

DISPARITIES IN ACCESS TO FERTILITY CARE IN THE UNITED STATES:
ETHICAL CONSIDERATIONS FOR EQUITABLE SOLUTIONS

by
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Abstract

There are significant disparities in access to fertility services in the United States. These disparities exist along lines of race, ethnicity, education, income, geographic location, marital status, gender identity, and sexual orientation. In this paper, I will argue that these inequalities represent inequities and therefore demand rectification. The disparities in access to care exist for certain groups with shared characteristics who are overall socially and historically disadvantaged.

However, proposed solutions will also raise ethical issues that require careful consideration. For example, passing a policy that mandates insurance coverage of in vitro fertilization raises questions about eligibility, resource allocation, distributive justice and limitations on which reproductive technologies ought to be covered. Such a policy also fails to address barriers other than cost, such as geographic location and sociocultural factors, which may perpetuate existing disparities. Given that barriers to care include financial, geographical, and sociocultural factors, I will argue for the necessity of multifaceted solutions. I urge policymakers to also examine the distribution of benefits for policies under consideration. Ultimately, my investigation reveals that proposed solutions to reduce disparities in access to fertility care raise ethical issues of their own. These issues are not reasons for inaction, but rather ought to be carefully considered when evaluating policy solutions. I will conclude with recommendations for mitigating ethical concerns that arise from policies that aim to address disparities and outline the beginning of a solution to improve access to fertility care in the United States.

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Introduction

Two couples who are long-time friends both decide to start a family around the same time. The first couple, a man and a woman, begin trying to conceive naturally and are quickly successful. The second couple, two men, hire an egg donor and a surrogate through a surrogacy agency. The surrogate successfully gives birth and the men become fathers. The cost of this process is \$100,000, well over their annual disposable income and none of which is covered by insurance.

There is something that seems problematic about the contrasting experiences for these two couples. While the process of having a child will be different for the two couples due to physiological limitations, the financial barriers for the gay couple are astronomical. It is not just the fact that this process costs money, or that the couple desperately desires a child, that makes it problematic. There are plenty of situations that we have no moral qualms about where someone desperately wants something expensive and does not have the means to achieve it. I would love to cap off my week drinking a glass of Chateau Margaux, far out of my student budget, but nobody feels too bad for me because of this (rightly so). Unlike wine, procreation has moral significance; it is an intrinsic good. Procreation's involvement makes the situation described distinct from my unrealized wishes for a Friday night treat.

In this paper, I will argue that the discrepancy between these couples' experiences and other inequalities in access to fertility services, are unjust. I will describe the inequalities in access to fertility care in the U.S. and argue that these inequalities are unjust, therefore demanding attention and efforts to rectify. I will then shift to discuss possible solutions to address these inequities. Proposed solutions will also raise ethical issues that require careful

consideration. I conclude with recommendations for mitigating ethical concerns that arise from policies that aim to address disparities in access to fertility care in the United States.

Disparities in access to fertility care

Infertility is defined as failure to achieve pregnancy after one year of unprotected intercourse (Zegers-Hochschild et al., 2009). This definition refers to medical infertility, which is physiologically based. While causes vary, pregnancy can often be achieved through fertility treatment, such as intrauterine insemination (IUI) and assisted reproductive technology (ART) which includes in vitro fertilization (IVF) and IVF with intracytoplasmic sperm injection (ICSI). Infertility services are also utilized by some lesbian, gay, bisexual, transgender and queer (LGBTQ) couples and by single individuals that need medical assistance to become parents, sometimes referred to as social infertility (Lo & Campo-Engelstein, 2018). Importantly, some LGBTQ and single individuals may also have a diagnosis of medical infertility.

Disparities in use of infertility services in the U.S. exist based on individuals' ethnicity, race, income and education levels. Non-Hispanic black women and Hispanic or Latina women of reproductive age are less likely to have ever used fertility services than white women, even when accounting for sociodemographic characteristics such as income, education and marital status (Chandra, Copen, & Stephen, 2014; Janitz, Peck, & Craig, 2018). Hispanics and African Americans are underrepresented in fertility care given their makeup in the United States populations and their rates of infertility (Ethics Committee of the American Society for Reproductive Medicine, 2015).

Inequalities also appear among lines of income and education. Given the high out-of-pocket costs for fertility treatment, it is unsurprising that those with higher income are more likely to access services (Chandra et al., 2014). Perhaps more surprisingly, when accounting for

income, women with a college education or higher are more likely to have used fertility services (Chandra et al., 2014). In one study, having a college degree increased men's chances of using infertility services threefold, while controlling for race, religion, income and insurance—none of which were significant predictors of accessing services (Hotaling, Davenport, Eisenberg, VanDenEeden, & Walsh, 2012).

