

Disparities in access to effective treatment for infertility in the United States: an Ethics Committee opinion

The Ethics Committee of the American Society for Reproductive Medicine

American Society for Reproductive Medicine, Birmingham, Alabama

In the United States, economic, racial, ethnic, geographic, and other disparities prevent access to fertility treatment and affect treatment outcomes. This opinion examines the factors that contribute to these disparities, proposes actions to address them, and replaces the document of the same name, last published in 2015. (Fertil Steril® 2021;116:54–63. ©2021 by American Society for Reproductive Medicine.)

El resumen está disponible en Español al final del artículo.

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KEY POINTS

- Building a family is a basic human right.
- Infertility is recognized as a disease by the World Health Organization and the American Medical Association, among others.
- In the United States, as in many other countries, economic, racial, ethnic, geographic, and other disparities affect both access to fertility treatments and treatment outcomes.
- Economic factors are the chief contributors to disparities in access to effective treatment; however, social and cultural factors play a role as well, including individual or systemic discrimination that disadvantages certain people because of their race, ethnicity, sexual orientation, or gender identity.
- Further research is needed and encouraged to understand documented racial and ethnic disparities in treatment success and to improve treatment methods to reduce those disparities.
- It is the responsibility of all those providing reproductive and infertility care, including assisted reproductive technology, such
 as physicians, policy makers, and insurance providers, to actively and deliberately address and lessen the barriers to infertility
 care. Efforts should include increasing insurance coverage, reducing the economic and noneconomic burdens of treatment,
 improving public and physician attention to treatment disparities, and reaching and educating underserved populations
 and geographic areas.

nvoluntary childlessness because of infertility can profoundly impact people's lives, causing medical, social, economic, and psychologic harm. Furthermore, the impact of barriers in family building has implications well beyond the individual, negatively impacting the social structure and stability of extended families and their communities. According to the National Survey of Family Growth,

approximately 7.4 million women in the United States or approximately 12.1% of women of reproductive age experience difficulty having children because of impaired fecundity (1). Approximately 9.4% of men are subfertile or nonsurgically sterile (2). For many of these people, safe and effective methods of addressing infertility are needed but are unaffordable or otherwise inaccessible. When a treatment

gap or inequality systematically affects members of certain disadvantaged subgroups of the population, it is considered a health disparity (3).

This opinion discusses disparities in access to and use of effective reproductive medical treatments in the United States, the causes of these disparities, ethical implications, and needed responses. Disparities in access to effective treatment in reproductive medicine are tied to many factors, including socioeconomic status, geography, race, ethnicity, religion, sexual orientation, gender identity, marital status, and conscious or unconscious discrimination (4).

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Reprint requests: Ethics Committee, American Society for Reproductive Medicine, 1209 Montgomery Highway, Birmingham, Alabama 35216-2809 (E-mail: asrm@asrm.org).

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The importance of reproduction in modern American life has been recognized by our legal system for many decades. At the height of World War II, the US Supreme Court declared procreation "one of the basic civil rights of man ... fundamental to the very existence and survival of the race"(5). Decades later, the Court reiterated the importance of reproduction, calling it "a major life activity" deserving of protection under the federal law prohibiting discrimination against persons with disabilities (6). The right of reproductive liberty in the United States is understood commonly at a minimum as an individual's right to be free from governmental interference with his or her reproductive decision making, including choices about whether and when to form a family and to receive treatment for disease (7). Using a framework of reproductive justice, ideally society should strive for the complete well-being of women and girls and the full achievement of their human rights-including the right to have or refrain from having children (8).

Legal and policy norms also reflect the importance of reproduction in a person's life. In 2009, the World Health Organization (WHO), in conjunction with the International Committee for Monitoring Assisted Reproductive Technology, revised its glossary to acknowledge that infertility is "a disease of the reproductive system" (9). In 2017, the American Medical Association endorsed the WHO definition, while the International Glossary on Infertility and Fertility Care has gone further to include in its definition "impairment of a person's capacity to reproduce either as an individual or with his/ her partner," to recognize the reproductive challenges of lesbian, gay, bisexual, transgender, queer, and unpartnered individuals (10, 11). The Inter-American Court of Human Rights recognized the obligation not to obstruct the fundamental right to reproduction in its decision to overturn Costa Rica's ban on in vitro fertilization (IVF) (12). In overturning the 12-year ban, which had been premised on the "personhood" rights of embryos, the Court found that citizens' rights to enjoy reproductive autonomy and privacy, access reproductive health services, and create a family outweighed the interests of nonimplanted embryos.

