

# Increasing rates of people identifying as transgender presenting to Endocrine Services in the Wellington region

John W Delahunt, Hayley J Denison, Dalice A Sim, Jemima J Bullock, Jeremy D Krebs

## ABSTRACT

**AIMS:** Overseas clinics specialising in management of transgender people have noted a marked increase in the numbers of people requesting therapy in the last few years. No data has been presented for New Zealand. We therefore reviewed the number of transgender people seen in the Wellington Endocrine Service to assess if the pattern was similar and assess any potential problems for service delivery.

**METHODS:** Using hospital records, we reviewed the new appointments of people who were referred for advice on gender reassignment and seen in the Wellington Endocrine Service from 1990 to 2016.

**RESULTS:** In total, 438 people who identified as transgender attended the clinic at least once in this period. There has been a progressive increase in number of people identifying as transgender presenting to the clinic, particularly since 2010. In addition to increasing overall numbers, there has been in particular increase in referrals for people under age 30, as well as an increasing proportion of people requesting female-to-male (FtM) therapy so that it is now approaching the number of people requesting male-to-female therapy (MtF).

**CONCLUSION:** The pattern observed is comparable to changes reported overseas. These changes have practical consequences for the delivery of both secondary and primary level healthcare, requiring an increased focus on clinical coordination between the relevant medical services and their links to the primary services sector.

The sense of gender identity develops separately to sexual orientation and the external genitalia, and develops to differing degrees between individuals.<sup>1-3</sup> Neuroanatomic (nervous system structures including brain anatomy) differences between genders develop at an early age and are reinforced by behavioural and endocrine changes in childhood and adolescence.<sup>4</sup> There is also evidence of genetic contribution to gender behaviours.<sup>5</sup>

Transgender is a term used to describe when an individual's sense of gender identity does not correspond with their birth sex. Gender affirmation treatment may include hormone therapy and gender affirming surgery to develop the physical characteristics of the affirmed gender, and

guidelines for assessment and treatment are available.<sup>6</sup> The 'non-binary' nature of gender identity is well recognised; not all people with feelings of gender incongruence identify completely with a single gender role, and may not want medical or surgical therapy.<sup>7,8</sup>

Initial estimates of the prevalence of people identifying as transgender were taken from the experience of specialist transgender clinics internationally. They provided estimated rates in the order of 1/37,000 of the general population for male to female (MtF) and 1/100,000 for female to male (FtM), and an annual incidence of people who identified as transgender of about 0.15/100,000 population.<sup>3,9</sup>

More recently, population surveys have suggested a much higher and increasing incidence of transgender identity in adults and adolescents.<sup>10,11</sup> A telephone survey of households in Massachusetts found 0.5% of 28,000 respondents identified themselves as transgender.<sup>12</sup> Data from the American Behavioral Risk Factor Surveillance System (BRFSS) taken from 19 States and one Territory in 2014 found 0.53% of their population identified as transgender (95% confidence intervals 0.46, 0.61) with MtF 0.28%, FtM 0.16%, 'gender nonconforming' 0.08%.<sup>13</sup> Kuyper et al analysed data from an online Dutch Sexual Health population study conducted in 2012.<sup>3</sup> There were 8,064 participants aged between 15 and 70 years included in the gender assessment analysis. Of the natal men (people who were assigned male at birth), 1.1% had gender incongruence (with a stronger identification with the cross-natal gender) while 4.6% were ambivalent towards their natal gender (having an equal identity between the two genders). Of the natal women, 0.8% were gender incongruent, 3.2% gender ambivalent. A fifth of those who were ambivalent about their gender also disliked their body but only one half of these natal men and a quarter of these natal women wanted therapy to change their appearance.<sup>3</sup>

There has not been a formal study of the prevalence of transgender identity in the general or adolescent population in New Zealand.<sup>11,14</sup> However, the Youth '12 survey of 8,166 teenagers in Auckland included a question on sense of gender. Overall, 1.2% reported being transgender, 2.5% reported being not sure about their gender and 1.7% reported that they did not understand the question.<sup>15</sup> Other than this study, there are few data on the prevalence of people identifying as transgender in New Zealand, and no indication as to whether the prevalence is increasing as it is in other countries. Statistics New Zealand is proposing to introduce items related to gender identity in the 2018 census questionnaire.<sup>16</sup> We were aware of an increase in referrals in Wellington. The aim of this study was to examine the temporal trends in referral patterns for transgender in the greater Wellington region and identify any potential problems for service delivery.

