Boomtime again for WA's ADHD Industry.

"Psychiatry is more like a two-party political system with the biological and environmental parties constantly vying for power. Biological psychiatry is now the party in power."

American psychiatrist **Peter R. Breggin M.D.** (1998),
Talking back to Ritalin, Common Courage Press

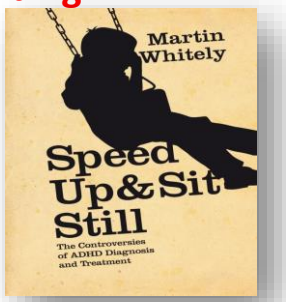
Presentation by **Dr Martin Whitely**
John Curtin institute of Public Policy
Curtin University

About Dr Martin Whitely

1959: **Born active, inattentive and impulsive**

1995-2001: **A teacher** at a wealthy all boys high school **in an area with very high rates of ADHD prescribing**

2001-2013: **A politician representing electorates with high rates of ADHD prescribing**



2013- 2020: A mental health advocate, researcher and author of numerous items on mental health, especially ADHD, including:

- ***Speed Up & Sit Still, the controversies of ADHD*** (UWA Publishing 2010)
- A website and blog: **PsychWatchAustralia.com**
- PhD Thesis ***Attention Deficit Hyperactivity Disorder Policy, Practice and Regulatory Capture in Australia 1992–2012***
- Lead author of ***Influence of birth month on the probability of Western Australian children being treated for ADHD*** Medical Journal of Australia, January 2017.
- And ***Attention deficit hyperactivity disorder late birthdate effect common in both high and low prescribing international jurisdictions: systematic review***, Journal of Child Psychology and Psychiatry, October 2018.

The ADHD Late Birthdate Effect

- **Western Australia** - In 2013 among children in Years 1 to 5 **at WA Primary Schools** (aged 6-10), those born in June (normally **the youngest students in a classroom) were approximately twice as likely** (boys +93%, girls +111%) **to have received ADHD medication as** those born the previous July (normally **the oldest students in class**).

- **Globally** - **It is the norm internationally for the youngest children in a classroom to be at increased risk of being medicated for ADHD**, even in jurisdictions with relatively low prescribing rates. The evidence of strong late birthdate effects in jurisdictions with comparatively low diagnosis/medication rates challenges the notion that low rates indicate sound diagnostic practices.

How is ADHD diagnosed?

Extract from **DSM-5 Diagnostic Criteria for ADHD**

American Psychiatric Association (2013), *Diagnostic and Statistical Manual of Mental Disorders. Fifth Edition, (DSM-5)*

"No biological marker is diagnostic for ADHD"

To be diagnosed ADHD a child should **display six** or more (at least five for those aged 17+) **of the nine** (listed in the following slides) **inattentive or hyperactive/impulsive behaviours**.

The symptoms should:

- Have persisted for at least 6 months.
- Be maladaptive and inconsistent with developmental level.

Extract from **DSM-5 Diagnostic Criteria for ADHD**

American Psychiatric Association (2013), *Diagnostic and Statistical Manual of Mental Disorders. Fifth Edition, (DSM-5)*

Inattention

a. often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities

b. often has difficulty sustaining attention in tasks or play activities

c. often does not seem to listen when spoken to directly

d. often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)

e. often has difficulty organizing tasks and activities

f. often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork/homework)

g. often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)

h. is often easily distracted by extraneous stimuli

i. is often forgetful in daily activities

Extract from **DSM-5 Diagnostic Criteria for ADHD**

American Psychiatric Association (2013), *Diagnostic and Statistical Manual of Mental Disorders. Fifth Edition, (DSM-5)*

Hyperactivity/Impulsivity

a. often fidgets with hands or feet or squirms in seat

b. often leaves seat in classroom or in other situations in which remaining seated is expected

c. often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)

d. often has difficulty playing or engaging in leisure activities quietly

e. is often "on the go" or often acts as if "driven by a motor"

f. often talks excessively

g. often blurts out answers before questions have been completed

h. often has difficulty awaiting turn

i. often interrupts or intrudes on others (e.g., butts into conversations or games)

How big is the ADHD Industry?

