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**Children and young people seeking and obtaining treatment for gender dysphoria in Australia:
Trends by state over time (2014-2108)**

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Introduction

Precise data regarding the frequency of people with gender dysphoria or who identify as transgender have been difficult to source. In attempting to count the transgender population, decisions need to be made about whom to include. For example, some people identifying as transgender live with their gender incongruence and do not seek treatment. Others make a social but not a medical transition, while others make social and medical transitions but not a surgical transition. Some attempt to transition medically outside of the public health system by sourcing cross-sex hormones on the internet and other non-medical suppliers, while others visit their GPs or endocrinologists to obtain medications rather than presenting to specialised gender clinics, often because of the onerous waiting times for an appointment and/or perceived or actual barriers to accessing treatment.

In the USA, the rate of self-identification as transgender doubled in 10 years from 12.5 (0.013%) (2002) to 23 (0.023%) per 100,000 (2011). The *Massachusetts Behavioral Risk Factor Surveillance Survey* found that 0.5% of the adult population aged 18 to 64 years identified as TGNC (transgender and gender nonconforming) between 2009 and 2011. By 2016, the estimated rate of the USA population identifying as transgender was 0.6% (i.e., 1.4 million people)¹ compared with 0.3% in 2011.² By 2017, self-reported transgender identity in children, adolescents and adults ranged from 0.5 to 1.3%, rates that are significantly higher than prevalence rates based on clinic-referred samples of adults³.

Attempts to estimate the true transgender population in the USA using meta-regression of 12 population-based probability samples (national surveys) conducted over the years 2007-2015 concluded by extrapolation that there were 390 per 100,000 (0.39%) transgender individuals in the US population. Given that more than 50% of the respondents were in younger age groups, (e.g., 18-31), the authors stated that it may be a more reliable estimate for younger transadults than for the population.⁴

Similar, more pressing difficulties have been encountered in identifying the “true” number of children and young people identifying as gender dysphoric under the age of 18 years in Australia. In the *New Zealand Adolescent Health Survey* (Youth 2012)⁵, a national, cross sectional, population-based survey

¹ Williams Institute, 2016, <https://williamsinstitute.law.ucla.edu/wp-content/uploads/CHIS-Transgender-Teens-FINAL.pdf>.

² Gates, G. (2011). How many people are lesbian, gay, bisexual, and transgender? Williams Institute <https://escholarship.org/content/qt09h684x2/qt09h684x2.pdf>

³ Zucker, K. J. (2017). Epidemiology of gender dysphoria and transgender identity. *Sexual Health*, 14(5), 404-411.

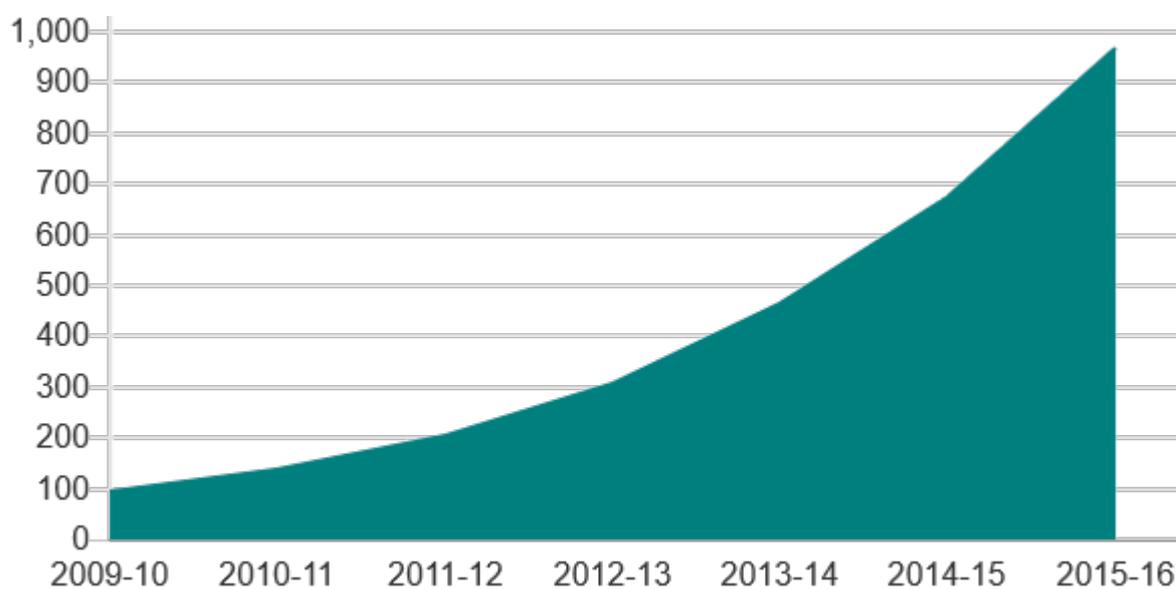
⁴ Meerwijk, E. L., & Sevelius, J. M. (2017). Transgender population size in the United States: a meta-regression of population-based probability samples. *American Journal of Public Health*, 107(2), e1-e8.

