Youth Gender Transitions: Counting the Cost

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This past November, New Zealand[1] announced that puberty blockers would no longer be prescribed to minors for gender dysphoria, for the same reasons found in the 2025 U.S. Department of Health and Human Services (DHHS) comprehensive evidence review of pediatric gender medicine. The DHHS report[2] found "shaky foundations" for the claims of benefit, which were based on low-grade evidence and little of it contrasted with robust and objective evidence of risks and harms. New Zealand "counted the cost" of these medical interventions on minors. Joining Sweden, Finland, the UK,[3] and others, NZ declared puberty blockers not worth the risk.[4]

In view of all the evidence, why then did the major U.S. medical associations push back?[5] In addition to their continued insistence that medical "gender" interventions on minors are justified, organizations such as the Endocrine Society also assure the public not to worry because such interventions are "rare" and that a "cautious approach" is being taken.[6]

Here the Medical Institute (MI) estimates the cost for one medicalized gender dysphoric youth over the lifespan.[7] Then the cumulative costs applied to the numbers of medicalized youth are estimated for this "rare" occurrence.

Counting the Cost

Medications[8]

The first step in medicalization of children with respect to gender distress is puberty blockers. Here we will use an average age of 12[9] for beginning pubertal suppression and assume an average duration of three years[10] on this medication. Children are prescribed one of two options: Injections or Implants.

Phase 1: Puberty Blockers	**One year**	**Three years (age 12.0-15.0)**
Either Implant: Supprelin LA	$45,000[11]	$135,000
Or Injections: Lupron-Depot Ped IM kit	$22,500[12]	$ 67,500

Phase 2: Proceed to Cross-sex hormones[13]

Cross-sex hormone costs:	**Minor 15-17**	**Young Adult 18-24**	**Lifespan 15-75**
MtF: Estrogen[14]			
Estradiol oral tablets—[15]			
$12+$24 spironolactone/month= $432/yr.	$1,296	$ 3,024	$25,920
Patch--$27 +$24 spiro/month= $612/yr.	$1,836	$ 4,284	$36,720
Injection--$78+$24 spiro/month=$1,224/yr	$3,672	$ 8,568	$73,440
Depo-Estradiol $390 +$24 spiro= $4,968/yr	$14,904	$34,776	$298,080
FtM: Testosterone			
Gel: $117/month[16]=$1,404/year	$4,212	$ 9,828	$ 84,240

Injections: $200/month[17]=$2,400/yr.	$7,200	$16,800	$144,000

Using the above figures, the lifetime costs (estimating a 60-year span of hormone use) for **one gender-medicalized youth** ranges from **$26,000 to $300,000 for males and $84,000 to $144,000 for females.** Note that these costs are for the medications only and do not include labs or doctor appointments. The middle column is given to demonstrate the costs incurred by the mid-twenties.

Phase 3: Surgery

The next step in medical transition after hormones may involve surgery or surgeries. While not all desire or will have surgery, many trans-identifying individuals do, including minors. In fact, one article[18] described how cross-sex hormones can *increase* gender dysphoria in females regarding their breasts, increasing the desire for a "top surgery," i.e. double mastectomy. What do these surgeries cost?

Surgery Costs: Average Estimates[19]

Female to Male:	Low End	High End
Chest reconstructions:	$8,500	$11,500
Hysterectomies:	$32,000	$50,000
Phalloplasty:	$35,000	$50,000

To keep the estimates on the conservative end, several additional surgeries are not listed here that could add to the costs, e.g. metoidioplasty, facial, and body masculinization surgeries. Metoidioplasty costs between $19,000 and $42,000. It is a surgery intended to construct "a small neophallus from a hormonally enlarged clitoris."[20] While some have a metoidioplasty before a phalloplasty, most patients that choose to have either one or the other. For the purposes of this estimate, phalloplasty only will be included as the genital surgery for natal females.