- ADHD is the most commonly diagnosed and medicated childhood psychiatric disorder in the world.[1,2]

- Global sales of 'ADHD medications' were estimated at US$16.4 billion (about A$25 billion) in 2018. (3) This does not include the payments received for diagnosing, researching, promoting and providing non-drug treatments. Nonetheless, this was larger than the National Income (GDP) of 68 of the 186 countries for which the International Monetary Fund provided 2018 data.

- Global ADHD drug sales are forecast to rise to US$24.9 billion By 2025.

1. Inyang Takon (2011), 'Clinical use of a modified release methylphenidate in the treatment of childhood attention deficit hyperactivity disorder', *Annals of General Psychiatry,*10:25. Available at http://www.annals-general-psychiatry.com/content/10/1/25; and US National Library of Medicine, 'Attention Deficit Hyperactivity Disorder', *Medline Plus,* 11 April 2011. Available at http://www.nlm.nih.gov/medlineplus/ency/article/001551.htm (accessed 13 December 2011)

2.Sung V, Hiscock H, Sciberras E, Efron D. (2008), 'Sleep problems in children with attention-deficit/hyperactivity disorder: Prevalence and the effect on the child and family', *Archives of Pediatrics and Adolescent Medicine,* 162(4): pp. 336-342.

3. Grand View Research (February 2019), Market Research Report - Attention Deficit Hyperactivity Disorder (ADHD) Market Analysis Report By Drug Type (Stimulant, Non-stimulant), By Demographic, By Distribution Channel (Hospital & Retail Pharmacy), And Segment Forecasts, 2019 – 2025. Available at https://www.grandviewresearch.com/industry-analysis/attention-deficit-hyperactivity-disorder-adhd-market

How Big is the ADHD Industry in Australia?

- **Australian Children - In 2009**, according to Australian Government data **60,931 children (1.6% of those aged 4-17)** were dispensed at least one prescription of an ADHD medication (primarily Amphetamine Type Stimulants).[1]
- In **2017** the latest year for which age specific data is available this number had risen to **107,345**.[2]
- From January 2018 until September 2019 the total number of PBS prescriptions has risen at 11% per annum.[4] Based on this rate of growth, I estimate that **more than 130,000 Australian children (3.0% of those aged 4-17)** will have been dispensed an ADHD medication **in 2019**.

- **Australian Adults** - The number of Australian **adults** dispensed at least one prescription of an ADHD medication **in 2017 was 56,605**.[2]

[1] Department of Health and Ageing, *Letter to Martin Whitely MLA dated 21 April 2012*

[2] Australian Government Pharmaceutical Benefits Scheme Drug Utilisation Sub-Committee (DUSC) Attention Deficit Hyperactivity Disorder: Utilisation Analysis, Public Release Document, May 2018 DUSC Meeting. **Table 5 on page 11**. Available at http://www.pbs.gov.au/industry/listing/participants/public-release-docs/2018-05/adhd-dusc-prd-2018-05-final.pdf (accessed 5 January 2019)

[3] Department of Health and Ageing, *Medicare Australia*. Self-generated report from http://medicarestatistics.humanservices.gov.au/statistics/mbs_item.jsp

ADHD - Under-Diagnosed, Over-Diagnosed or Unscientific Harmful Label?

The Enthusiasts

Proponents believe ADHD is a common genetically determined neurobiological disorder, that is, a biochemical brain imbalance, which is under-diagnosed and under-medicated.

The Critics

Concerned Critics - some critics take a centrist view, that ADHD is a rare but real condition, that is over-diagnosed and over-prescribed.

Convinced Critics - Some critics (myself included) argue ADHD is a dumbed down label that robs understanding of a child's individual circumstances and that the use of amphetamines and other psychotropic drugs to 'treat' ADHD creates far more ongoing harm than benefit.

ADHD is “a developmental failure in brain circuitry that underlies inhibition and self-control. This loss of self-control in turn impairs other important brain functions crucial for maintaining attention.”