UNMET NEED IN TREATING INFERTILITY

Many individuals in the United States with impaired fertility remain untreated or undertreated. In 2009, an international panel of experts estimated that only 24% of the needs for assisted reproductive technology (ART) in the US population were being met (13, 14). ART accounts for approximately 1.5% of births in the United States, compared with an average of 3% of births in Europe, and higher percentages in many countries that publicly fund IVF, such as Denmark (5.9%), Belgium (4.0%), and Sweden (3.5%) (15-17). Although detailed statistics are not available on the number of infertile men and women in the United States treated by means other than ART (e.g., surgery, medication, ovulation induction with or without intrauterine insemination), the National Survey of Family Growth reports that during the period of 2006-2010, just 38% percent of nulliparous American women with current fertility problems had ever

used infertility services and most commonly those were medical advice and testing (18).

Surveying 4,712 women by telephone, one investigator estimated that of those who met the criteria for infertility, <50% had ever spoken to a doctor and 81% did not receive treatment. They concluded that in 2004–2006, >2.5 million women with infertility in the United States had not received medical treatment (19). In some instances, infertility care may be less available to men compared with women (20). Fertility preservation before gonadotoxic therapy is a further category of general ART access where only a subset of male and female patients (<30%) receives appropriate referral and treatment (21). These figures demonstrate that many women and men from the United States with impaired fecundity, or the threat thereof, remain untreated or undertreated.

For the individuals and couples concerned, inability to reproduce is a health and life crisis. It may be detrimental to the individual's, couple's, or their family's overall health, social status, and stability. Infertility may cause a person to be stigmatized within or ostracized from a community and may contribute to violence or psychologic disorders, including suicide and depression (22, 23).

Improving access and utilization is vital, but these measures alone will not address all aspects of the disparity problem; growing research suggests that current therapies may not be adequate for successful treatment of all patients. Some common biologic causes of infertility (e.g., fibroids, endometriosis, polycystic ovary syndrome, azoospermia, sexually transmitted diseases, and age of menopause) that may vary by race, ethnicity, or sex are researched inadequately along these demographic lines (24, 25). Studies have shown that some groups, including minority women, tend to seek medical advice after a longer duration of infertility, potentially contributing to lower pregnancy success rates (26-28). Physician referral patterns for fertility preservation in some instances vary by patient ethnicity, sexual preference, and socioeconomic status, and these patterns may apply to referral for other fertility treatments as well (29).

ECONOMIC BARRIERS TO TREATMENT

The majority of patients who undergo IVF in the United States pay out of pocket for their medical treatment because either they lack health insurance or their insurance policies exclude fertility care, cover infertility diagnosis only, or exclude IVF. One report places the median price of a cycle of IVF in the United States, including medications, at \$19,200 (30). A single cycle may represent 50% of an average person's annual disposable income (14), whereas a full course of treatment, i.e., ≥ 2 IVF cycles, may cost significantly more (31).

Cost pressures influence whether patients seek treatment and the decisions they make during treatment. A 2015 financing industry survey of 213 female fertility patients found that 83% of the patients were concerned or very concerned about the cost; 70% of the women who underwent IVF went into debt. The expense caused significant numbers of patients to delay treatment, whereas nearly 34% reported they had to stop treatment because of unaffordability (32).

In another study, women without insurance coverage for IVF were 3 times more likely to discontinue treatment after 1 cycle compared with women with insurance (33).

Men with male factor infertility face similar financial pressures when trying to build a family (34). In a survey at an urban academic medical center, almost half of the men reported that the cost of treatment caused financial strain and precluded certain therapeutic options (35). The financial burden is likely to be particularly high for single men and gay couples who often need to compensate both an egg donor and a gestational carrier to build their families (36).

Financial pressures and uncertainties are challenging to those hoping for a child (37) and they compel a number of patients each year to leave the United States to pursue treatment in other countries, such as India, where medical prices are substantially lower (38). Non-IVF fertility treatments, too, may be cost-prohibitive for patients at or below median income levels. The US Centers for Disease Control and Prevention has recognized that "Infertility treatment can also be expensive, and ... [e]conomic, regional, and racial/ethnic disparities in access to and use of infertility services are clearly present" (39). Studies confirm that compared with their presence in the US population, persons of middle to lower socioeconomic status and persons of African-American or Hispanic ethnicity are underrepresented in the population of treated infertility patients (18, 40).