## Method

We reviewed the new appointments of people who were referred for advice on gender reassignment hormone therapy and seen in the Wellington Endocrine Service for Capital & Coast District Health Board (DHB) from January 1990 to the end of 2016. These included people referred from outside the Capital & Coast DHB region, principally from the adjacent Hutt Valley DHB. Data from an in-house audit of transgender referral numbers indicates that around a quarter of people were referred from the Hutt Valley DHB and less than 5% were referred from other regions.<sup>17</sup> We did not include people from the Hutt Valley who are managed in their local Endocrine service, though this number will be small. The combined Wellington and Hutt Valley population is about 470,000.<sup>18</sup>

People who identified as transgender and attended the Wellington Endocrine Service were identified by separate methods over three time-periods. This was primarily because of changes in patient record systems over the 26-year time period (paper to electronic). Prior to 2006, the Wellington Endocrine Service kept paper records of all outpatient appointments on site. The clinic consultant (JWD) and a charge nurse independently extracted the relevant data using these outpatient lists and matched these to the confidential files.

In June 2006 a new patient management IT system was introduced, and so for the next period (June 2006 to May 2013) relevant records were identified from the patient management software records using the key words: 'gender'; 'gender' with descriptors (assessment, reassessment, identity, etc), specifically 'gender dysphoria', 'transgender', 'transexual', 'transsexual', 'transvestite' and these words repeated as nouns ('-ism'). The results were cross-checked with the Endocrine clinic confidential record folders which had been kept for transgender outpatients. The few additional records found were included in the data extraction.

A prospective record of referrals has been kept separate from the hospital electronic files from January 2013. These have been used to complete the study period.

People who identified as transgender were recorded for their first visit, or year of referral if seen in the following year. Due to increased numbers, some people referred in 2015 were not seen until 2016, and some referred in 2016 were seen in 2017. For those people who had been referred but not seen in the current year, age was calculated for the day of referral, not the day of appointment.

We classified each person as seeking endocrine treatment for ‘male-to-female’ (MtF) or ‘female-to-male’ (FtM) change. This includes individuals who were not seeking complete gender transition, and who may identify as ‘non-binary’. All people attending for

hormone therapy to modify their biological sex, or help support their awareness of self in a cross gender identity, were included. We have not included data on ancillary diagnoses or the outcome of therapy.

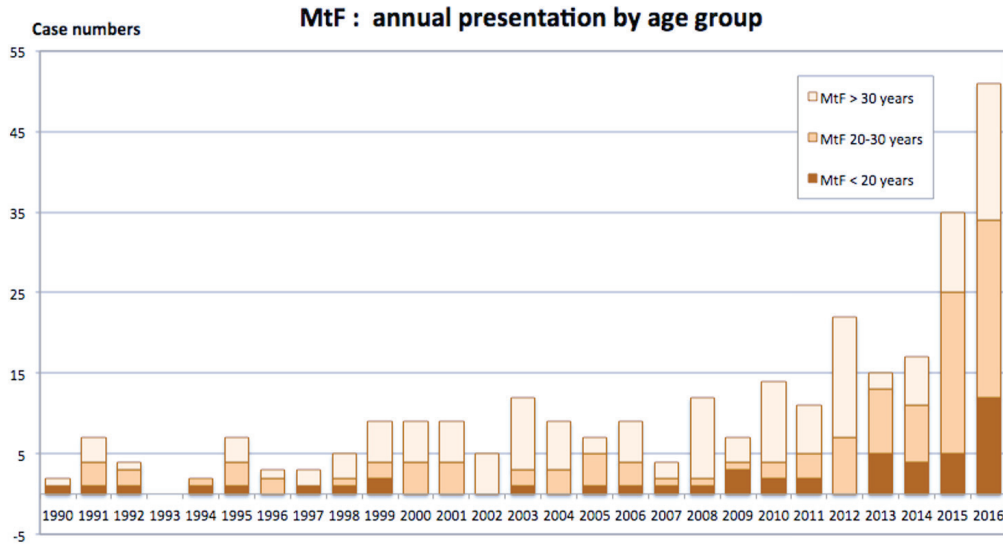
## Results

The number of people who identified as transgender presenting to Endocrine outpatients for each year is given in Table 1 and Figure 1. In total, 438 people who identified as transgender attended the clinic at least once over the interval 1990 to end of 2016 (Table 1).