Male to Female:[21]

Breast augmentation:	$8,500	$10,000
Facial feminization-upper:	$10,000	$50,000
Facial feminization-mid:	$6,000	$18,000
Facial feminization-lower:	$4,500	$50,000
Vaginoplasty:	$23,000	$24,500
Labioplasty:	$8,500	$15,500
Vulvaplasty:	$20,500	$22,000
Orchiectomy:	$2,000	$8,000

Potential additional expenses not listed: Hair removal, non-breast implants or body feminization, tracheal shaves or liposuction to better fit in with the general population. There are also voice feminization surgeries,[22] including laser techniques or a glottoplasty surgery, where the vocal chords are restricted in order to raise the pitch of the voice, (glottoplasty cost estimate $5,000-

$10,000[23] plus any additional voice therapy). Some clinics have even offered foot narrowing surgeries.

Lifetime Potential Costs Per Person:

Female to Male-One Patient:	**Low End**	**Upper End**
Age 12-15, puberty blockers:	$67,500	$135,000
Age 15-75, testosterone monthly:	$84,240	$144,000
Surgeries combined:[24]	$75,500	$111,500
Lifetime combined:	$151,740	$390,500[25]

Male to Female-One Patient:	**Low End**	**Upper End**
Age 12-15, puberty blockers:	$67,500	$135,000
Age 15-75, est/spiro monthly:	$25,920	$298,080
Surgeries:[26]	$83,000	$198,000
Lifetime combined:	$176,420	$631,080

With conservative estimates, **Puberty blockers plus lifetime hormone and surgery combined costs**: **one patient can range from over $150,000 to over $600,000.**

In 2022, a Reuters-Komodo Health investigation of insurance claims in the U.S. found that 121,882 minors ages 6-17 had received a gender dysphoria diagnosis from 2017-2021. Over the course of those five years, 17,683 had initiated medical interventions. 4,780 minors had been placed on puberty blockers and 14,726 had begun cross-sex hormones.[27]

Using the calculations above, what would the medication costs be for this cohort? For estimation purposes, half of the minors are assigned to the less expensive injections and half to the more expensive implants for the average duration of three years.

Phase 1: Puberty blockers: N=4,780	**One Year**	**Three Years**
Injections: 2,390 minors x $22,500	$53,775,000	$161,325,000
Implants: 2,390 minors x $45,000	$107,550,000	$322,650,000
Total:	**$161,325,000**	**$483,975,000**

Thus for this cohort of patients and insurance claims, the puberty blockers estimated costs for **one year** is **over $150 million dollars**. Over **three years**, it could easily be **$500 million dollars** or more.

Phase 2: Cross-Sex Hormones: **N=14,276**
For ease of estimation, this cohort is divided evenly between males and females.[28] Thus, N=7,138 for males (MtF) and N=7,138 for females (FtM). As with puberty blockers, to keep the estimate conservative, both sexed cohorts are further divided in half, with half receiving the least expensive option and half the most expensive options.

One Year of Hormones: N=14,276

FtM: Testosterone—Lower Cost: 3,569 minors x $1,404 =	$5,010,876
Higher Cost: 3,569 minors x $2,400=	$8,565,600
Total Female Cohort Annual Expense:	**$13,576,476**
MtF: Estradiol—Lower Cost: 3,569 minors x $432=	$1,541,808
Higher Cost: 3,569 minors x $4,968=	$17,730,792
Total Male Cohort Annual Expense:	**$19,272,600**
Combined sex cohorts annual total for 14,276 minors:	**$ 32,849,076**
60-years on hormones (age 15-75): 60 x $32,849,076:	**$1,970,944,560**

The **hormone prescription costs** for this known cohort for **one year** would be **$33 million or more,** and the **lifetime** prescription costs would equal **$2 billion or more**.

Phase 3: Surgery Costs N=14,276 (7,138 females and 7,138 males)

FtM: Combined Surgeries—Lower Cost: 7,138 x $75,500=	$ 538,919,000
Higher Cost: 7,138 x $111,500=	$ 795,887,000

Potential Female Cohort Surgeries Expense: Between $540 million and $800 million dollars

MtF: Combined Surgeries—Lower Cost: 7,138 x $83,000=	$ 592,454,000
Higher Cost: 7,138 x $198,000=	$1,413,324,000

Potential Male Cohort Surgeries Expense: Between $600 million $1.4 billion dollars

Surgery costs for both sex cohorts combined, range estimated by all getting either the lower cost surgery versus all getting the higher cost surgeries: **From $1.1 billion to $2.2 billion dollars**