As of this writing, 9 states (Connecticut, Delaware, Illinois, Maryland, Massachusetts, New Jersey, New Hampshire, New York, and Rhode Island) provide comprehensive or nearcomprehensive coverage for infertility treatment to at least some residents through state law mandates. These mandates require that private insurers cover diagnosis and treatment of infertility, including IVF. Although mandated coverage can result in better overall access, several state mandates carry significant restrictions (for example, Maryland imposes a 2-year waiting period, exempts religious employers, covers only married couples, and requires that the husband's sperm be used). Mandated coverage is curtailed further by federal law. Under the Employee Retirement Income Security Act, state law mandates, including the infertility mandates, cannot regulate or apply to plans that are self-insured, as are the plans of many large employers (41).

State-mandated insurance coverage has been shown to increase approximately 3-fold the use of infertility services. This increased use brings the per-capita rate of IVF closer to that in other countries that subsidize IVF, suggesting that the presence of insurance permits the medical community to address fertility needs that remain unmet in other states (42). Broader insurance coverage also is linked to better public health outcomes. A series of studies has shown that in states with mandated insurance coverage, the rate of IVF-related high-order multiple births (≥ 3 infants) and, in one study, twin births, is significantly lower than in nonmandated states. Observing that fewer embryos are transferred per cycle in the mandated states, researchers believe that insurance coverage reduces the financial pressure to transfer > 1 or 2 embryos in anyone (42-46). Indeed, studies suggest that patients choose elective single-embryo transfer more frequently when cost pressure is reduced through insurance coverage or other

reduced-price financing (47, 48). With a lower rate of multiple births comes improved maternal and newborn health, both desirable public health goals (49).

These data have led some observers to describe the paucity of insurance coverage as creating a situation of moral hazard: "patients' immediate financial interests are best met by maximizing their pregnancy chances on each treatment cycle, despite the health risks and long-term costs" (50). For patients, the benefits of insurance coverage for infertility are clear: they are able to obtain appropriate, needed medical treatment without incurring sometimes significant financial hardship. For physicians, the benefits include being able to provide care on the basis of the patient's medical needs rather than on what the patient can afford; facilitating elective single-embryo transfer and similar limits; and sparing physicians from having to turn away patients because of inability to pay, thus serving a social justice goal.

As important as they are, insurance mandates are imperfect in achieving equal access to and use of infertility treatments. Most critically, they are able to reach only a portion of the population in the mandated state. As noted above, most mandates apply only to persons who have private insurance, and only to those policies that must comply with the state insurance law. This means that infertility coverage may not be available to people who are uninsured, who obtain health coverage through Medicaid or other government programs, or who obtain health insurance from employers that are either self-insured, too small to be subject to the mandate (e.g., mandates in Illinois, Maryland, and New Jersey apply only to employers over a certain size), or based outside of the mandated state.

Studies have shown that even in states with comprehensive infertility mandates, infertility care still is used disproportionately by non-Hispanic white women of high socioeconomic and educational status (51–54). These limitations will be overcome only when fertility treatment is included in all health insurance coverage, whether private or public (e.g., federal employee benefits, retired and active duty military benefits, veterans benefits, Medicaid), just like diseases affecting other major bodily systems. The American Society for Reproductive Medicine (ASRM) strongly supports the inclusion of fertility care in all programs of coverage.

The Affordable Care Act of 2010 presented an opportunity to expand coverage for infertility to a much broader swath of the population; unfortunately, there is little indication it will achieve that result. The Affordable Care Act may improve disparities in infertility prevention, as men and women who previously were uninsured have access to sexually transmitted disease screening, treatment, and counseling. In addition, it should prevent infertility from being treated as a pre-existing condition that disqualifies individuals from obtaining future insurance coverage. Alternatively, the Affordable Care Act did not expand access to infertility treatment except in the states that had infertility mandates before December 2011. In fact, infertility care was not explicitly included in the list of "Essential Health Benefits" that all individual and small-group policies were required to offer.