Additional information on why these differences exist is required to establish that they are problematic. One may think from these data that older women with higher education may be more prone to put off childbearing for their careers and thus be more likely to have children later in life via ART; however, individuals with lower socioeconomic status (SES) are actually more likely to have fertility issues due to higher prevalence of sexually transmitted diseases and factors associated with poverty (e.g., inadequate nutrition, infections) (Peterson, 2005). Non-Hispanic black and Hispanic women who have less than a college education are more likely than their white, educated counterparts to experience infertility (Chandra, Copen, & Stephen, 2013; Quinn & Fujimoto, 2016). Yet these low SES and minority groups are less likely to use fertility services. The disparities between groups in prevalence of infertility and conditions that can cause infertility, while not covered in this paper, are important and may also constitute inequities.

It is even more troublesome that these groups show lower rates in access to treatment given they experience higher rates of infertility; however, it is possible that these groups are choosing not to access care or have some objection to using fertility care (e.g., on religious grounds). As others have rightly pointed out, inequalities that arise from voluntary choices like refusal on religious grounds are not inequities (Pennings et al., 2008). To establish these disparities as problematic, we must examine the reasons for differences in rates of utilization more closely.

Minority women report greater sociocultural barriers surrounding fertility treatment than white women. In a large survey of women seeking fertility care, African Americans and Hispanics reported more difficulty getting time off work, finding a physician they feel comfortable around and getting an appointment than white women (Missmer, Seifer, & Jain, 2011). African American women were 72 times more likely and Hispanic women were 36 times more likely than white women to report that they thought their race or ethnicity specifically contributed to this reduced access to treatment while controlling for age, education, income, religion and parity (Missmer et al., 2011). Asian-American, African American and Hispanic women were seven to 18 times more likely to be concerned about the stigma surrounding infertility than white women (Missmer et al., 2011). Another study found African American women with infertility were less likely to seek medical help getting pregnant than white women and if African American women did seek help, they typically waited to do so twice as long as white women, a median of two years compared to one (Chin, Howards, Kramer, Mertens, & Spencer, 2015).

These data suggest that multiple barriers related to race/ethnicity may be at play. On the one hand, there may be implicit racial bias in the health care system resulting in minority women reporting more difficulty getting an appointment or feeling comfortable at the doctor's office. Implicit racial bias could also influence whether or not individuals and couples are referred to fertility care (e.g., by their primary care physician). Concurrently, cultural attitudes and beliefs within racial/ethnic groups may contribute to greater stigmatization that may affect members' help-seeking behaviors. Some beliefs, such as voluntary refusal to use services based on religious grounds, may be unproblematic. Others, such as misinformation or false beliefs, may present an opportunity to partially remedy disparities in utilization rates. Parsing the impact,

variation and reasons for these barriers for different groups is needed to inform solutions and interventions.

Barriers also exist for non-heterosexual couples and single individuals wishing to conceive without a partner. As of 2016, only half of American fertility clinics explicitly stated they treat LGBTQ patients on their website (Wu et al., 2017), with even fewer advertising to gay men (Jacobson, 2018). Some clinics in the U.S. do not treat unmarried individuals (Ethics Committee of the American Society for Reproductive Medicine, 2013). Other clinics accept single women and lesbian couples as patients, but not single men or gay male couples (Ethics Committee of the American Society for Reproductive Medicine, 2013). Private clinics have the legal right to set their own criteria that individuals must meet to be accepted as patients (Peterson, 2005); however, policies excluding these populations are discriminatory, lacking justification and evidence. In light of this, the American Society for Reproductive Medicine released a statement arguing there is an “ethical obligation and in some states there is a legal duty, to treat all persons equally, regardless of their marital status or sexual orientation” (Ethics Committee of the American Society for Reproductive Medicine, 2013). LGBTQ and single patients face barriers in finding a fertility clinic, in some cases being explicitly forbidden, severely reducing access.

Geography also plays a large role in access to treatment. Fertility clinics and providers are clustered in specific regions of the U.S. (Adashi & Dean, 2016), with nearly half of all clinics located in only six states (Jacobson, 2018). There is greater IVF availability and utilization in states with higher median incomes and greater IVF insurance coverage (Hammoud et al., 2009). Favoring opening fertility practices in well-off states perpetuates patterns of reduced access for poor populations. Gay men are even more geographically restricted in the services; nearly one-

third of surrogacy agencies are located in California, while 23 states have no available surrogacy agencies (Jacobson, 2018).

By far the greatest barrier to treatment is cost (Quinn & Fujimoto, 2016). One IVF cycle costs a median of \$24,000-38,000 (Katz et al., 2011), much of which may be out-of-pocket (A. K. Wu, Odisho, Washington, Katz, & Smith, 2014). Insurance coverage for infertility in the United States is limited. Fifteen states have mandated insurance to cover or offer coverage for fertility treatments (Martin, Bromer, Sakkas, & Patrizio, 2011). Even within these states, this coverage excludes individuals who buy self-employment insurance, lack insurance or have state-sponsored insurance like Medicaid (Quinn & Fujimoto, 2016). In Maryland, coverage is exclusively for married heterosexual couples (Ethics Committee of the American Society for Reproductive Medicine, 2015). Due to the limitations of these insurance mandates, well-educated, higher SES, non-Hispanic whites still disproportionately make up the population that access care in these states (Quinn & Fujimoto, 2016).