Estimated potential costs for Cross-Sex Hormones and Surgeries across the lifespan for both sex cohorts combined for Reuters N=14,276:

Lifetime costs between $3.1 billion and $4.2 billion dollars

In August 2025, the Williams Institute (WI) released an updated estimate of trans-identifying youth ages 13-17, equaling a total of 724,000 or roughly 3.3% of the U.S. youth population.[29] Hypothetically, if only **one percent** (n=7,240) of the WI sample began medical transition with **puberty blockers**, the costs over three years of treatment as estimated before[30] would be **over $700 million dollars**. If only **two percent (**n=14,480) of the WI sample began cross sex hormones, the cost of one year of medicines would be similar to the Reuters cohort size and estimates above, with potential lifetime costs of **into the billions.**

Youth Gender Medicine: Not So Rare After All

In March 2025, *JAMA Pediatrics* published a study[31] similar to the Reuters-Komodo Health study. Hughes and his co-authors reviewed private health insurance claims records for just over five million adolescents from the years 2018-2022, identifying the number of youths who had been prescribed puberty blockers or cross-sex hormones up to age 17. They calculated number of gender medicine recipients per 100,000 total adolescents and concluded that "receipt of puberty blockers and hormones was rare." The number of patients prescribed cross-sex hormones peaked at age 17 at 140 females and 82 males per 100,000.

While 222 per 100,000 might sound fairly rare, U.S. Census data estimates for 2024[32] list the number of 17-year-olds in the U.S. as 4.5 million, which equals 10,000[33] 17-year-olds on cross-sex hormones when the reported rate is extrapolated to the general population. The census counts of teens to mid-twenties estimates roughly 4.5 million for each year's age group. If the same rate held true for each year's age cohort from age 17 on, this "rare" rate can easily compound into tens of thousands of teens and young adults receiving cross-sex hormones. For instance, for the cohort spanning ages 17-24, at the reported rate, 80,000 would be receiving hormones. Lifetime costs for this potential cohort for cross-sex hormones alone could be over $11 billion dollars.[34] If such a cohort went through the full range of medicalization, including surgeries, lifetime costs could range between $17 billion and $24 billion dollars.

Costs that Can't Be Compensated

Despite the staggering financial costs, the greater cost is the harm done to young people in the name of medicine. No amount of money can restore the years lost to puberty suppression and the physical and mental development that was prevented or take away the harms that resulted. What would be sufficient compensation for a child's healthy body, future sexual functioning, and fertility, especially taken from them when they could not give truly informed consent? In the words of one Swedish man who transitioned young and was sterilized at age 21: "I was way too young to understand what it means not ever being able to have children of your own. I didn't understand what I was saying yes to" While he received compensation from the government for this, he remarked, "They can't give me my ability to have kids back."[35] And while he grieves over his decision at 21; some children in the U.S. are essentially "consenting" to sterilization at age 10.

Fox Varian is a 22-year-old woman who had her breasts removed at age 16. This week, she won her landmark malpractice lawsuit in New York, receiving a judgment of $2 million.[36] But $2 million can't restore what she lost. Losses such as fertility or body parts can never be adequately be compensated.

It's Time to Block the Blockers…for Good.

In banning puberty blockers for trans-identifying minors, New Zealand made a wise and evidence-based decision, but it came with a worrying caveat. New Zealand will await the results of the clinical drug trial commencing in the U.K., where 200+ children will be put on puberty blockers in the name of a transgender identity or gender exploration. But puberty is not the problem; suppressing it is. Children dealing with gender distress need compassionate care, not harmful medical interventions that are so profitable to some and so costly to others (the children). The Medical Institute stands with the Hippocratic Oath and medical ethics. No clinical

trial medicalizing gender distress should be conducted on vulnerable minors. The cost is simply too high.