Dr Russel Barkley

Smith A (2004), *The Brains Behind It: New Knowledge about the Brain and Learning,* revised edn, Network Educational Press Limited, Stafford, p.121.

“The vast majority of kids on ADHD drugs are on drugs unnecessarily. They are just naughty little boys and they would have been coped with before but they are now being medicalised.”

Professor Fiona Stanley

Transcript from Australian Parliamentary Conference
Parliament House, Perth Western Australia
Friday, 6 November 2009 pp35-36

The ADHD CONTROVERSY

The controversy centres around three issues:

1. **The validity and reliability of the diagnosis.**
2. **The long-term safety and efficacy of ADHD medications.**
3. **The relationship between ADHD and drug abuse.**

Western Australia's ADHD story offers insights (and the opportunity for research) into all three aspects.

WA's ADHD HISTORY

A tale of two cohorts

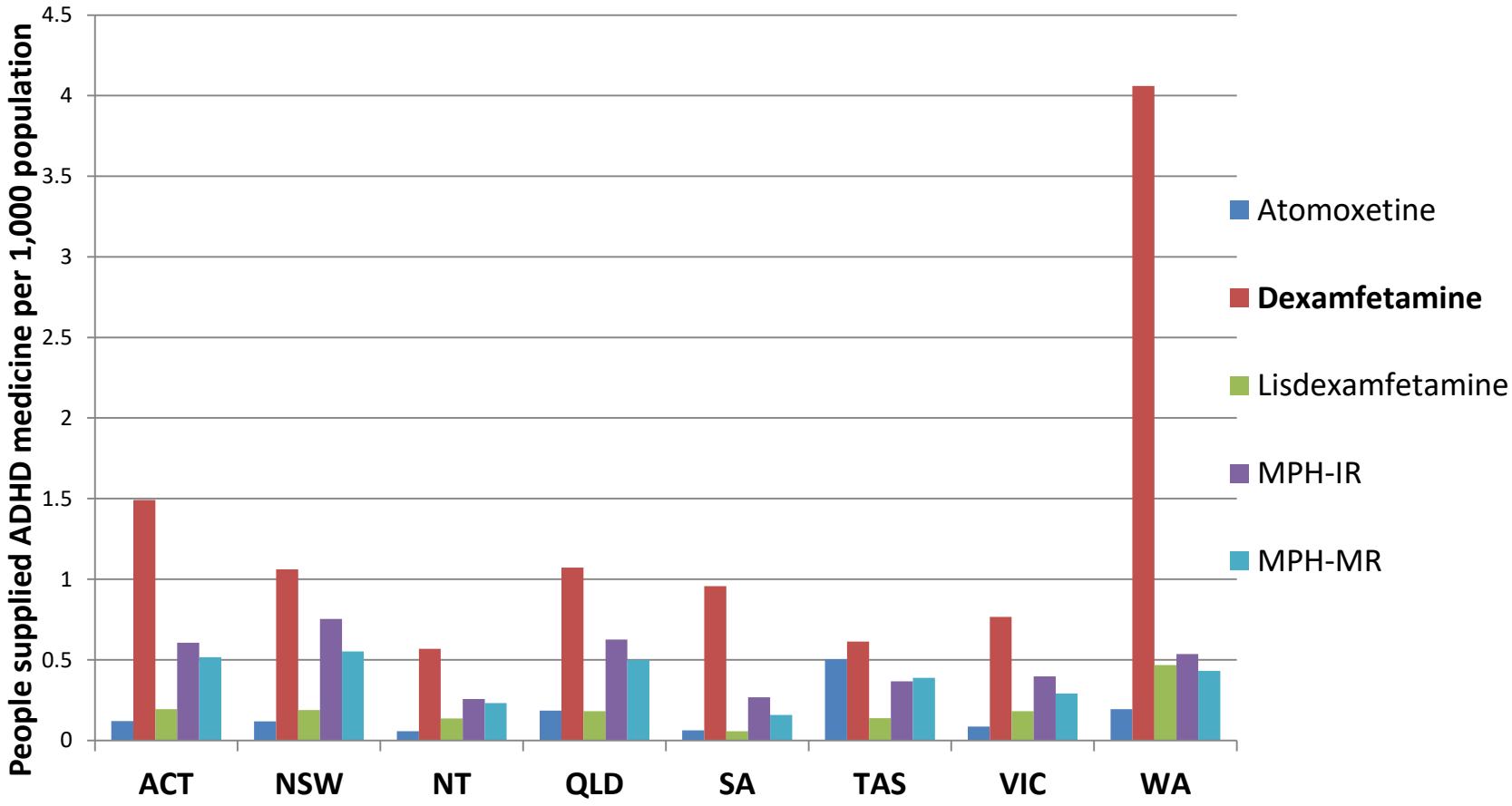
- Adults (18+)
- Children and Adolescents (0-17)