Further, coverage is restricted to individuals who meet the criterion of infertility, usually defined as the inability to conceive after twelve months of unprotected intercourse (Martin et al., 2011). This definition is entirely limited to heterosexual couples and some states require the couple to undergo and pay out of pocket for up to six rounds of failed intra-uterine insemination before IVF coverage kicks in (Johnston & Gusmano, 2013). The failure to recognize that lesbian or gay couples may have a diagnosis of medical infertility that should qualify them for coverage has led to a recent lawsuit in New Jersey for discrimination on the basis of sexual orientation ("Suing a New Jersey Commissioner Over Rules for Fertility Treatment," 2016). Coverage is non-existent for individuals or couples with social infertility, resulting in huge financial barriers to treatment (Lo & Campo-Engelstein, 2018). While slow progress is being made to increase

insurance coverage for treatment, the improved coverage often serves to benefit the already well-off: high SES, employed, heterosexual couples.

Evidently, there are significant disparities in access to fertility services in the United States along lines of race, ethnicity, education, income, geographic location, marital status, gender identity and sexual orientation. The question that follows is whether these are inequalities that we ought to be concerned about.

Given that there are children in need of parents and homes, adoption is proposed by some as a solution for individuals with fertility problems (De Wispelaere & Weinstock, 2014). While adoption is one way to start a family for those with medical or social infertility, adoption does not address the disparities in access to fertility care. The current argument that access to infertility care is inequitable and ought to be made more equitable is compatible with support for the adoption system. Even one who thinks adoption offers a viable, worthy option for those having difficulty conceiving can still agree that inequalities in access to fertility care are problematic. I am not arguing that individuals or couples ought to choose fertility treatment over adoption, but rather that there should be more equitable access to fertility care so more individuals and couples can have the choice of multiple family-building options.

There is legal and moral precedent for claiming that individuals have a right to procreate, which is referred to as procreative autonomy (Brake & Millum, 2018). In the Universal Declaration of Human Rights, article 16 establishes that all individuals have the “right to marry and to found a family” (United Nations General Assembly, 1948). In 1942, the United States Supreme Court declared procreation a “basic civil right of man” and that it is “fundamental to the very existence and survival of the race” (*Skinner v. Oklahoma*, 1942). Both of these documents

provide a legal enshrinement of the right to procreate. This work is supported by philosophical work claiming there is a right to procreation (Hill, 1991; Pires, 2017).

Some may be tempted to use the establishment of procreative autonomy as a justification for ensuring all individuals have access to fertility services. This viewpoint overlooks the distinction between a positive and negative right to procreation. A positive right to procreation would guarantee assistance with reproduction for those who need it (Brake & Millum, 2018). By contrast, a negative right would forbid the government and other entities (e.g., private clinics) from interfering with an individual's reproductive liberty (Brake & Millum, 2018; J. A. Robertson, 2004). Unlike a positive right, a negative right to procreative autonomy provides no assurance that an individual is owed assistance in realizing their right to procreation (Brake & Millum, 2018; Robertson, 2004). Positive rights demand assistance with realizing some good, making them much harder to justify than negative rights which require merely being left alone.

It is not necessary to resolve the question of whether there is a positive or negative right to procreation in order to establish that access to infertility care represents an injustice. This can be most clearly illustrated with an example: whether humans have a right to health is fiercely debated; however, even those who argue *against* a right to health are still concerned about health disparities. Similarly, one does not have to settle the debate over whether higher education should be free to be concerned over disparities in opportunity to access this education. Distinguishing between a positive and negative right does not determine whether disparities between groups represent an injustice; inequalities can be unjust without evoking rights¹.

¹ Here the true Libertarian will disagree with me, arguing that inequalities in access to care cannot be unjust if they have arisen from just transactions in a free market (Nozick, 1974). That is, the 'status quo' is just because those who work hard and act smartly are rewarded—inequalities in outcomes (e.g., access to health care) should not be rectified. Those who hold this view will not be persuaded by my argument, so I take my target audience to be anyone who isn't already firmly committed to the view that no distribution of benefits and burdens are unjust, so long as they came about through just transactions.

Returning to the opening example, while you may feel sorry that I cannot enjoy expensive wine on a weekly basis, this is quite different from a gay couple who wants to have biological children. The latter represents a group of individuals with shared characteristics systematically facing far greater barriers than other groups. There is also a recognized and generally accepted value and moral significance of becoming of parent. Even if an individual does not want to become a parent, they can acknowledge the fundamental role child-bearing and family play in our society. The involvement of procreation is a morally relevant feature of the example.