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[1] https://www.nbcnews.com/world/asia/new-zealand-halts-new-puberty-blockers-young-transgender-people-rcna244925
[2] https://www.hhs.gov/press-room/hhs-releases-peer-reviewed-report-discrediting-pediatric-sex-rejecting-procedures.html
[3] https://webarchive.nationalarchives.gov.uk/ukgwa/20250310143933/https:/cass.independent-review.uk/home/publications/final-report/
[4] Clinical trials are being planned by the UK, and NZ will await these results. MI strongly objects to any clinical trials involving minors as medically unethical due to known harms. For more information, see: https://protectingpuberty.com/; https://sex-matters.org/posts/updates/the-puberty-blockers-trial-on-trial/.
[5] https://abcnews.go.com/Health/hhs-finalizes-report-gender-affirming-care-youth-medical/story?id=127685179
[6] Statement by the Endocrine Society to NBC news. https://abcnews.go.com/Health/hhs-finalizes-report-gender-affirming-care-youth-medical/story?id=127685179.
[7] Excellent prior work has been done showing the potential million dollar medical costs of one gender transition over a lifetime. See: https://kimmonson.com/featured_articles/the-1-million-cost-per-person-for-gender-transition/.
[8] A note on our price estimates: Good Rx prices are unrepresentatively low and only apply for a number months, not a year. So these figures are best case scenario, bottom dollar estimates. Also, no labs or doctor visits are included in these costs. Thus these are an understatement of the actual costs.
[9] For instance, between the following three studies, the average age would be 12.2 years at initiation. Olson-Kennedy et al. (2021) study of 66 youths had an average starting age of 11.3. (11.8 for boys and 10.8 for girls). See: Olson-Kennedy, J., Streeter, L. H., Garofalo, R., Chan, Y. M., & Rosenthal, S. M. (2021). Histrelin implants for suppression of puberty in youth with gender Dysphoria: A comparison of 50 Mcg/day (Vantas) and 65 Mcg/day (Supprelinla). *Transgender Health*, *6*(1), 36-42. Carmichael et al. (2021) had youths initiated at age 12, with a median age of consent at 13.6. See: Carmichael et al. (2021) Short-term outcomes of pubertal suppression in a selected cohort of 12 to15 year old young people with persistent gender dysphoria in the UK. *PloS one*, *16*(2), e0243894. Pine-Twaddell et al. (2023) total cohort average age was 11.6. Pine-Twaddell, E., Newfield, R. S., & Marinkovic, M. (2023). Extended use of Histrelin implant in pediatric patients. *Transgender Health*, *8*(3), 264-272.
[10] For example, Pine-Twaddell et al. (2023), *op. cit*., average duration of 37.5 months. Carmichael et al. (2021), *op. cit*., average duration of 31 months.
[11] Is Supprelin LA the same as Lupron? Updated Nov. 4, 2024. Retrieved Nov. 18, 2025.
[12] *Id.*
[13] As typically 98% do after puberty suppression. E.g. Carmichael et al. (2021), *op. cit.*
[14] Good Rx prices based on lower dose recommendations found on Good Rx Estrogen information page. Accessed Nov. 25, 2025. E.g. A vial of 20 mg/mL estradiol valerate ($52) with 6-8 mg weekly dose requires 1.5 vials/month.
[15] Again, GoodRx represents the absolute lowest price possible, so costs of medications will vary and may even be reversed. E.g. In other cases, testosterone injections are cheaper Androgel.
[16]Assuming the lowest recommended dose of 25mg daily. https://pmc.ncbi.nlm.nih.gov/articles/PMC10316880/. Cost with GoodRx coupon. Highest recommended dose would be 100mg daily https://www.goodrx.com/testosterone?dosage=88g-of-12.5mg-per-actuation&form=gel-pump&quantity=2
[17] As an example of injectables, this figure is based on a monthly Xyosted prescription cash pay. Accessed Nov. 25, 2025.
[18] Olson-Kennedy, J., Warus, J., Okonta, V., Belzer, M., & Clark, L. F. (2018). Chest reconstruction and chest dysphoria in transmasculine minors and young adults: comparisons of nonsurgical and postsurgical cohorts. *JAMA pediatrics*, *172*(5), 431-436. One study's review of insurance claims over a three-year period found insurance claims for 776 double mastectomies and 56 genital surgeries for minors ages 13-17. See: Respaut, R., & Terhune, C. (2022). Putting numbers on the rise in children seeking gender care. *Reuters Investigates, October*, *6*. https://www.reuters.com/investigates/special-report/usa-transyouth-data/.
[19] These costs are estimated by taking the Gender Confirmation Center's list and taking the median of the range listed for each type of surgery. https://www.genderconfirmation.com/blog/gender-reassignment-surgery-cost-guide-price-breakdown/; https://www.genderconfirmation.com/bottom-surgery-cost/. Reviewed 2024. Accessed 11.25.25.
[20] See: Stojanovic, B., Bencic, M., Bizic, M., & Djordjevic, M. L. (2022). Metoidioplasty in gender affirmation: a review. *Indian Journal of Plastic Surgery*, *55*(02), 156-161. The quote is from p. 156.