There has been progress, although. In the past, most state insurance laws incorporated a definition of infertility that relied on 6–12 months of unprotected heterosexual intercourse, thus excluding same-sex couples and single individuals from mandated coverage. In 2018, New Jersey remedied this problem in part, amending its law to include women who are single or in same-sex relationships once they prove unable to conceive after a course of intrauterine inseminations. Fertility preservation also has gained ground. Between 2017 and 2019, 7 states (Connecticut, Delaware, Illinois, Maryland, New Hampshire, New York, and Rhode Island) passed laws requiring insurers to cover fertility preservation for patients facing gonadotoxic therapy.

Apart from state or federal laws, employers may voluntarily choose to include fertility coverage in the benefits they provide to employees. This is, to be sure, a stopgap measure until infertility becomes covered universally, but it often can be achieved far more quickly than a statewide law. Estimates of the percentage of employers that provide such a benefit appear mainly in industry surveys. Two recent surveys of human-resources departments reported that just over onequarter of responding employers offered some degree of infertility or IVF coverage, with companies of >500 employees more likely to offer it compared with smaller companies (55, 56). A third survey focused on large employers with \geq 20,000 people; the percentage of such employers offering an infertility benefit rose from 29% in 2016 to 44% in 2018 (57). However, the actual content of benefits varies widely, ranging from meaningful coverage to low monetary caps.

OTHER DISPARITIES IN ACCESS TO INFERTILITY TREATMENT

Economic barriers are not the only impediments to accessing infertility care. Chief among the noneconomic barriers are cultural and societal factors. Researchers who have studied African-American, Hispanic, Muslim, and Asian populations in the United States have noted that communication differences, cultural stigmas (including male and female aversion to being labeled infertile), cultural emphasis on privacy, and unfamiliarity or prior bad experiences with the US medical system can dissuade members of certain racial, ethnic, or religious groups from seeking care for infertility (58-62). Language differences also may discourage non-Englishspeaking patients from seeking care. Physicians may consciously or unconsciously make assumptions or possess biases about who deserves to be a parent and who wants or deserves treatment (63, 64). Women of color, for example, have reported that some physicians brush off their fertility concerns, assume they can get pregnant easily, emphasize birth control over procreation, and may dissuade them from having children (59).

Another obstacle is the burden of pursuing infertility treatment, particularly cycle-based treatments like IVF. In addition to being able to afford treatment, the patient must be able to take substantial time off from work for office visits and be able to travel to medical facilities that may be geographically distant (65–67). Many treatments require

repeated visits and the ability to follow complex medical instructions (68).

Geographically, the distribution of obstetrician-gynecologists and IVF centers varies widely among states and locales, and there is growing public health awareness that these services are inaccessible in many communities (69–71). As of 2017, 13 US states had ≤5 reproductive endocrinologists in practices accredited by the Society for Assisted Reproductive Technology (SART) (71). The highest concentrations of IVF centers and male reproductive specialists are found in states with mandated IVF insurance and high median income (72, 73). An estimated 18 million women of reproductive age live in locations with no ART clinics (74). Thus, geographic unavailability may impede many from seeking or obtaining treatment.

Patients may be denied access to effective care if the institution at which they seek treatment does not inform them of treatment options, such as IVF, because they conflict with the religious affiliation of the institution. Fair access also is impaired by providers who refuse to treat unpartnered individuals and same-sex couples, a practice that this Committee rejects (75).

DISPARITIES IN OUTCOMES OF INFERTILITY TREATMENT

As recently summarized, the research on IVF outcomes and race/ethnicity, including 3 studies using data collected from the SART database, suggests that when African-American, Asian, and Hispanic women attain access to ART, they experience lower success rates compared with non-Hispanic white women (58). The findings include evidence of lower implantation and clinical-pregnancy rates as well as increased miscarriage rates among certain minority women. These differences in treatment success are concerning; they are poorly understood and insufficiently studied, with explanations ranging from biologic factors to modifiable behavioral factors (40, 76, 77). Their rectification is critical to achieving reproductive health equity among women and men of different racial and ethnic backgrounds. More research is urgently needed to identify the causes and the remedies for these disparate outcomes.