The populations who are facing the greatest barriers to care have faced great injustices historically (Jones, 2010). The poor, less educated, non-heterosexual and those who do not conform to society's expectation of gender or sexual orientation are groups that have faced significant injustice in the past and present. Not only is the current system of fertility services difficult to access for certain demographic groups, but these groups are the least well-off. The barriers that the LGBTQ population faces to reproduce serves to further marginalize this group by appearing to question whether these individuals ought to be parents (Robertson, 2004). This practice of fertility clinics as "gatekeepers" conjures up the troubled American history of trying to control which citizens should reproduce through methods such as forced sterilization.

In some cases, the current system may perpetuate existing disparities in these groups. For example, multiple embryos are often transferred to the woman in IVF to maximize the chances of a pregnancy. Transferring multiple embryos increases risk of twins or triplets, which are associated with high-risk pregnancy and increased risk of complication during birth. Despite these risks, couples frequently choose to transfer more than one embryo to avoid having to pay for an additional cycle. This decision is more likely to be made by couples who are financially

strained, which could lead to worse health outcomes for the mother and newborn. In states with insurance mandates to cover treatment, fewer embryos are transferred per cycle (Jain, Harlow, & Hornstein, 2002; Reynolds, Schieve, Jeng, & Peterson, 2003). Lower SES individuals, a characteristic already associated with a vast array of poor health outcomes, may feel pressure to make a treatment choice that increases the probability of adverse outcomes.

In summary, the inequalities that exist in access to infertility treatment are morally problematic. The disparities in use of and access to care are greater for certain groups with shared characteristics who have been socially and historically disadvantaged. I argued that these disparities represent inequities that demand rectification.

Ethical considerations for policy-based solutions

In the remainder of this paper, I will address three major issues that arise when considering policies to address these disparities: which policy or policies to enact, the major objection of cost and the potential for unintended, morally problematic consequences. Each of these issues will generate takeaway messages that ought to be considered by policymakers working in this area. I will then propose how these takeaways can be implemented in practice and discuss what a solution could look like.

Selecting a policy. The first question that arises is which policy or policies ought to be enacted. As the largest barrier to treatment is cost (Quinn & Fujimoto, 2016), it is logical to develop a policy focused on reducing the amount an individual or couple has to pay for treatment. Policies that address cost have been widely discussed in the literature (Hamilton & McManus, 2012; Johnston & Gusmano, 2013; Klitzman, 2017; Velez, Connolly, Kadoch, Phillips, & Bissonnette, 2014). Mandated insurance coverage for in vitro fertilization (IVF) is frequently proposed as a solution to cost barriers. Fifteen U.S. states require insurance cover for

IVF (National Conference of State Legislators, 2018) varying in the comprehensiveness of coverage (Jain & Hornstein, 2005). As a result, data from the U.S. health care system are available to examine the impact of such a policy.

To evaluate a policy mandating insurance coverage of IVF, one could ask if out of pocket costs were indeed lowered following implementation and whether this policy resulted in increased utilization of ART. Evidence from U.S. states with IVF insurance mandates suggests that ART utilization rates do increase after the mandate (Crawford et al., 2016; Jain et al., 2002); however, if the goal is to reduce disparities in access *for disadvantaged groups* as I have argued, then overall rates of ART utilization are not sufficient to evaluate progress towards this goal.

Disaggregated data by group are needed to determine if disparities have been reduced. When implementing an insurance mandate for IVF, one may hypothesize that disparities of SES and race may be reduced. Surprisingly, there is not conclusive evidence that insurance mandates increase rates of utilization for those from lower socioeconomic strata. A study of ART utilization in Massachusetts found that women from households that make over \$100,000 still make up a disproportionately large sector of those who use fertility clinics despite an IVF insurance mandate (Jain & Hornstein, 2005).

Insurance mandates also do not clearly increase access for racial/ethnic minorities groups and those with less education. The same Massachusetts study also found that Hispanic women and those with lower education levels were under-utilizing services compared to their proportion in the general population (Jain & Hornstein, 2005). Additional evidence from eight states with insurance mandates showed that these states have smaller disparities in access between racial groups than states without an insurance mandate, though the mandates are not sufficient to eliminate racial disparities (Dieke, Zhang, Kissin, Barfield, & Boulet, 2017).

Data from a nationally representative survey of women of child-bearing age showed that fertility treatment utilization increased following implementation of an insurance mandate and this increase was the greatest among wealthy and highly educated women (Bitler & Schmidt, 2012). These educated and wealthy women are not only more likely to seek services, but also generally more likely to have private health insurance that will cover the services—benefiting the most from the insurance mandate (Bitler & Schmidt, 2012). Individuals with government-sponsored health insurance (e.g., Medicaid) and those without health insurance often fall through the cracks of these IVF insurance mandate policies. These groups make up a significant portion of the population; in a large national study, one-quarter of women of reproductive age were uninsured in the last year and one-quarter reported being currently on Medicaid (Kozhimannil, Abraham, & Virnig, 2012). These data suggest that a policy that mandates IVF coverage is not enough to increase use of services across SES, education levels and racial/ethnic groups.