[21] Gender Confirmation Center List, see fn. 16. See also: MtF: http://www.thetransgendercenter.com/index.php/mtf-price-list.html.
[22] https://www.mountsinai.org/locations/grabscheid-voice-swallowing-center/our-services/transgender-voice-feminization; https://www.mayoclinic.org/tests-procedures/voice-feminizing-therapy-and-surgery/about/pac-20470545
[23] https://us-uk.bookimed.com/article/voice-feminization-surgery-cost/
[24] Most women who remain on testosterone eventually have a hysterectomy due to health issues. Phalloplasty is much less common than metoidioplasty. Phalloplasty also has ongoing associated surgeries: e.g. many times there are complications needing revisions, if the pump model is used for erection, the pump wears out and must be replaced, etc. See: https://www.nature.com/articles/s41443-020-00396-2. So this is only reporting initial costs of the first surgery.
[25] Also consider all the costs not included—doctor visits, lab work, etc., throughout the lifespan.
[26] Calculating surgery costs for those who did not undergo male puberty are difficult. Perhaps the natal males would not need breast augmentation or as much facial surgery, but if they pursue genital surgery, these surgeries become more difficult due to less developed genitalia thus not enough physical material to work with, which can lead to more revisions, complications, difficulty (e.g. not developed enough to invert the penis, but must use colon or stomach lining being taken for the creation of the neovagina, thus they are 84 times more likely to require abdominal surgery. See: van de Grift, T. C., van Gelder, Z. J., Mullender, M. G., Steensma, T. D., de Vries, A. L., & Bouman, M. B. (2020). Timing of puberty suppression and surgical options for transgender youth. *Pediatrics*, *146*(5). Thus placing $10,000 as a low-end figure assuming after so many interventions, some amount of surgery would be pursued (e.g. orchiectomy, breast augmentation to be more exaggeratedly feminized than the estrogen-induced breast development, etc.)
[27] Respaut, R., & Terhune, C. (2022). Putting numbers on the rise in children seeking gender care. *Reuters Investigates, October*, *6*. https://www.reuters.com/investigates/special-report/usa-transyouth-data/.
[28] Natal females outnumber natal males in trans-identification and medicalization. The even-split is for ease of estimation and illustration purposes.
[29] https://williamsinstitute.law.ucla.edu/publications/trans-adults-united-states/
[30] E.g. Dividing equally between females and males and highest and lowest cost medicines.
[31] Hughes, L. D., Charlton, B. M., Berzansky, I., & Corman, J. D. (2025). Gender-affirming medications among transgender adolescents in the US, 2018-2022. *JAMA pediatrics*, *179*(3), 342-344.
[32] U.S. Census Bureau (2024, June 25). National Population by Characteristics: Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States: April 1, 2020 to July 1, 2024, https://www.census.gov/data/tables/time-series/demo/popest/2020s-national-detail.html. Also: The population percentage of males and females were almost evenly divided: 49% females and 51% males.
[33] 4.5 million=45 sets of 100,000. 222 x 45= 9,990. Rounded up to 10,000.
[34] N=80,000 is 5.6 times the Reuters cohort, still assuming 60 years (to age 77). 5.6 x $1,970,944,560=$11,037,289,536.00
[35] See: CBC Radio, 'It Means a Lot': Sweden Compensates Transgender People for Forced Sterilization, 2017, March 29, https://www.cbc.ca/radio/asithappens/as-it-happens-wednesday-edition-1.4045787/it-means-it-a-lot-sweden-compensates-transgender-people-for-forced-sterilization-1.4045790.
[36] https://www.abajournal.com/news/article/woman-awarded-2-million-by-jury-in-malpractice-suit-over-gender-surgery