WA Adults

Adult ADHD Prescribing – Perth Australia's Dexamphetamine Capital

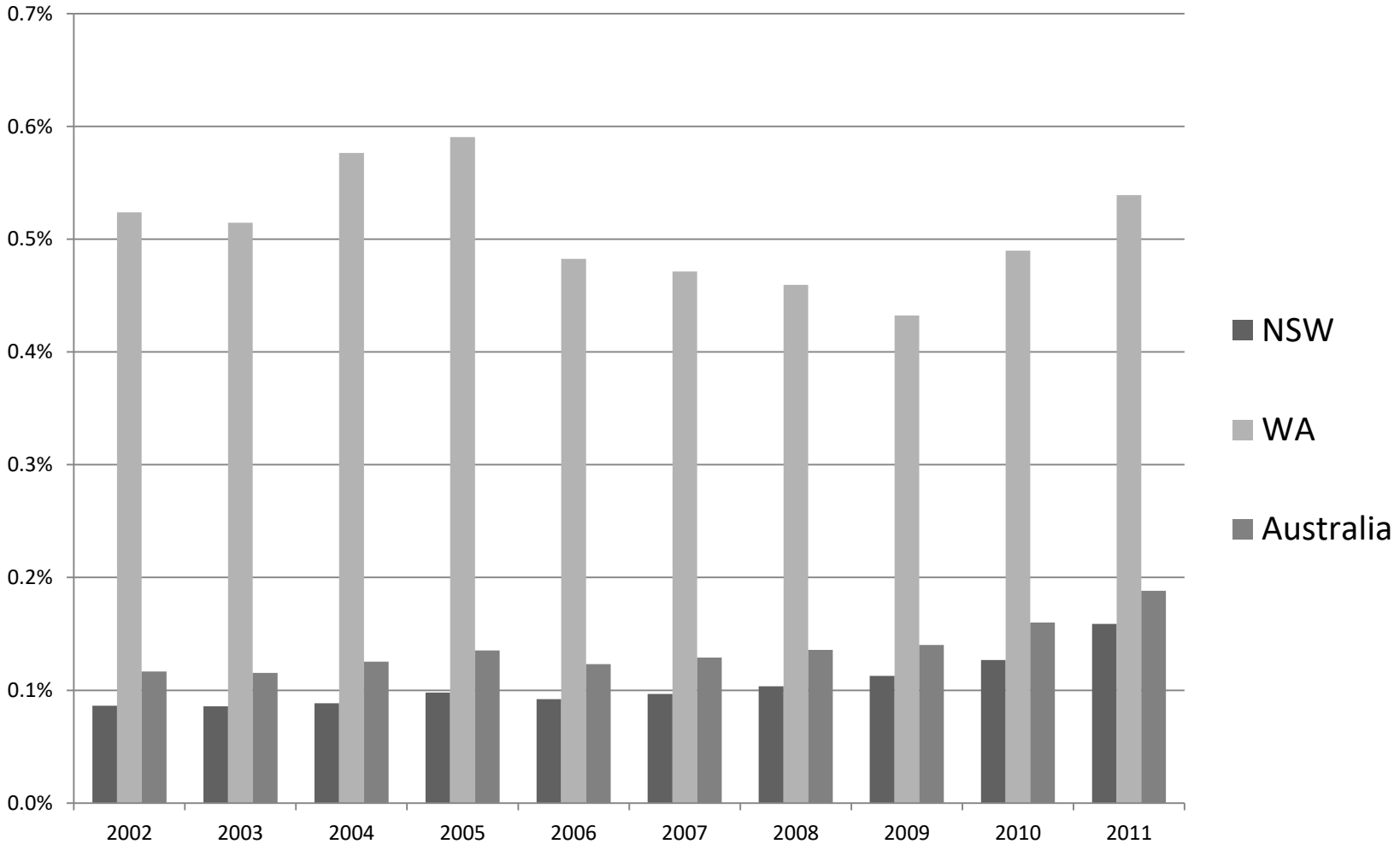
Source: **Australian Government Pharmaceutical Benefits Scheme Drug Utilisation Sub-Committee Attention Deficit Hyperactivity Disorder**: Utilisation Analysis, Public Release Document, May 2018 DUSC Meeting. Figure 11 Available at http://www.pbs.gov.au/industry/listing/participants/public-release-docs/2018-05/adhd-dusc-prd-2018-05-final.pdf (accessed 13 November 2019)