⁵ Clark, T. C., Lucassen, M. F., Bullen, P., Denny, S. J., Fleming, T. M., Robinson, E. M., & Rossen, F. V. (2014). The health and well-being of transgender high school students: results from the New Zealand adolescent health survey (Youth'12). *Journal of Adolescent Health*, 55(1), 93-99.

of 8,166 secondary school students, 1.2% (98) students reported being transgender, 2.5% (204 students) reported not being sure about their gender and 1.7% did not understand the question. Young people (n=719) in Finland aged 16-18 completed a survey using the GIDYQ-A (Gender Identity Disorder Youth Questionnaire) in 2012-2013 and the survey was replicated in 2017 on 1,007 young people. In the 2012 survey, 2.2% of males and 0.5% of females reported possibly clinically significant GD. In 2017, 3.6% males and 2.3% females reported possibly clinically significant GD⁶.

The Royal Children’s Hospital’s Gender Service, Melbourne reported a 250-fold increase in new referrals to their service between 2003 and 2017⁷ (from one to 250). A similar increase has been noted in the referral rates to the Tavistock Clinic in the UK⁸. The figure below shows the increases at Tavistock Clinic over the years 2007-2016.

Number of young people under 18 years of age referred to the Gender Identity Development Service



Source: The Tavistock and Portman NHS Foundation Trust (BBC, 2016)⁹

Figures from the Gender Identity Development Service (GIDS), which is the NHS’s only facility for children with gender dysphoria in the UK, showed that 84 children between three and seven years were referred in 2017, compared with 20 in 2012/2013. Referrals of children younger than 10 years of age showed a fourfold increase from 36 in 2012 to 165 in 2016⁸. In 2016, there were 2,016 referrals for children aged between three and 18 years, a six-fold increase from 314 five years previously. More than twice as many girls as boys are referred to such service. There has been a linear relationship between increasing media coverage, increasing stridence from the transactivist lobby and the

⁶ Kaltiala-Heino, R., Työläjäarvi, M., & Lindberg, N. (2019). Gender dysphoria in adolescent population: A 5-year replication study. *Clinical child psychology and psychiatry*, 24(2), 379-387.
⁷Telfer, M. (2018). Gender dysphoria in children and adolescents: An update on clinical practice, research and advocacy. <https://www.chnact.org.au/sites/default/files/Assoc.%20Prof.%20Michelle%20Telfer%20-%20Gender%20Dysphoria%20in%20Children%20and%20Adolescents.pdf>
⁸ <https://www.telegraph.co.uk/news/2017/07/08/number-children-referred-gender-identity-clinics-has-quadrupled/>
⁹ BBC (2016) <https://www.bbc.com/news/uk-england-nottinghamshire-35532491>

numbers of children and young people presenting to gender clinics around the world¹⁰ (BBC news, 2016). The Tavistock and Portman NHS Trust, the only gender treatment facility in the UK reported that the number of under-18s who visited the clinic between 2015 and 2016 had risen by 25% to 2,519.

Promotional material on the website of the Royal Children's Hospital (RCH) Melbourne claims that 1.2 percent of Australian school children (i.e., 45,000 children) "are thought to identify as transgender".¹¹ It is unknown whether this is an extrapolation from the New Zealand study. The *Australian Bureau of Statistics (ABS) Census of Population and Housing, 2016*, identified 1,260 adult individuals who stated that their sex/gender was other than male or female, a rate of 5.4 per 100,000 (0.0054%)¹². Of these 1,260 adults, 340 (27%) identified as either transmale (n=70), transfemale (n=100), or transgender (n=170), i.e., 1.5 per 100,000, a rate vastly smaller than the declared rates for children and young people by RCH, Melbourne. For example, a study by Quinn and colleagues¹³, reported that children and youth aged between three and 17 years constituted more than 20 percent of the transgender population.

To gain more clarity regarding the frequency of children seeking services for gender dysphoria in the Australian population of children and young people, more precise figures were sought from the key child and adolescent gender services around Australia.