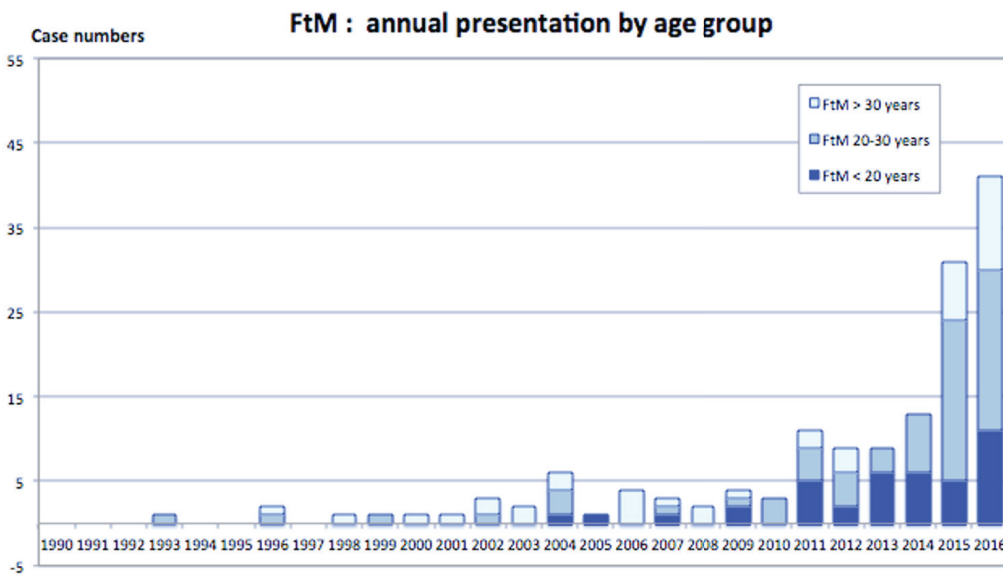
**Table 1:** Number of people identifying as transgender presenting to the Wellington Endocrine Service each year (1990 to end of 2016).

Year	Male to female				Female to male				Total N
	N	Median age	Minimum age	Maximum age	N	Median age	Minimum age	Maximum age	
1990	2	27.9	19.3	36.4	0	-	-	-	2
1991	7	23.8	19.5	48.4	0	-	-	-	7
1992	4	20.7	17.5	37.7	0	-	-	-	4
1993	0	-	-	-	1	29.5	-	-	1
1994	2	22.2	17.7	26.7	0	-	-	-	2
1995	7	27.9	18.1	44.9	0	-	-	-	7
1996	3	29.3	21.7	31.9	2	27.0	23.1	30.9	5
1997	3	36.0	18.9	53.6	0	-	-	-	3
1998	5	30.6	14.0	41.5	1	34.2	-	-	6
1999	9	31.1	14.3	44.4	1	29.6	-	-	10
2000	9	30.2	25.6	58.4	1	30.1	-	-	10
2001	9	32.8	25.7	53.5	1	47.0	-	-	10
2002	5	33.9	31.4	53.9	3	30.4	24.1	39.1	8
2003	12	44.6	17.4	59.9	2	37.5	30.6	40.7	14
2004	9	31.8	24.7	57.4	6	27.8	13.7	35.2	15
2005	7	27.6	16.6	59.2	1	18.5	-	-	8
2006	9	30.6	19.5	61.7	4	42.0	30.5	41.8	13
2007	4	36.9	18.7	63.8	3	25.7	18.3	43.9	7
2008	12	37.4	11.6	61.5	2	36.7	35.3	38.1	14
2009	7	23.6	14.2	66.3	4	22.5	18.7	34.8	11
2010	14	36.8	16.3	59.6	3	21.3	20.1	24.0	17
2011	11	30.3	16.6	60.5	11	20.4	15.9	34.7	22
2012	22	32.0	20.3	60.8	9	26.9	18.9	50.3	31
2013	15	20.8	16.2	38.4	9	19.3	13.6	28.0	24
2014	17	24.9	15.4	47.2	13	20.2	16.8	29.8	30
2015	35	24.0	15.2	53.7	30	24.5	15.7	56.3	65
2016	51	25.6	17.4	51.0	41	22.1	17.3	45.5	92
<b>Totals</b>	<b>290</b>				<b>148</b>				<b>438</b>

**Figure 1A:** People identifying as seeking male-to-female hormone therapy in each year 1990 to 2016, inclusive.



**Figure 1B:** People identifying as seeking female-to-male hormone therapy in each year 1990 to 2016, inclusive.



Since about 2000, and particularly since 2010, there has been a progressive increase in the number of people identifying as transgender presenting to the clinic (Figure 1A and 1B). This pattern is observed for both groups (MtF and FtM). In 2000 to 2007, annual first attendance rates were between eight and 15 people who identified as transgender. In 2016, the total number of referrals of people who identified as transgender totalled 92 (51 MtF, 41 FtM).