Figure 2. Number of people aged 18+ supplied an ADHD medicine per 1,000 population in 2017 by patient state/territory and medicine



PBS Adult (18+) per capita prescribing rate

Source: M Whitely PhD Thesis ***Attention Deficit Hyperactivity Disorder Policy, Practice and Regulatory Capture in Australia 1992–2012*** page 97



Meth/amphetamine (including prescription Amphetamine Type Stimulant) use by WA Adults.

Non-medical meth/amphetamine use - National Drug Strategy Household Survey

- The latest 2016 NDSHS reported recent meth/amphetamine use in WA (2.7%) was higher than the national figure (1.4%). Similar patterns were evident in the 2010 and 2013 surveys.

Drug Treatment Services - Australian Institute of Health and Welfare

- In 2005-6 the percentage of people that presented for treatment for problematic drug use for which amphetamine was nominated as the "principal drug of concern" in WA was 24.6%. The national percentage was 11%.
- In 2017-18 the percentage of treatment episodes for which amphetamine was the principal drug of concern in WA grew to 34%, compared with 25% nationally.

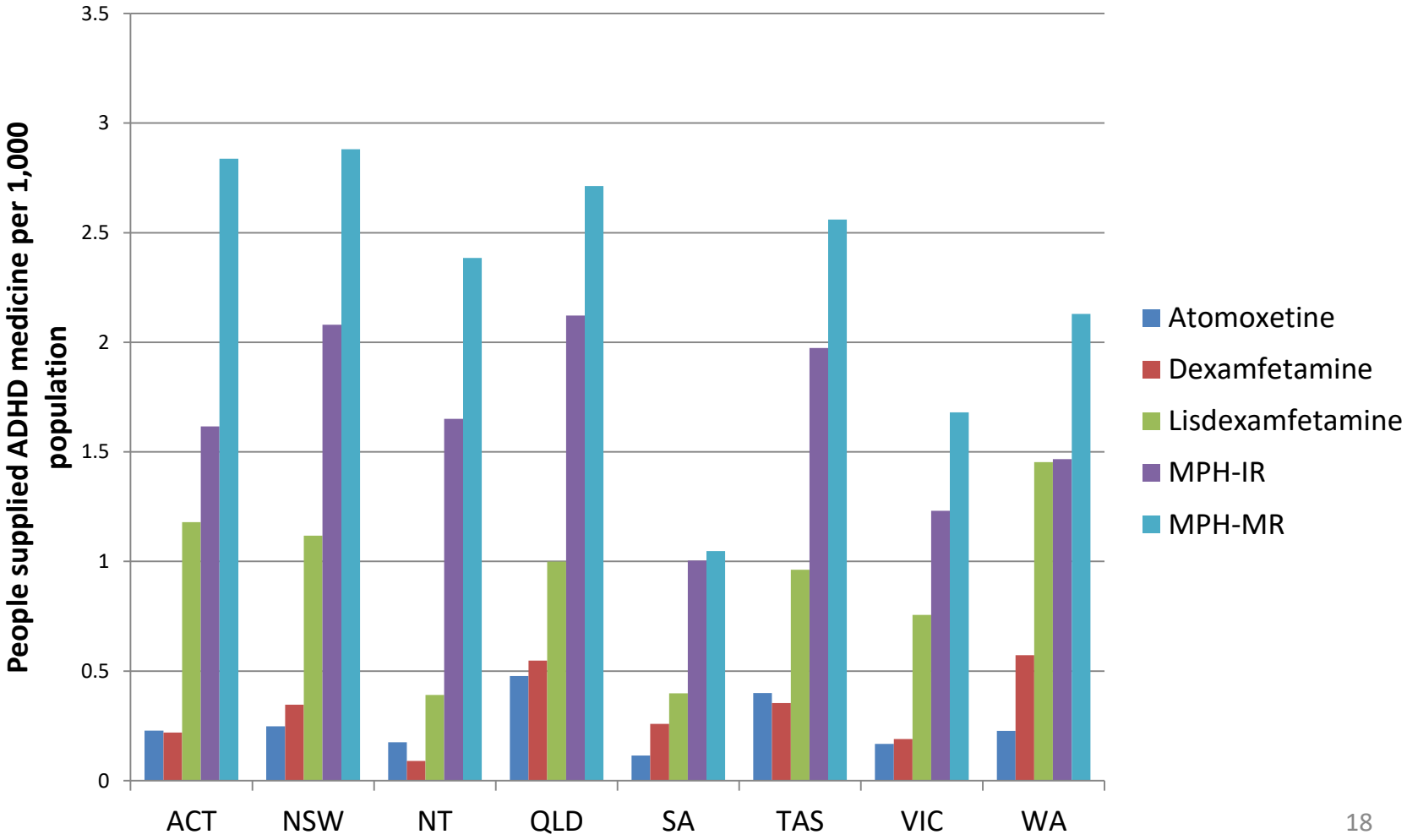
Adult non-medical use of prescription Amphetamine Type Stimulants - There are few data regarding the non-medical use of prescribed ATS in Australia, but those available suggest that it has long been disproportionately common in WA.

- *Ecstasy and Related Drugs Reporting System* - in 2005 the WA percentage of the sample self-reporting last six-month non-medical use was 73%, compared to 25% nationally , and in 2017 this figure for WA was 76%, compared to 42% nationally.
- Another study, conducted in 2011-12, interviewed young adults in "night time entertainment districts" around Australia. It found a much higher prevalence of non-medical use of prescription ATS in Perth (15.8%) than in the other cities surveyed (Geelong 5.0%, Melbourne 1.6%, Sydney 2.4% and Wollongong 4.0%).