METHOD

The data forming the basis for this study were obtained through Freedom of Information applications made in the four jurisdictions providing gender services to children in Australia by Greg Donnelly MLC, Parliament of New South Wales. As there were virtually no treatment facilities for children with gender dysphoria in Australia prior to 2014, the study period was identified as the five years between 2014 and 2018. Currently, there are four medical institutions offering services and these are listed below, together with their eligibility criteria.

1. The Lady Cilento Children's Hospital Gender Clinic and State-wide Service, Queensland

Eligibility: Children aged under 18 years, living in Queensland, seeking support with their gender identity, referred by local doctor/general practitioner.

2. The Children's Hospital Westmead Gender Clinic, Sydney

¹¹ Kids Health Info, The Royal Children's Hospital, Melbourne

https://www.rch.org.au/kidsinfo/fact_sheets/Gender_dysphoria/

¹²<https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/2071.0~2016~Main%20Features~Sex%20and%20Gender%20Diversity%20in%20the%202016%20Census~100>

¹³Quinn, V. P., Nash, R., Hunkeler, E., Contreras, R., Cromwell, L., Becerra-Culqui, T. A., . . . Goodman, M. (2017). Cohort profile: Study of Transition, Outcomes and Gender (STRONG) to assess health status of transgender people. *BMJ Open*, 7(12), e018121. doi: 10.1136/bmjopen-2017-018121

Eligibility: Children >9 years and/or displaying signs of puberty can be referred to Westmead Children's Hospital for gender dysphoria review; referred by GP, paediatrician, psychologist, or psychiatrist to the Adolescent Mental Health unit at Westmead Children's Hospital.

3. The Royal Children's Hospital Gender Service, Melbourne

Eligibility: Children and adolescents aged between three and 17 years of age with concerns about gender identity. Referral from GP required. Young people over the age of 17 years may access adult services (i.e., Monash Medical Centre Gender Clinic).

4. Perth Children's Hospital Gender Diversity Service, Western Australia

Eligibility: Any child or young person up to the age of 18, who resides in Western Australia, with concerns regarding their gender, gender non-conforming behaviour or gender dysphoria, can be referred to the Gender Diversity Service for consultation.

Three outcome measures were assessed, as follows:

- (i) Number of children and young people seeking treatment from gender clinics
- (ii) Number of children and young people receiving stage 1 treatment i.e., puberty blocking agents (PBA)¹⁴ [[gonadotropin-releasing hormone analogues](#) (GnRHa)]
- (iii) Number of children and young people receiving stage 2 treatment (cross-sex hormones) in each of the four gender clinics by year.

For each measure total numbers, percent total per state, and increase in incidence by year and state were calculated. Percentages of children seeking treatment for gender dysphoria and the proportion of children from the general population aged 5-19 years in WA, Qld, Vic and 10-19 in NSW were compared to ascertain possible over- and under-representation of children in each state seeking treatment or receiving stage 1 or stage 2 treatment were calculated using the chi-square test of proportions¹⁵.

RESULTS

(i) *Number of children and young people seeking treatment*

Over the five-year period 2014-2018, 2,415 children and young people were enrolled in one of these four gender clinics in Australia. Except for 2014, these numbers may not represent unique cases, because some children remain enrolled over consecutive years. Therefore, these figures are indicative only of the increase in numbers over the study period. These data are presented graphically by year and state (Figure 1).

¹⁴ [[gonadotropin-releasing hormone analogues](#) (GnRHa)]