In addition to increasing overall numbers, there has been a particular increase in referrals both for people who identified as transgender under age 20 and for those in the middle age bracket (20 to 30 years) (Figures 1A and 1B). While there had been a variable increase in the absolute numbers for each age bracket, including a similar trend for those older than 30, the proportion of people who were in the oldest age group became less for each year. Specifically

considering referrals for people less than age 18, prior to 2012 there had been 12 MtF, five FtM cases and after 2011 there were eight MtF and seven FtM.

These data are further summarised in Table 2. In absolute and percentage terms for the proportions of subjects in each age group, the greatest increase was in the combined young adult (20 to 30 years) groups. To assess if there was a significant change in age of people presenting, a time point of 31 December 2011 was chosen around which to compare the data. The proportions of people in each age group are statistically significantly different between the time periods, as assessed by Pearson's Chi squared tests (Table 2). Repeated analyses using the proportions around the previous two and subsequent one year did not significantly change the statistical results (data not shown).

Prior to 2002, few people presenting to the Endocrine service identified as FtM

(about one person each year). This was lower than the number of people who identified as MtF presenting each year (around five people). Between 2002 and 2009, this number began to increase so that there were about one to four people who identified as FtM annually. Since 2012, there has been a proportionately greater increase in the number of people who identified as FtM, now approaching the number of people identifying as MtF, with the ratio over the previous five years now 1.37:1.

These numbers represent a small component of a general endocrine new patient clinic case numbers in Wellington. Over the period 2006 to 2013, 2.8%, of new Endocrine referrals were for transgender outpatients.<sup>17</sup> In 2016, 6.8% of new people who identified as transgender seen in Endocrine outpatients (excluding diabetes) were attending for gender reassignment hormone therapy.

**Table 2:** Age-groups of people presenting to the Wellington Endocrine Services before and after 31 December 2011.

Age group	Time period n (%)		Chi-squared statistic (df)	p value
	Before 2012	2012 and after		
<b>MtF and FtM combined</b>			28.598 (2)	<0.001
<20 years	30 (15.4)	56 (23.1)		
20–30 years	59 (30.3)	116 (47.9)		
>30 years	106 (54.4)	70 (28.9)		
<i>Total</i>	<i>195</i>	<i>242</i>		
<b>MtF only</b>			15.568 (2)	<0.001
<20 years	20 (30.4)	26 (18.4)		
20–30 years	43 (28.9)	66 (46.8)		
>30 years	86 (57.7)	49 (34.8)		
<i>Total</i>	<i>149</i>	<i>141</i>		
<b>FtM only</b>			8.094 (2)	0.017
<20 years	10 (21.7)	30 (29.7)		
20–30 years	16 (34.8)	50 (49.5)		
>30 years	20 (43.5)	21 (20.8)		
<i>Total</i>	<i>46</i>	<i>101</i>		

MtF = male-to-female.  
FtM = female-to-male.

## Discussion

Our study is the first to assess trends in transgender presentation to an endocrine service in New Zealand, and thus contributes new data to the international discussion. Our results demonstrate increase in the number of people identifying as transgender presenting to services for treatment, particularly among the young adult age-group, as well as an increasing proportion of FtM persons. The increasing numbers of transgender and non-binary young people has significant implications for health-providers involved with the care of these individuals, particularly with regard to expertise, experience and access to training, for this age group.<sup>19</sup>

An increasing rate of presentation at younger ages and a change in the proportion of people presenting as MtF and FtM has been recognised in major centres overseas.<sup>20,21</sup> Leinung et al reviewed their experience in New York with 140 transgender people, finding a stepwise increase in referrals over the three five-year intervals with an increase in FtM proportion. There was a reducing age at referral from a median age of 40 years initially to 30 years in 2009, with the details of scatter of ages not listed.<sup>22</sup> Judge et al reported on their clinic experience in Ireland from 2005 to 2014 with 218 patients showing a pattern comparable to our own, with an increase in referrals year on year, from six people who identified as transgender in 2005 to 55 in 2013.<sup>23</sup>