While a policy may intend to reduce a certain disparity, it is important to evaluate the effectiveness of this goal after implementation. One barrier to determining if certain groups increase use of fertility services following implementation of an insurance mandate policy is that the national mandatory reporting databases of fertility clinics put out by the Centers for Disease Control and the Society for Assisted Reproduction Technologies do not collect information about patient demographics (Society for Assisted Reproductive Technology, n.d.; Centers for Disease Control and Prevention, n.d.). This is presumably to protect patient and clinic privacy, but also makes it difficult to determine utilization rates across groups because studies are often limited by sampling region and methods.

Still, the data that exist suggest that IVF mandates could help to increase rates of utilization of services, but modifications such as expanding to Medicaid coverage need to be

explored. Policies that address cost must make efforts to extend assistance to the poor and marginalized, rather than solely private insurance holders who often have the most comprehensive coverage to begin with. It is unlikely that insurance mandates will successfully eliminate the disparities in access to care by race, education or income, suggesting, as research supports, other barriers may be at play and additional methods need to be employed.

Solutions focused on cost (e.g., insurance mandate) do not address other disparities such as geography; reducing spatial disparities is not the intent of an insurance mandate. Fertility clinics in the United States are distributed in an extremely uneven fashion. As of 2018, half of the clinics accredited by Society for Assisted Reproductive Technology (SART) are located in just eight states, while seven states have two clinics, nine states have one and two states (NH and AK) have zero (Society for Assisted Reproductive Technology, n.d.). Of the 15 states with mandated insurance coverage of IVF, four of them only have one infertility clinic (Society for Assisted Reproductive Technology, n.d.; National Conference of State Legislators, 2018). Evidently, passing an insurance mandate does not guarantee that additional fertility clinics will be opened in the states with few or no clinics.

Similarly, decreased cost and increased numbers of clinics may not solve the sociodemographic barriers cited by people of minority groups. Increased availability of services may not result directly in increased utilization. Stigma and racial bias will not necessarily decrease following an increase in number of clinics. Further, research often focuses on people already in fertility care, providing information only on those who seek medical help to conceive rather than investigating reasons for not showing up in the first place (Chin et al., 2015). Some of these reasons may be modifiable through education or intervention programs, while others may stem from personal, moral or religious beliefs of individuals who have no desire to be swayed

otherwise. Later I will discuss how to navigate these important differences in sociocultural barriers.

If the goal is to reduce disparities in all the previously discussed groups, it seems impossible that any one solution could improve access for all these groups. While an insurance mandate may reduce disparities in access by SES, another policy to incentivize new clinics in neglected areas may serve to reduce spatial disparities. It is hopefully evident from this discussion that to successfully address different disparities, policies ought to be multifaceted. This concludes my discussion of the first ethical consideration on selecting the right policies. I will now shift to talk about the second consideration: cost.

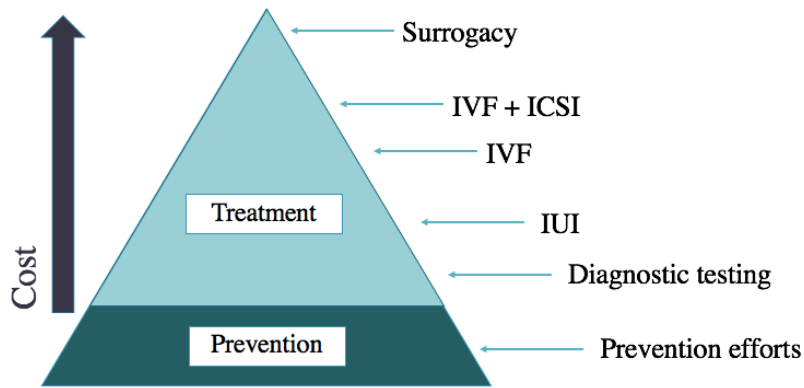
Cost. Cost is a major objection to policies designed to increase access to fertility care. Opponents will argue that these policies will be too costly. First, one should evaluate the evidence for the claim that these policies will be costly. Some argue that policies such as mandating IVF may not be as costly as they are assumed to be. Public funding of IVF in Quebec was coupled with the requirement to transfer only one embryo, reducing the twin and triplet pregnancies dramatically (Velez et al., 2014). While the cost of fertility treatment per couple/individual increased by roughly CAD \$1000, the costs associated with delivery dropped CAD \$6000 (Velez et al., 2014). The number of premature babies born and the number of neonatal intensive care unit admissions both dropped by more than 35% (Shaulov, Belisle, & Dahan, 2015).