¹⁵ https://www.medcalc.org/calc/comparison_of_proportions.php

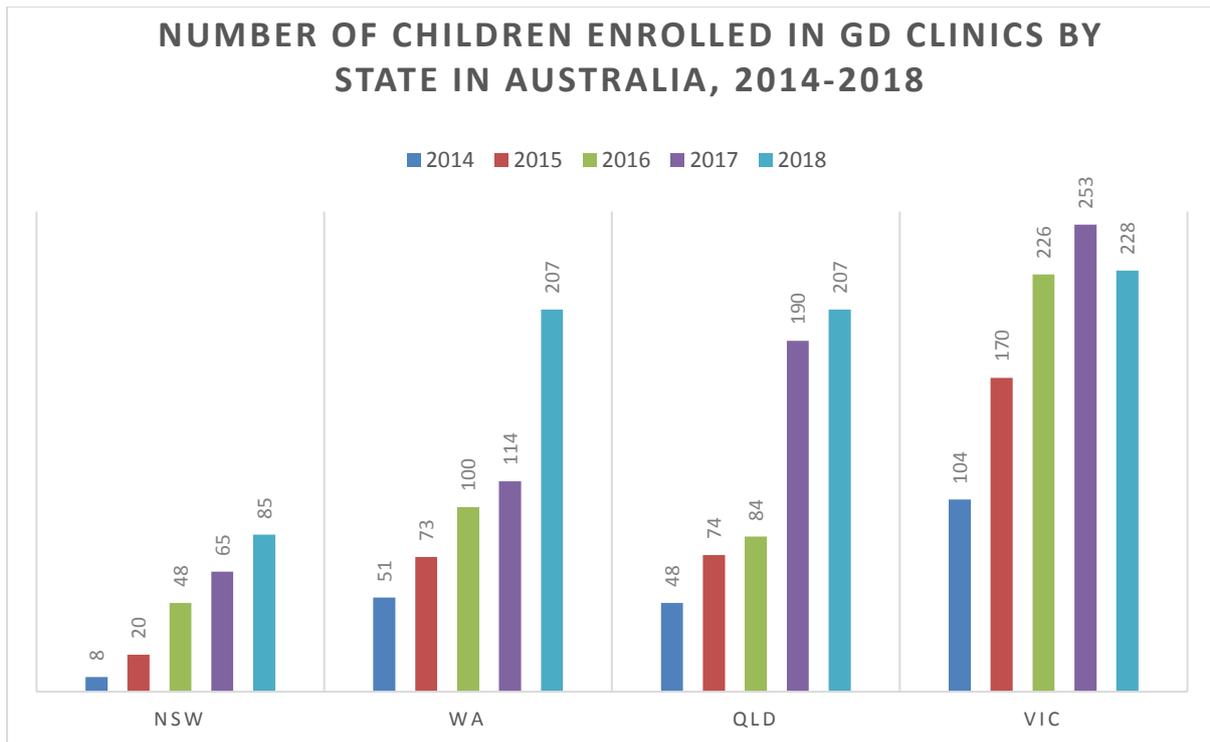


Figure 1

Figure 1 one shows that numbers of children and young people enrolled/seeking treatment for gender dysphoria over the five-year period 2014-2018 in each of the four states of Australia with gender clinics increased for each state but not uniformly. The absolute numbers for NSW were significantly lower compared with the other three states. Table 1 summarises the numbers by state and year, the total numbers for each year, the percent of young people attending in each state and the rate increase for each state.

Table 1 Number of children seeking services from gender clinics in four states of Australia and rate of increase since 2014.

	NSW	WA	Qld	Vic	Total
2014	8	51	48	104	211
2015	20	73	74	170	352
2016	48	100	84	226	486
2017	65	114	190	253	639
2018	85	207	207	228	727
Total	286	545	603	981	2415
% total per state	11.8	22.6	25.0	40.6	100
Rate increase (2018/2014)	10.6	4.0	4.3	2.2	11.4

The incidence of treatment seeking across the four clinics increased more than 11 times over the study period.

Table 2 shows the distribution of treatment seeking by state compared with the numbers of young people in the same age group taken from 2016 Australian Census¹⁶.

Table 2 Percentage of children seeking treatment for gender dysphoria and proportion of children from the general population aged 5-19 years in WA, Qld, Vic and 10-19 in NSW

	NSW	WA	Qld	Vic
Percent seeking treatment at GD clinics	11.8	22.6	25.0	40.6
Percent of population of children aged 5-19 years in WA and Qld, and aged 10-19 in NSW (N=3,334,946) ¹⁷	26.7	13.9	27.4	32.0
Number in population taken from 2016 Australian Census ¹⁸	891,434 ¹⁹	464,956	912,522	1,066,034

Although the population figures only provide an approximation of the population from which children presenting to GD clinics are drawn, the chi square comparison of proportions test identified disparities between expected and actual proportions. For NSW, the difference of -14.9% was significant (Chi-sq=273.5, df=1, p<0.0001; for Queensland, the difference of -2.4% was significant (Chi-sq=6.9, df=1, p<0.008) indicating under representation; for WA, the difference of +8.7% was significant (Chi-sq=151.5, df=1, p<0.0001; for Victoria the difference of +8.6% was significant (Chi-sq=81.9, df=1, p<0.0001) indicating over representation.

(ii) **Number of children and young people receiving stage 1 treatment i.e., puberty blocking agents (PBA)**

Figure 2 shows numbers of children and young people receiving puberty-blocking agents in these four gender clinics over the five-year period 2014-2018 in each of the three states of Australia [Note: Victoria failed to provide these figures]. Figures rose sharply for Queensland but not for the other two states for which figures were available.