Specialist clinics for transgender children and adolescents have included Aitken et al who reported results from two clinics (in Toronto and in Amsterdam).<sup>24</sup> There were 748 people who identified as transgender in all, with annual referrals increasing progressively from about 2003 to 2013. There was also a change in the proportions of MtF and FtM people, with a MtF preponderance before 2006 and a FtM preponderance over 2006–2013. Wood et al also reported an increase in referrals to a specialist child and adolescent psychiatry clinic in New York.<sup>25</sup>

While other studies have found an increase in adolescent individuals presenting, we are not aware of comparable data showing an increase in presentation in young adults (the 20 to 30 age group). The people in this age group include a few established transmen and transwomen who have

moved to Wellington from other regions. The other people newly presenting may represent a group of adolescents who have delayed their decision to seek help, or reflect a general increase in referrals from all ages.

Although we have detected an obvious rising trend in the number of people who identify as transgender presenting to our services, we cannot predict the future incidence of case presentation. The prevalence of self-reported transgender identity among teenagers suggests there will be a continuing increase of individuals requesting advice or hormone therapy.<sup>15</sup> The recently reported Statistical Standard for Gender Identity proposed by Statistics New Zealand will provide local and national perspectives on this data in the future.<sup>16</sup> It is important to bear in mind that a significant proportion of adults with gender ambivalence or gender incongruence will not seek hormone or surgical therapy.<sup>3</sup>

We did not study specific factors which have contributed to the change reported here. However, we can speculate on some probable contributing factors, some which are relevant internationally, and some which are specific to the Wellington Endocrine Services.

First, increasing presentation to services of people who identify as transgender seems likely to be related to the increasing societal awareness and acceptance of gender diversity.<sup>20</sup> In addition, many people who identify as transgender attending our service report spending time searching the internet prior to referral, accessing mainstream information, others' experiences, and many have linked with other people who identify as transgender through internet discussion and support groups. Access to the internet and discussion with peers may affirm a sense of transgender identity, improve understanding regarding options and increase confidence, leading to requests for physical transition options.

It seems likely there is also an increasing awareness that a change of gender appearance is a practical option with hormone therapy. Some people may not be able to express their gender with confidence or safety without the benefits of hormone. Consequently, the previous requirement for a duration of 'real-life-experience' is no longer reinforced.<sup>9</sup> Hormone therapy allows individuals to make a physical transition

towards their affirmed gender at a time of their choosing, potentially minimising some of the social difficulties of transition. While the stages and doses of transgender hormone therapy should be adjusted for an individual's requirements, endocrine therapy itself now has few difficulties.<sup>26-28</sup>

Since 2004, the primary sector has developed specialised general practises for adolescents, both in Wellington (2004) and the Hutt Valley (1996 then 2005). These provide counselling, support and group discussion for teenagers. Referral to the Endocrine Service has been a recognised, further step in management. There is also a drive for some GPs to receive specialist training in this field, to prescribe hormones therapy at the primary health level, with guidance from endocrinologists.

Historically, the Endocrinologists in Wellington have been prepared to accept referrals for consideration of hormone therapy in adults without assessment from a mental health professional,<sup>9</sup> because resource constraints limited access to such assessments within the public health system. This was restricted to adults with a long-standing sense of gender incongruence. Generally they were started on a trial of low-dose hormone therapy pending a more formal psychosocial evaluation, when, and if, this became warranted.<sup>17</sup> Data from our previous survey of clinicians in New Zealand suggests that this approach was not nationwide.<sup>29</sup> Therefore, it may have resulted in disproportionately increased referrals in comparison. Data from other clinics in New Zealand would give an indication of whether these factors have influenced the increasing trend in presentation observed. Due to the exponential rise in referral rates to the Wellington Service, and changes in personnel including the recruitment of a clinical psychologist, the referral pathway has now been adjusted, including a comprehensive psychosocial assessment conducted within the Unit, prior to initiating hormone therapy.