In 1998, the Society for Assisted Reproduction and the American Society for Reproductive Medicine provided in the first professional recommendations in the United States regarding the number of embryos that should be transferred during a cycle of IVF (Practice Committee of Society for Assisted Reproductive Technology & Practice Committee of American

Society for Reproductive Medicine, 2008). These recommendations resulted in a sharp decrease in the number of higher order births (three or more babies) that Lee, Evans, Stern, and Hornstein (2016) estimated resulted in six billion dollars in savings of health care expenditures. From a cost-benefit or a public health perspective, funding of fertility treatments when coupled with guidelines on the numbers of embryos transferred looks promising, although the decreased costs may be mostly due to reductions in the number of embryos transferred. Still, covering the cost of IVF may relieve financial pressure on individuals or couples to transfer multiple embryos that increase the chance of success but also of higher-order, riskier pregnancies. Some have argued that coverage could increase individual's and couples' capacity for autonomy—to make decisions based on their personal preference and health, rather than based on financial limitations (Johnston & Gusmano, 2013).

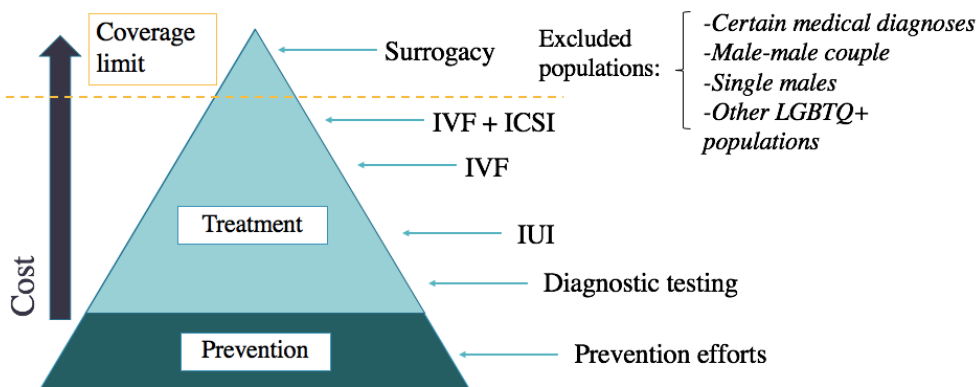
Further investigation into cost is needed as this is a genuine resource allocation concern. Cost will vary by policy and should be carefully considered when selecting policies. One way to approach this issue would be to consider ordering fertility treatments by increasing cost and limit insurance coverage to the less expensive treatments. *Figure 1* shows a schematic of a fertility treatment cost pyramid. To minimize cost, one may reasonably propose to cap coverage at in vitro fertilization (IVF) and intracytoplasmic sperm injection (ICSI). This coverage would provide financial relief for a large proportion of the treatment-seeking population.

Figure 1. Schematic of fertility treatments by cost.



It is important to consider who fails to benefit from this proposed policy. There is a subgroup of fertility patients—women with certain medical diagnoses (e.g., that require a hysterectomy), single males, male-male couples and other members of the LGBTQ community—that *require* use of a surrogate to conceive a biologically related child (see Figure 2 for a schematic of imposing a coverage limit at the of IVF and ICSI). This seems problematic since these are some of the populations that already experience disparities in access to infertility care. In this case, such a policy may perpetuate or increase these populations’ inability to access care.

Figure 2. Schematic of fertility treatments by cost imposing a coverage limit at the of IVF and ICSI.



This is not to say we should fund surrogacy for all those who need it; surrogacy introduces a much larger cost of treatment and complicates the situation ethically and legally. Rather, this discussion points out that policy creation based on purely a cost-benefit analysis fails to take into consideration distributive justice concerns. Restricting insurance coverage will necessarily exclude some people in need. Policies addressing the disparities in access to care ought to consider the distribution of benefits among affected populations. In the surrogacy case, we should explore other ways to mitigate the financial burden of fertility treatment for these populations. For example, some Canadian provinces have implemented a tax credit system for in vitro fertilization (Government of Canada, 2018). A similar approach could be trialed with those who use a surrogate.

While this paper focuses on the disparities in access to fertility care and policies to reduce these disparities, it is important to mention that there are other, more upstream approaches to reducing disparities. As the bottom of the pyramid *Figure 1* alludes to, another approach would be to reduce the disparities in the *prevalence* of infertility. A considerable proportion of infertility cases are thought to be from preventable causes such as untreated sexually transmitted infections, weight, smoking and exposure to toxic substances (Centers for Disease Control and Prevention, 2014). Public health campaigns targeting these preventable causes could help to reduce disparities between groups in the prevalence of infertility. Allocating funding towards prevention over treatment is an omnipresent ethical dilemma in public health. Prevention could help to reduce future incidence (and cost) of infertility, but also takes away from those currently facing treatment. While prevention efforts are worthwhile, they focus on prevention of medical infertility and fail to address individuals and couples with social infertility.

To conclude the discussion of the concern of cost, I propose that policies addressing the disparities in access to care ought to consider the distribution of benefits among affected populations. This also supports the necessity of multifaceted policies since a single policy cannot evenly distribute benefits among all those in need.

Ethical consequences. The third question that may arise when considering policy is whether one can endorse a solution without having unintended, morally problematic consequences. To illustrate this, I will explore two ethical concerns of mandating IVF insurance coverage.