¹⁶ <http://www.abs.gov.au/websitedbs/D3310114.nsf/Home/2016%20search%20by%20geography>

¹⁷The total number of children aged five to 19 years in each of these four states of Australia was 3,813,130. In NSW, there were 1,369,618 young people aged between five and 19 years, 36% of the total. In Western Australia, there were 464,956 young people aged between five and 19 years, 12.2% of the total. In Queensland, there were 912,522 young people aged between five and 19 years, 23.9% of the total. In Victoria, there were 1,066,034 young people aged between five and 19 years, 28% of the total. The denominator is smaller for NSW because children must be >9 years to be referred to a gender service. N=891,434 represents the age groups 10-14 and 15-19 years in the Census. Hence, population proportions were adjusted to account for the reduction in numbers in NSW.

¹⁸ <http://www.abs.gov.au/websitedbs/D3310114.nsf/Home/2016%20search%20by%20geography>

¹⁹ The Australian Bureau of Statistics presents age data in four-year blocks, 0-4, 5-9, 10-14, and 15-19. Because most gender clinics have an upper age limit of 18 years, these figures represent a small over-estimation of the population from which children presenting with gender dysphoria are drawn.

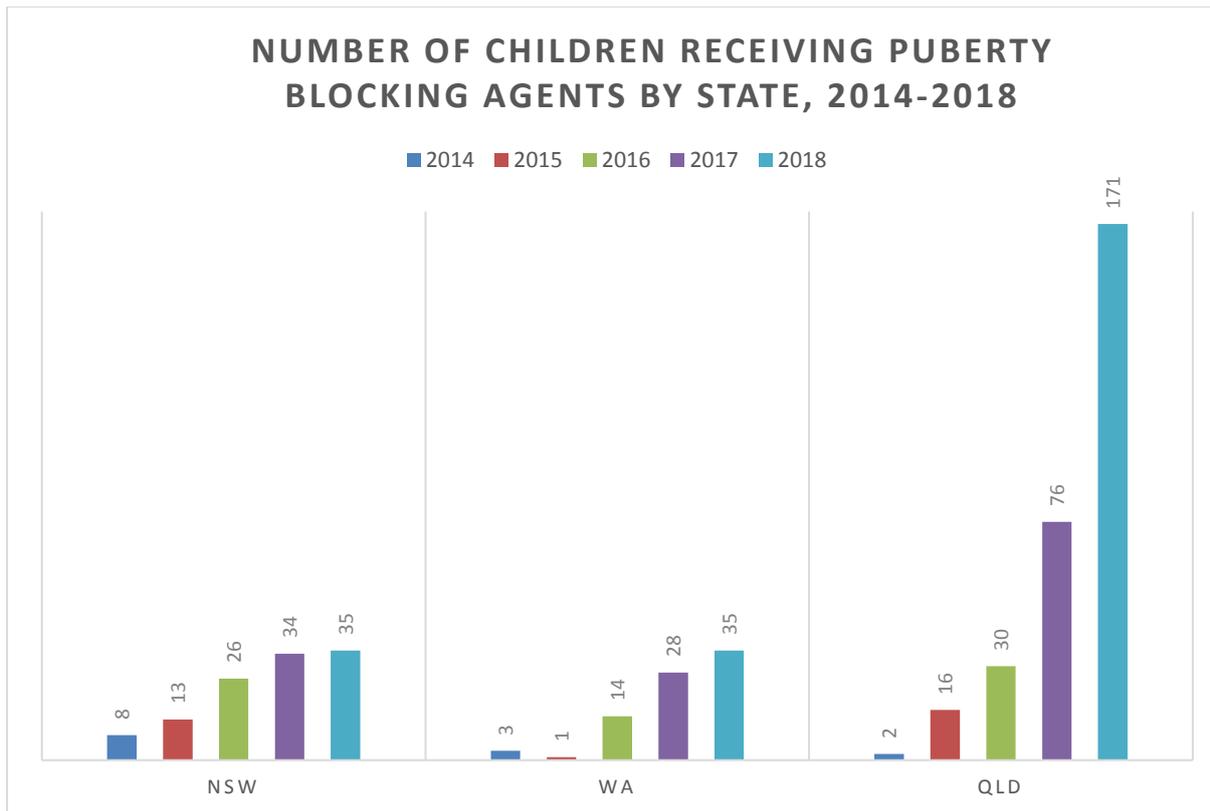


Figure 2

Note 1: Figures for Victoria 2018 were not provided

Note 2: Figures for Queensland are based on Queensland Children’s Hospital (QCH) pharmacy reports only. They do not include young people accessing medication outside the QCH pharmacy. Hence, these figures are an under-representation of the true number receiving cross-sex hormones. This may also be the case in other states; they do not include children receiving GD treatments through the private health system.