ETHICAL BENEFITS OF IMPROVING ACCESS AND OUTCOMES

Reproduction is a fundamental interest and human right, and the access, treatment, and outcome disparities that are associated with infertility care and ART are a form of stratified reproduction that warrants correction (78, 79). Moreover, supporting increased access to reproductive and infertility care, including ART, appropriately recognizes infertility as a disease, in keeping with pronouncements by the WHO, American Medical Association, and worldwide trends. The status of fertility treatment as being available mainly to non-Hispanic whites and the economic elite perpetuates the unfair dismissal of fertility treatment as a lifestyle choice or as a luxury comparable to elective cosmetic surgery.

Improved access to ART also serves social justice ends. An Ontario, Canada, governmental panel on reproductive health has articulated these interests this way:

"We believe all Ontarians should have opportunities to build a family free from discrimination based on socio-economic status, geography, reproductive health needs, marital status or sexual orientation...The way Ontario's assisted reproduction system is currently operating is not acceptable. The cost of services means that treatments are out of reach for many people. Social and legal barriers limit access and, in some cases, force people to use less than ideal alternatives....We imagine an Ontario where people are given information on fertility and assisted reproduction, those who need assisted reproduction are not limited by what they can afford to pay, and where the services they receive are safe and effective (80)."

These interests apply equally in the United States and argue for universal coverage for infertility on par with coverage for other diseases. In December 2014, the Canadian Fertility and Andrology Society issued a position statement supporting public funding of IVF in Canada (81). The ASRM has joined the call for greater equity. In its 2020-2025 strategic plan, the ASRM lists as a priority "Engage with other medical and scientific organizations, payors, employers, and policymakers in advocating for equitable, inclusive, and affordable access to reproductive health and reproductive care" (82). To that end, ASRM has established an Access to Care Special Interest Group for members and in September 2015, convened a 2-day summit on improving access to care. This summit resulted in a white paper and a series of articles in the May 2016 issue of Fertility and Sterility which, collectively, present a range of approaches through which the profession can alleviate the exclusion of many from needed fertility care (83). Encouragingly, in a 2017 survey, 78% of SART members favored insurance coverage for anyone who required IVF for infertility treatment (84).

Legal scholars have argued that the lack of insurance coverage for infertility in the United States operates to discriminate against significant groups of people and prevents them from obtaining medical assistance to reproduce (79, 85, 86). In contrast, others have argued that expanded insurance coverage is not appropriate. This argument includes several subparts, including a disavowal that infertility is a disease or its treatment a medical necessity; that adoption is a suitable substitute for treatment to have a child (87); that insurance coverage is too expensive or is an unjustified use of limited health care dollars; or that physicians should not be subjected to the difficulties of dealing with insurance companies.

The ASRM has joined the worldwide trend of recognizing infertility as a disease and so arguments to the contrary or against the medical necessity of treatment are unpersuasive (88). Infertility represents the dysfunction of a major bodily system and burdens the quality of life in significant ways (50, 89). The continued exclusion of infertility treatment from most private health care insurance policies and

governmental programs of health care in the United States, long after fertility treatment has ceased to be experimental, discriminates against those who need medical help to procreate. As for adoption, it is an excellent family-building choice for many people, but it is paternalistic to mandate that it should be the sole (and again, expensive and self-pay) family-building option for all those who cannot conceive without medical assistance, or that its existence obviates the need for fair access to medical treatment.

The objection that infertility coverage is an especially expensive benefit is baseless. First, in practice, the price of this insurance is modest. In a 2006 survey of >600 employers that offered an infertility benefit, 91% reported that it did not add significant cost (90). Large employers have reported in other studies that a limited infertility benefit accounted for <0.5%-0.85% of their health care expenditures (91, 92). Although these low percentages may seem preordained because both infertility benefits at issue had lifetime monetary caps, Massachusetts, which has one of the most comprehensive infertility-insurance mandates in the country and no monetary cap, also reports modest costs for coverage. According to a 2016 report submitted to the Commonwealth as part of legislatively required reporting, infertility treatment accounted for somewhere between the outer bounds of a meager 0.12% and 0.95% of premium costs (93). Viewed in a broader context, infertility treatment is significantly less expensive than many insured medical procedures in the United States. For example, a cycle of IVF costs one-third as much as hip replacement surgery (94).

As for physician concerns, securing fair reimbursement rates from insurers is necessary, to be sure. Although there has been little empirical review of how accepting insurance may alter the practice of ART from the physician's perspective, one study found that the median number of IVF cycles performed annually per physician was significantly higher in states with mandated insurance vs. those without (98.2 vs. 78.2 cycles, respectively) (72). The concentration of physicians offering IVF per 100,000 women of reproductive age also was significantly higher in mandated vs. nonmandated states, which indicates it is economically feasible to practice ART when most patients are covered by insurance (72).