WA Children and Adolescents

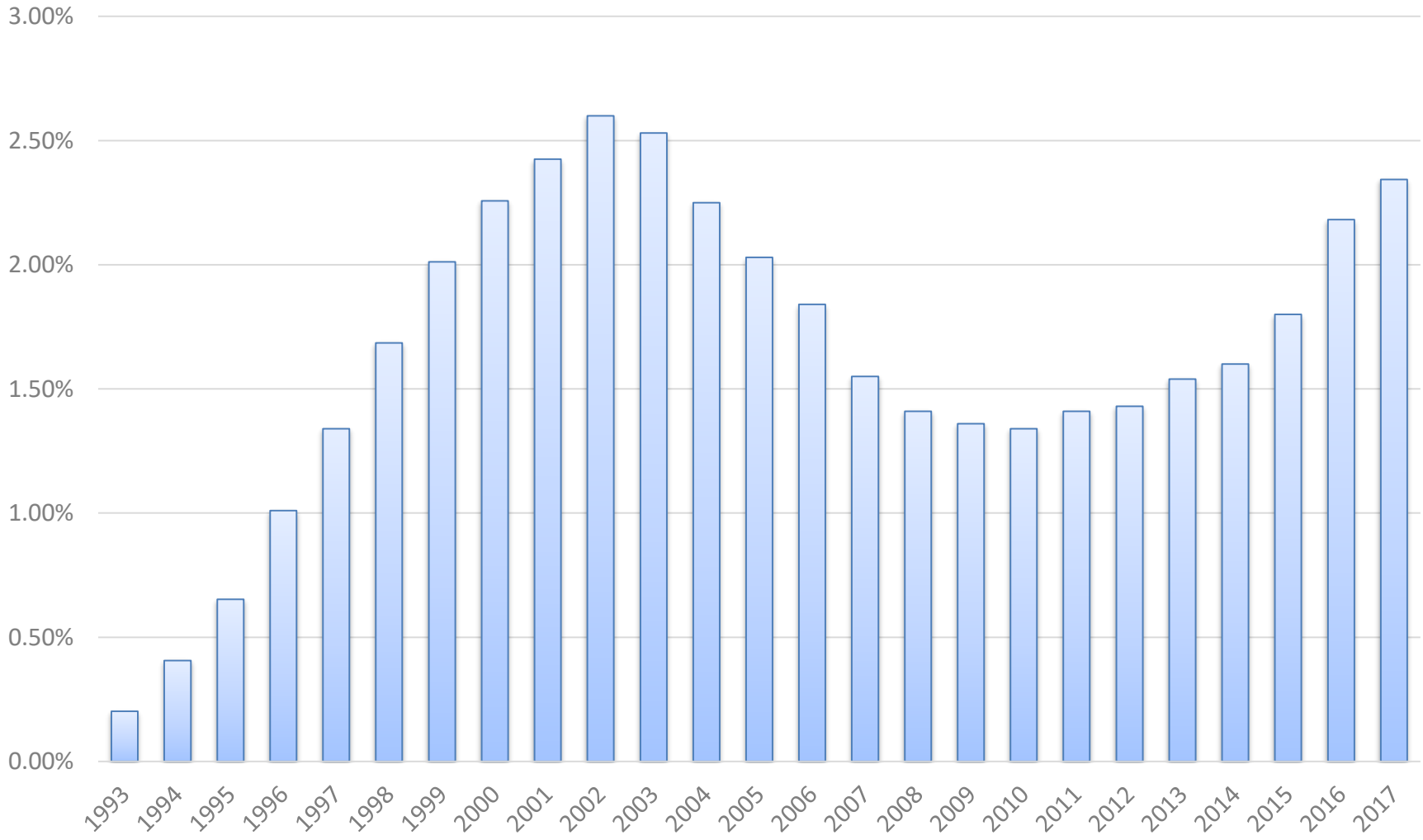
Children (aged 0-17) supplied an ADHD medicine per 1,000 population in 2017 by patient state/territory and medicine

Source: **Australian Government Pharmaceutical Benefits Scheme Drug Utilisation Sub-Committee Attention Deficit Hyperactivity Disorder**: Utilisation Analysis, Public Release Document, May 2018 DUSC Meeting. Figure 11 Available at http://www.pbs.gov.au/industry/listing/participants/public-release-docs/2018-05/adhd-dusc-prd-2018-05-final.pdf (accessed 13 November 2019)



% of WA children aged 4-17 prescribed stimulant medication for ADHD

Sources: ADHD prescribing rates - WA *Stimulant Regulatory Scheme Annual Reports* (2004-2017) and Commonwealth Government Pharmaceutical Benefits Scheme Data (1993- 2003).



The illicit use of ADHD Medication by WA High School Students.

Two snapshots 2005 and 2017.

2005 snapshot - Prescription amphetamine illicit use in WA by 12-17 year-olds

Throughout the 1990s and early 2000's there had been considerable media reporting of the diversion of ADHD amphetamines amongst teenagers and young adults. When data on teenage abuse rates first became available through the 2005 Australian Secondary Students' Alcohol and Drug Survey *(*ASSAD) it estimated that:

- 9,492 (being 5.5% of) WA secondary school students had abused prescription Amphetamine Type Stimulants in the last 12 months. In 2005 only 8,057 were prescribed an Amphetamine Type Stimulant.