Over the five-year period 2014-2018, 492 children and young people were receiving puberty blocking agents (stage 1 treatment) from these three gender clinics in Australia (Victoria did not supply figures). Victoria (see Table 3) provided the numbers of young people who commenced on puberty-blocking agents in four of the five years requested, as follows:

Table 3 Number of young people commenced on puberty blockers in Victoria by year²⁰

2014	2015	2016	2017	2018
14	12	17	16	Not supplied

Table 4 presents the total numbers of young people receiving puberty blockers by state (NSW, WA, Qld) and year.

²⁰ It may be the case as for NSW, that the RCH, Melbourne, treats only a small number of young people with stage 2 drugs, referring the majority to adults clinics or private specialists where they are not counted and are lost to follow-up.

Table 4 Number of children receiving puberty blocking agents (stage 1 treatment) from gender clinics in three states of Australia 2014-2018.

	NSW	WA	Qld	Total
2014	8	3	2	13
2015	13	1	16	30
2016	26	14	30	70
2017	34	28	76	138
2018	35	35	171	241
Total	116	81	295	492
% total per state	23.6	16.5	60.0	100
Incidence increase by state (2018/2014)	4.4	27.0	85.5	

Table 5 compares the proportions on PBA by state with population proportions.

Table 5 Percentages of children taking puberty blocking agents for gender dysphoria and proportion of children from the general population aged 5-19 years in WA, Qld, Vic and 10-19 in NSW

	NSW	WA	Qld	Vic
Percent of total on puberty blocking agents (N=492)	23.6	16.5	60.0	Not supplied
Percent of population of children aged 5-19 years in WA and Qld, and aged 10-19 in NSW (N=3,334,946) ²¹	26.7	13.9	27.4	32.0
Number in population taken from 2016 Australian Census ²²	891,434 ²³	464,956	912,522	1,066,034

The chi square comparison of proportions test identified disparities between expected and actual proportions. For NSW, the difference of -3.2% was not significant (Chi-sq=2.6, df=1, p<0.12; for WA, the difference of +0.4% was not significant (Chi-sq=0.07, df=1, p<0.79; for Queensland, the difference of +24.6% was significant (Chi-sq=149.5, df=1, p<0.0001). Queensland is significantly proportionately disparate from the other two states, i.e., it has 2.2 times the number of young people taking PBA than expected from the population.

²¹ Denominator smaller for NSW because children must be >9 years to be referred to a gender service in NSW. N=891,434 represents the age groups 10-14 and 15-19 years in the Census.

²² <http://www.abs.gov.au/websitedbs/D3310114.nsf/Home/2016%20search%20by%20geography>

²³ The Australian Bureau of Statistics presents age data in four-year blocks, 0-4, 5-9, 10-14, and 15-19. Because most gender clinics have an upper age limit of 18 years, these figures represent a small over-estimation of the population from which children presenting with gender dysphoria are drawn.

(iii) Number of children and young people receiving cross sex hormones in each of the four gender clinics by year

Over the five-year period 2014-2018, 286 children and young people were commenced on cross-sex hormone (stage 2) treatment at one of these four gender clinics in Australia.

Figure 3 shows the number of children in each of the four gender clinics who were receiving cross-sex hormones (stage 2) over the study period in each state.