One concern is that by mandating IVF coverage, we may be implicitly endorsing the view that IVF is worth funding and has greater value than building a family through adoption. As a society, by committing money to ART, we may be privileging fertility treatment over adoption in a way that devalues adoption. There are some individuals that want a genetically related baby and are pursuing ART to achieve this. I am not arguing that people ought to choose IVF over other family building methods (i.e., adoption) or that genetically-related babies should be preferred over adopted babies. Rather I argue that efforts should be made to increase access to ART for groups that currently face significant barriers to care. The choice between pursuing assisted reproduction and adoption is a personal one that should be made based on an individual or couple's values, rather than a choice that is eliminated due to cost as currently is the case for many people in the United States. One way to mitigate this concern could be to advocate for changes to the ART *and* the adoption system simultaneously.

A second concern that arises from a policy mandating IVF coverage is that it may create an unintended obligation to help others. The idea initially arose in response to Robertson's (1983) argument for a positive right to assistance with procreation, which he termed procreative

liberty. If an individual has a right to something, then there is someone or some entity, usually called the duty-bearer, that must help them realize that right. Having a right *by definition* means there is a corresponding duty-bearer; the duty bearer is typically said to be the State. Under Robertson's view of procreative liberty, an individual is entitled (has the right) to assistance with procreation (Robertson, 1983). The State could fill its obligation as a duty bearer by providing funding for IVF or passing legislation that mandates insurance coverage for IVF.

While the State is typically thought of as the duty bearer, one could ask if there is some obligation that extends to the individual level to help others with assisted reproduction. Ryan (1990) raised this when she sharply critiques Robertson's position; procreative liberty creates an obligation of the State to provide assistance to reproduction and could conceivably be extended to the individual level. An obligation to help others with assisted reproduction raises concerns of women being obligated to donate eggs or act as a surrogate, but we tend to think of these sorts of acts as far too intimate to be appropriate targets of obligations. However nice it might be of a woman to provide surrogacy services to a gay male couple, it seems false that she could be obligated to do so (Ryan, 1990).

Ryan (1990) raises a serious ethical concern with arguing for a positive right to procreation and it is worth exploring whether this concern applies to my argument. Unlike Robertson (1983), I am not arguing for a positive right to procreation, rather I am arguing for IVF coverage that would redress inequities. Recall that arguing for a right necessitates that there is a correlating duty bearer responsible for helping people to achieve that right. By *not* arguing for a right to procreation, it is not obvious that there is a relevant duty or duty bearer. So, the concern that a State-level obligation may extend to the individual does not apply because there is not a State-level obligation created in the first place.

My argument does not create an individual obligation to help others with assisted reproduction; however, donor IUI/ART requires sperm, eggs, embryos and women used as gestational surrogates that must come from donors. If IUI and IVF is made much more available (e.g., through an insurance mandate), it is possible that this policy may pressure or encourage people to donate. The nature of this pressure is not clear. It could be financial, depending on reimbursement schemes. Other policies, such as covering surrogacy, may create a greater pressure to donate and therefore raise greater concern.

This discussion illustrates the importance of carefully considering morally problematic issues that may arise from different solutions. Any solution will likely have ethical implications and these concerns ought to be elucidated and explored.

From recommendation to action

I have proposed that solutions should be multifaceted and the distribution of benefits and ethical consequences of each policy should be carefully considered during policy development. These takeaways alone do not provide much action guidance for policymakers. I will now focus on providing concrete ways in which these takeaways can be implemented. While I generally limit my discussion to policy solutions, similar issues may arise when developing public health interventions or programs; my takeaway messages and considerations could also be applied during development of such programs.

Multifaceted solutions. The first takeaway from discussion of which policies ought to be enacted is the necessity of multifaceted solutions. As discussed, there are a number of barriers that policies could address (e.g., cost, geographic, sociocultural barriers). People from affected communities should be involved in the process of identifying and determining which barriers ought to be addressed. For some barriers, such as sociocultural ones, it is possible that even well-

intentioned programs to decrease these barriers (e.g., community education) may not be desired or seen as appropriate by certain groups. Engaging these populations is necessary to first determine whether policies addressing certain barriers (e.g., stigma) are desired; it is possible that some groups may prefer community-driven efforts, rather than top-down policy. These populations may also provide insight into other barriers to care not identified in previous research. Engaging the affected communities in policy and program development could help to identify possible courses of acceptable action.

Evaluation of the effectiveness of the policies is essential to ensure the policy achieves its goal. Large epidemiologic monitoring can track use of ART by different sociodemographic groups before and after implementation of policies. I have argued that policies should be created to reduce disparities in access to care. Under this view, a policy that is ineffective at reducing disparities is not only unsuccessful but also unjustified; the policy should be reviewed and modified or abandoned for a more effective policy in a timely manner.