The rising presentation of gender dysphoria and the complexities of issues faced by these individuals added to the increasingly younger age of presentation warrant development of multidisciplinary services, which should include primary

care teams, mental health professionals, secondary endocrine, paediatric and ultimately a range of surgical specialists.<sup>20</sup> Currently there is limited access to surgical services in the public sector in New Zealand and access to publicly-funded psychological assessment appears to vary by region, adding to the difficulties faced by individuals who identify as transgender seeking treatment.<sup>29</sup>

Decision making through the time of adolescence may not be equivalent to that in older people and may possibly respond to social context to a greater extent.<sup>7,14,31-32</sup> Given that gender identity may alter or evolve over time, the therapeutic pathways which were developed for older transgender subjects may need revision for the teenage population.<sup>21,33</sup> Transgender youth are at a higher risk for poor psychosocial health than their non-transgender peers. Numerous studies have found that transgender youth have a higher prevalence of behavioural and emotional problems, including anxiety, depression, self-harm and suicide than is expected in the general population.<sup>21,34-37</sup> Access to psychosocial services is therefore crucial for providing holistic and comprehensive care for these individuals.<sup>33</sup> In general, published studies discuss the recognised satisfactory outcomes for teenagers and adults in transgender programmes but do not provide data on people who might be counselled to defer transition, or who stop or are intermittently compliant on hormone therapy. Further, it is important to be aware that at present, developmental trajectories for transgender youth are not yet well understood due to the lack of robust research,<sup>14,21</sup> and in providing a gender-affirming model of care we should not assume that individuals are necessarily seeking a complete gender change.<sup>8</sup> While many gender non-conforming young people with or without gender dysphoria will go on to be transgender or have gender dysphoria as adults, others, particularly those presenting before puberty, will not.<sup>14,38,39</sup> A better understanding of what may predict or influence these developmental trajectories is needed to aid clinicians in their treatment recommendations.<sup>14</sup> A prospective audit of the outcome of transgender management in adolescents at, probably, five and 10 years also seems advisable.<sup>40</sup>

## Limitations

We have no direct knowledge of the referral patterns in the other regions in New Zealand so that these results cannot be seen as representative of the practice in other regions, although in line with international experience we presume there has been a parallel increase of awareness of gender issues. Similarly, these data only capture referrals to the Endocrine Service; the Wellington Sexual Health Service (WSHS) also support people who identify as transgender, and Wellington Paediatric Endocrine service has seen people who identify as transgender, particularly presenting before age 16. In addition, the neighbouring DHB, Hutt Valley, have an endocrine unit which provides services for people who identify as transgender. It is possible that the increase we have observed is due to the referral pattern moving from one service to another over time. However, the WSHS is not a primary referral service for transgender management, and clinicians at the Wellington Paediatric Endocrine service and Hutt Valley DHB confirmed they had seen very few transgender cases over the most of the period of this audit, from

1990 to about 2013, and have retained a few in their clinics in the last 3–4 years (Esko Wiltshire, personal communication, 18 October 2017, and Raymond Bruce, personal communication, 17 October 2017).

We have not been able to confirm through an independent check of outpatient records that the people who identified as transgender in our records of former audits, prior to 2006, represent all those referrals who identified as transgender, although they were checked to the best of our ability at the time. This difficulty will not influence the changes reported since 2006, which have been monitored through both clinic and electronic records. The data for 2013 to 2016 have been recorded prospectively on referral, with the initial case assessment confirmed subsequently.

In conclusion, an increase in rates of referral provide a challenge to the health system in general and to clinicians to develop the skillset to support and select hormone therapy programmes for individuals seeking transgender services. An integrated and multidisciplinary approach, which includes primary care as well as secondary care Endocrine, Sexual Health, Mental Health and Paediatric services, is required.

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### Competing interests:

Nil.

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### Author information:

John W Delahunt, Clinical Lecturer, Department of Medicine, University of Otago, Wellington; Hayley J Denison, Research Assistant, Department of Medicine, University of Otago, Wellington, Research Fellow, Centre for Public Health Research, Massey University, Wellington, Doctoral Student, School of Biological Sciences, Victoria University of Wellington, Wellington; Dalice A Sim, Senior Research Fellow/Biostatistician, Dean's Department, University of Otago, Wellington; Jemima J Bullock, Clinical Psychologist, Endocrine, Diabetes and Research Centre, Capital and Coast District Health Board, Wellington; Jeremy D Krebs, Associate Professor, Department of Medicine, University of Otago, Wellington, Endocrine, Diabetes and Research Centre, Capital and Coast Health, Wellington.

### Corresponding author:

John W Delahunt, Department of Medicine, University of Otago, PO Box 7343, Wellington 6242.

john.delahunt@otago.ac.nz

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