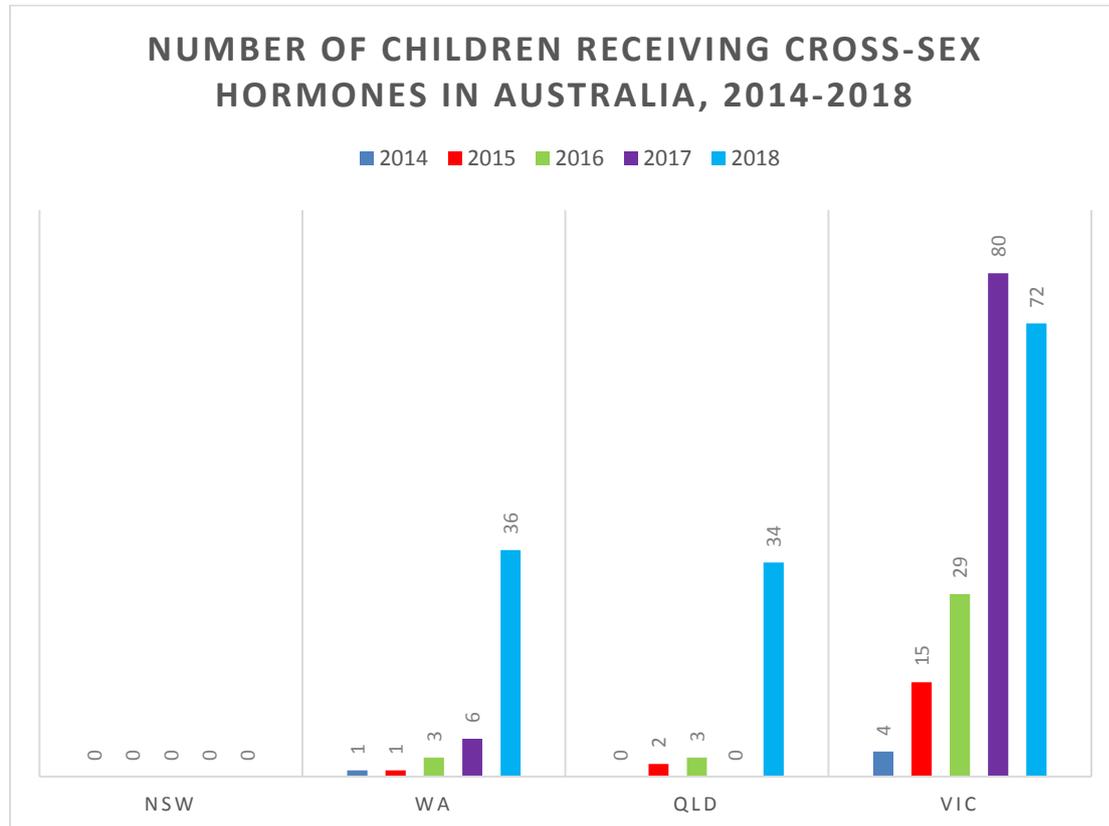


Figure 4

Note 1: NSW supplied “0” in each data cell for each of the five years. A follow-up inquiry to Sydney Children’s Hospital Network (Ref No: SCHN18/7854, 6/8/19) indicated “Sydney Children’s Hospitals Network (SCHN) does not and has not initiated stage 2 Gender Dysphoria treatment at The Children’s Hospital at Westmead. [O]ccasionally SCHN sees a patient in a cross-over transition phase who has had stage two treatment initiated by an adult physician, as The Children’s Hospital at Westmead pharmacy is still providing the patient’s treatment in that cross-over phase. However, their primary care at this stage is under the adult physician who prescribes the stage two therapy. I can confirm that the zero response provided in the GIPA Notice of Decision is correct but that there may be instances in which children are receiving active stage 2 treatment elsewhere while still attending The Children’s Hospital at Westmead clinic”.

Note 2: Figures for Queensland are based on Queensland Children’s Hospital (QCH) pharmacy reports only. They do not include young people accessing medication outside the QCH pharmacy. Hence, these figures are an under-presentation of the true number receiving cross-sex hormones from QCH.

Note 3: Figures for Victoria 2018 extrapolated from Victoria 2017 figures

Table 6 summarises the numbers by state and year, the proportions from each state and the increase in incidence from 2014 to 2018.

Table 6 Number of children receiving cross-sex hormones (stage 2 treatment) from gender clinics in four states of Australia 2014-2018.

	NSW	WA	Qld	Vic	Total
2014	0	1	0	4	5
2015	0	1	2	15	18
2016	0	3	3	29	35
2017	0	6	0	80	86
2018	0	36	34	72	142
Total	0	47	39	200	286
% total per state	0	16.4	13.6	70.0	100
Incidence increase by state (2018/2014)	0	36	34	18	

The gender clinic in NSW did not count any young person proceeding to stage 2 treatment, explaining that those who did progress to stage 2 (cross-sex hormones) treatment were referred to adult services or private endocrinologists. These numbers are needed to further our understanding about the paths taken by young people exiting children’s services following stage 1 treatments.

In the other three states, there were sharp increases in the numbers of young people undergoing stage 2 treatment. For WA and Queensland, this occurred only in 2018; in Victoria this occurred in 2017, with a slight decline in numbers in 2018.

DISCUSSION

This paper presents available data on the numbers and patterns of referral to the four gender clinics for children and young people in Australia, and the number of children who were receiving stage 1 or stage 2 gender transition treatments during the study period (2014-2018). The dramatic increases in the number of children seeking services (between two and 11-fold increases over the five-year study period) concur with overseas data that also show sharp increases in referrals.