- 27% of 12-17 year-olds who had been prescribed stimulant medication either gave it away or sold it. Of these, 67% had done so in the last year and 30% percent in the last week.

- 45% of WA high school students who had ever taken dexamphetamine or methylphenidate were not prescribed the drugs by a doctor.

Note: Similar data was not been published for the 2008, 2011 or 2014 ASSAD surveys or for other Australian states.

Source: Drug and Alcohol Office WA, *ASSAD Drug Report 2005,* pp 30–32.
http://www.dao.health.wa.gov.au/portals/0/DAO/Info%20and%20resources/Research%20and%20statistics/Statistics/ASSAD/2005%20ASSAD%20Illicits%20report.pdf

2017 snapshot - Prescription dexamphetamine illicit use in WA by 12-17 year-olds

The 2017 ASSAD surveyed 3,361 WA secondary students about their non-medical use of dexamphetamine.

- 3% reporting non-medical use of dexamphetamine in the last 12 months.

- In comparison only 1.2% were prescribed dexamphetamine. So for every WA secondary school student prescribed dexamphetamine, approximately 2.5 used it non-medically.

Note: The 3% figure does not include those students who had used other prescribed Amphetamine Type Stimulants for non-medical purposes, especially methylphenidate. In 2017 5,356 (59%) of the 9,587 surveyed WA minors prescribed an ATS for ADHD took methylphenidate only. It is therefore likely that the rate of last 12-month non-medical use of all forms of prescribed Amphetamine Type Stimulants was higher than 3% who used dexamphetamine non-medically.

WA's ADHD Story – 10 Key Facts and Research Opportunities

1. Childhood ADHD – **Perth was the world's first ADHD child prescribing hot spot to see a large decline in per capita child prescribing rates.** (50% between 2002 and 2010). Over a similar timeframe (2002 to 2011) there was a 72% decline in self-reported last week amphetamine use by WA secondary school students. **However, beginning in 2011 (and accelerating in 2014) child per capita prescribing rates have rebounded significantly.**

2. Adult ADHD - **WA has consistently had the highest adult prescribing rates in Australia.** In 2002 WA adults were prescribed government subsidised ADHD medications at 7.1 times the national rate (excluding WA). By 2017 there had been a closing of the gap but WA's rate was still approximately 3 times the average rate of other states. WA has also consistently reported high rates of illicit adult meth/amphetamine use.

3. There appears to have been a strong **correlation between ADHD prescribing rates and amphetamine and other drug abuse rates for both adults and teenagers in WA**.

WA's ADHD Story – 10 Key Facts and Research Opportunities (continued)

4. In WA and all around the globe **boys are roughly three times more likely to be medicated** for ADHD than girls.

5. WA **adults are prescribed dexamphetamine (rather than Ritalin)** at a grossly disproportionate rate compared to other Australian jurisdictions.

6. **Individual heavy prescribers have contributed significantly to overall WA prescribing rates and huge geographical variations in ADHD prescribing rates.** In 2003-2004 a single paediatrician prescribed ADHD stimulants to 2,077 children in 17 months. In 2015 one psychiatrist prescribed to 2,074 primarily adult patients.

7. In Australia **'regulatory capture' of ADHD policy by the ADHD Industry is the 'norm**'.

ADHD – 10 Key Facts and Research Opportunities (continued)

8. WA and international research has indicated that along with birthdate (relevant to classroom peers), **race, gender, IQ, genetics, treating clinician speciality (paediatrics v psychiatry), teacher attitude, parent attitude and socio-economic status all influence a child's likelihood of being medicated for ADHD**.
9. In 2010 the Raine Study conducted in WA provided a unique **long term data source for research which associated long term ADHD stimulant use with school failure and permanently raised blood pressure** (when comparing 'medicated' with 'never medicated' ADHD diagnosed children).
10. In WA - which allows little flexibility for parents in deciding when their child starts school – there is a strong ADHD late birthdate effect. Research Opportunity – **Do other Australian jurisdictions with greater flexibility for parents in deciding when children begin school have a stronger or weaker ADHD late birthdate effect?**

Comments, Criticisms, Questions?