Distribution of benefits. The second takeaway is that policies addressing the disparities in access to care ought to consider the distribution of benefits among affected populations. This recommendation should be implemented early in the policy or program design phase. Each proposed idea for a policy or program should be followed with an exploration of which populations serve to benefit and which populations will be neglected or negatively impacted. Again, representation from different groups in this discussion is essential to provide insights about foreseen effects of proposed policies. Distributive justice is also important during the post-implementation phase. Empirical data can help to track whether the predictions of distribution of benefits are correct.

Policies will not create an even distribution of benefits. Consideration of distributive justice will require teams creating fertility policy and programs to work together to ensure that benefits are fairly distributed when aggregating the effects of multiple policies. For example, I discussed the possibility of mandating insurance coverage of treatments up to IVF/ICSI while concurrently implementing a tax credit system for those that require the use of a surrogate for their fertility treatment; some populations that fail to benefit from the first policy will benefit from the second. The tracking and publishing of changes in service utilization post-implementation will also help to implement this takeaway and increase accountability.

Ensuring that groups benefit requires a better understanding of why disparities exist for certain groups. For example, additional research is needed to understand why there are disparities in access between racial groups. Knowledge of the reasons for these disparities will assist in creating good policies or programs to reduce them.

Ethical issues. Finally, I suggested that proposed solutions to reduce disparities in access to fertility care raise ethical issues of their own. Empirical research could help evaluate if the two ethical issues I raised are genuine ethical concerns. For example, people—in particular women, in states with an IVF mandate, could be asked whether they feel any pressure to donate eggs or serve as gestational carriers. Similarly, views on different methods of family building, such as adoption and assisted reproduction could be compared in these states to other states without an insurance mandate. Research could help to identify new or particularly prevalent concerns and can be augmented by conceptual work to help explore and address concerns. Concerns generally agreed upon by groups (e.g., racial groups, geographic regions) should be carefully considered, even if they make up a low prevalence overall (Kass, 2001).

These ethical issues are not reasons for inaction, but rather ought to be carefully considered when evaluating policy solutions. Leaving current access as is by showing that changes have negative implications ignores the current inequities. This concern may be partly addressed by involving stakeholders and community members in discussion; open dialogue about the consequences and impact of proposed programs or policies is needed.

Mapping a solution. Insurance mandated IVF coverage is a good first step in reducing disparities as it has been successfully implemented in a number of states. Coverage should also be expanded to people with social infertility and government-sponsored health insurance programs. While surrogate coverage could be explored, alternative policies such as tax breaks may be more ethically, legally and financially acceptable. Perhaps tax credits or additional financial support could also be applied to individuals who do not have insurance (e.g., unemployed, self-employed, part time).

A more inclusive definition of infertility, one that does not rely on failure to achieve conception after heterosexual sexual intercourse, is urgently needed to include non-heterosexual people with physiologically-based infertility. Current coverage in some states has been described as discrimination due to their definition of infertility and inclusion criteria for coverage (Pendo, 2004); these laws need to be rewritten to be inclusive of those with social infertility. Finally, policies should be enacted to address disparities that are unlikely to be reduced by policies about cost. States could create incentives for fertility clinics in underserved areas. National organizations (CDC, SART), experts (e.g., providers, policy experts) and patient advocacy groups could also get involved with this issue.

While these policy ideas may seem like a wish list, well thought out and evidence-based policies are necessary to eliminate disparities in access to care. Policymakers have an

opportunity to begin to address these disparities by developing multifaceted solutions and closely monitoring these policies' impact following implementation. Policies that do not have the desired effect of increasing use of services by disadvantaged groups should be modified or replaced. Throughout the process, engagement of effected groups and experts is essential to ensure benefits are distributed fairly and to explore morally problematic consequences that may arise. These problematic consequences are not reasons for inaction, but rather ought to be carefully explored and mitigated when necessary. As I have argued, the disparities in access to fertility services in the United States are morally problematic and demand our attention and action to redress. I have proposed a framework for policymakers and call upon them to develop evidence-based, ethical policies to address these disparities.

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Biographical statement

Margot Kelly-Hedrick was born on July 19, 1995 in Seattle, Washington. She grew up on Mercer Island, Washington until she moved to Dunedin, New Zealand with her family for a year in 2012. She attended McGill University in Montreal, Canada where she became enthralled with the study of the human brain and mind and pursued a Bachelor of Arts in Psychology. For her undergraduate thesis Margot conducted a content analysis of infertility-related videos on YouTube. After graduating in 2017, she worked as a research assistant in a reproductive psychiatry lab focused on the psychosocial aspects of infertility. Margot's experience learning about emerging technologies in fertility care piqued her curiosity in exploring the ethical side of these advancements. She pursued a Master of Bioethics degree at Johns Hopkins Berman Institute of Bioethics and Johns Hopkins Bloomberg School of Public Health, developing a particular interest in reproductive ethics and health disparities research culminating in her thesis, "Disparities in access to fertility care in the united states: Ethical considerations for equitable solutions."