These data significantly under-represent the actual numbers of children receiving some form of treatment for gender dysphoria, given that only four of seven states have gender clinics and could supply data. Not all the available data were supplied from these, so even these data are incomplete. The numbers of children being treated for gender dysphoria in South Australia, Tasmania, Northern Territory and Australian Capital Territory could not be ascertained and could not therefore be included.

Despite this under-representation of actual cases of gender dysphoric young people seeking treatment, these estimates are discrepant from the number of adults identifying as transgender in the

ABS Census of Population and Housing, 2016, from which population comparisons were accessed for this study. In that census, only 340 adults across Australia identified as transgender.

The four states from which data were collected showed significant differences in treatment patterns. What could account for the anomalies observed in these data between the four states?

One explanation for the lower enrolled/treatment-seeking numbers in NSW over the five-year study period is that NSW only accepts children older than nine years of age, compared with the other three states that either set no lower age limit for referral (Queensland and Western Australia) or set it at three years of age (Victoria). This is not a robust explanation as it would be unlikely that large numbers of children under the age of nine or 10 would be presented to such clinics. The other possible explanation is that some states are more meticulous in their initial assessment of the child and hesitate to conclude that the child requires gender affirming treatment before a thorough individual and family assessment has been undertaken to exclude those with other conditions that need to be treated. This may account for the lower numbers in NSW, the largest and most populous state in Australia.

What can explain the discrepancy in the number of children treated with puberty-blocking agents between Queensland and the other states offering gender services? It is highly unlikely that there would be actual differences in the incidence of gender dysphoria in children living in Queensland compared with children living in NSW or Western Australia. Possible explanations include differences in ideology, criteria for treatment, strong adherents to gender affirming treatment in the Queensland gender service and/or more socio-political pressure on treating practitioners in Queensland compared with other states.

Similarly, figures in Victoria showing 70 times increase over the study period of young people receiving cross-sex hormones is of great concern and requires urgent investigation. Given the relatively small numbers commencing on puberty-blockers in each year of the study period, the data suggest that those attending the Victorian service may be older, post-pubertal adolescents who are referred to other treatment facilities for their cross-sex hormones where they are not counted and are lost to follow-up.

Of equal interest is the large numbers of young people in Queensland who have been placed on puberty-blocking agents and the relatively small number on cross-sex hormones. Do the majority of these children desist from progression to cross-sex hormones or are they referred elsewhere for stage 2 treatments, which is the case for NSW and appears to be the case for Victoria? If the former, these results are in stark contrast to overseas research showing that once children commence puberty-blocking agents, most proceed to cross-sex hormones.²⁴ If the latter, obtaining accurate numbers of those referred elsewhere for stage 2 treatments need to be recorded and made available to the research community and the public.

Sadly, these data stimulate many more questions than answers about the demographic of this population across the four states as well as the treatment protocols in each state that may affect how treatment is decided and delivered. They represent a first attempt to systematize data gathering in gender dysphoria treatment in young people in Australia. It has been difficult to obtain reliable

²⁴ De Vries, A. L., Steensma, T. D., Doreleijers, T. A., & Cohen-Kettenis, P. T. (2011). Puberty suppression in adolescents with gender identity disorder: A prospective follow-up study. *The Journal of Sexual Medicine*, 8(8), 2276-2283.

information from the gender clinics and these data are necessarily incomplete because of a failure to supply the requested information in some cases or receiving inaccurate or ambiguous information in others. These data should therefore be treated as incomplete and preliminary. They are presented to stimulate concern and debate about the efficacy of such life-altering treatments for young people.

There is no doubt that the transactivist lobby has been spectacularly successful in their campaign²⁵ to assert transgender rights and many in medicine²⁶, social policy, the media and the law have succumbed to their pressure to conform to a gender-affirming ideology without adequate evidence to support its application²⁷. These forces are no doubt at play in the pattern of numbers we see in this paper.

²⁵ Iyengar, R., Van den Bulte, C., & Valente, T. W. (2011). Opinion leadership and social contagion in new product diffusion. *Marketing Science*, 30(2), 195-212.

²⁶ Bizic, M. R., Jeftovic, M., Pusica, S., Stojanovic, B., Duisin, D., Vujovic, S., ... Djordjevic, M. L. (2018). Gender Dysphoria: Bioethical Aspects of Medical Treatment. *BioMed research international*, 2018, 9652305. doi:10.1155/2018/9652305<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6020665/>

²⁷ Marchiano, L. (2017). Outbreak: On transgender teens and psychic epidemics, psychological perspectives, 60:3, 345-366, DOI: 10.1080/00332925.2017.1350804
<https://www.tandfonline.com/doi/pdf/10.1080/00332925.2017.1350804>