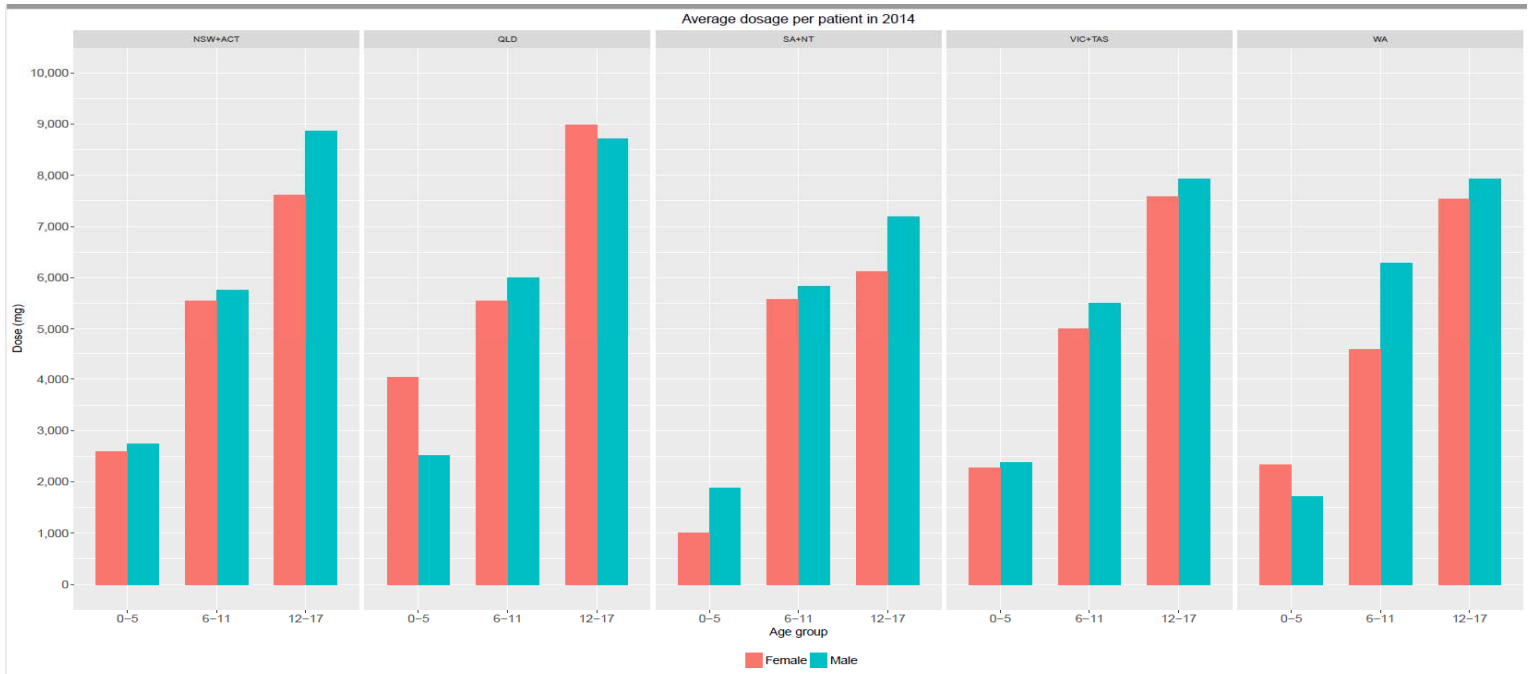
Rate of prescribing of stimulant medication by age, sex and state



Average no. of scripts of stimulant medication by age, sex and state



Average dose of stimulant medication by age, sex and state



Variation in mental health prescribing

Large geographic, gender and age variation in dispensing of medications

Not all due to disease burden therefore INEQUITABLE

Other (potential) causes:

- lack of psychology services (rural, lower SES areas)
- cost to families
- waiting times (public vs private)
- prevailing customs and beliefs (clinician and patient) etc.

Towards equitable and evidence based mental health services

NHMRC project grant (2017-2019):

- **document mental health service use** for children with (i) high levels of MH difficulties (SDQ) and (ii) mental health disorders (DSM V)
- **describe variation in services** used by family SES and rural status
- **clinician and family interviews**: barriers and enablers to care, by low vs high SES, city vs rural families, and public vs private systems
- **"secret shopper" studies**: document waiting times and out of pocket costs to access mental health services (psychologists, paediatricians, psychiatrists) across SES and geographical areas.
- **workforce mapping** (supply) across states of Victoria and South Australia

Next steps

- Need to better measure outcomes to see if the variation does matter
- Measurement needs to be systematic, brief, readily incorporated into day-to-day practice
- Challenging because most prescribing is in private practice (small business)
- ? More feasible in outpatients/community practices if systems are available to collect and store the data? Eg Epic electronic medical record at RCH

- In the meantime, if assume that 'best practice' = combined non-pharmacological +/- pharmacological treatment and we find pockets of kids are missing out, need to advocate for better care for these kids.

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