STRATEGIES FOR INCREASING ACCESS TO ART

There are no easy prescriptions to remove the above-described obstacles; actions by individuals are necessary but not sufficient to address problems in access to reproductive health care that are systemic. Physicians and other health care providers are encouraged to be aware of obvious and subtle obstacles to access and to be mindful of measures that can be taken to improve the use of fertility and fertility-preserving treatment, reduce the impact of disparities, and improve pregnancy outcomes for all.

Employer and insurer exclusion of coverage for infertility from the majority of private health care insurance policies and public health care programs in this country remains a significant barrier to access to ART treatment in the United States. This Committee supports the expansion of robust, comprehensive coverage as a matter of just access to health

care resources. Furthermore, the Committee finds it is not acceptable for members to decline to accept any health insurance from patients, particularly when reimbursement rates are reasonable. ART providers are further encouraged to establish or continue programs for lower-resource patients, either offering pro bono or reduced-price care, or contributing to or partnering with nonprofit organizations that help patients afford fertility treatment. The Ethics Committee urges all ART stakeholders to actively support legislation aimed at reducing the economic burden on patients paying for infertility treatment.

Additionally, clinicians should engage in evidencebased efforts to develop simplified and lower-cost methods of treatment. The cost savings, in turn, should be passed along to patients so that the financial burden of infertility care is reduced. Consonant with ASRM's Practice Committee guidance and its contribution to the Choosing Wisely campaign of the ABIM Foundation, physicians should work with patients to minimize or eliminate diagnostic procedures and treatments for which the clinical or costeffectiveness is uncertain, such as endometrial biopsy and postcoital testing in the standard infertility workup (95, 96). Regimens should be simplified when possible as certain diagnostic procedures and add-ons to treatment may increase prices and may be oversold to patients without offering proven clinical effectiveness. As new diagnostic and therapeutic regimens evolve, they should be evaluated to ensure that they have clinical efficacy. Offerings that are ultimately shown to have limited or no benefit should not be included in the diagnosis and treatment of infertility.

The details of setting up and financing a low-cost IVF program have been discussed in other literature (97–99). Importantly, economic analyses indicate that lower prices will increase the number of people in need who can obtain care and the use of elective single-embryo transfers (100).

Multilingual staff and physicians as well as interpreters may help overcome some barriers. Cultural competence training has been implemented in most medical schools and residencies with some, albeit limited, benefit (101). Physicians are encouraged to locate practices in underserved geographic locations. Medical practices may proactively adopt policies to support physicians in reaching underserved populations. If physicians avoid certain treatments because of their own religious beliefs or because of the religious affiliation of their institutions, patients nonetheless should be informed of those treatments and where they may be obtained.

Public education about the prevention, signs, and treatments of infertility, particularly if aimed at underserved populations and geographic areas, may alert patients to the possibility of treatment. Primary care physicians in all settings should be sensitized to their patients' fertility needs regardless of race, ethnicity, socioeconomic status, marital status, gender identity, or sexual orientation. Providers may assist researchers in monitoring trends in access by more consistently reporting patients' race/ethnicity where requested on the SART Clinic Outcomes Reporting System forms; currently, race and ethnicity are recorded only approximately 65% of the time (102).

CONCLUSION

In the United States and globally, health care disparities are pervasive; infertility prevention and treatment are not exceptions. The high price of treatment, inaccessibility of medical care, infertility that could have been prevented but was not (e.g., untreated infections leading to tubal damage or delays in seeking care), and differences in success rates pose immense burdens for infertile individuals. Several international organizations, including the WHO and United Nations, have made reproductive well-being a global health care priority; in the United States, the Centers for Disease Control and Prevention has issued a national action plan on the public health implications of infertility. The ASRM Ethics Committee encourages all reproductive care stakeholders to pursue opportunities for establishing affordable, safe, effective infertility services and treatments for underserved populations and for those in the United States who lack insurance coverage for the required treatment.

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REFERENCES

- Centers for Disease Control and Prevention. Key statistics from the National Survey of Family Growth. Available at: https://www.cdc.gov/nchs/nsfg/ key_statistics/i.htm#infertilityservices. Accessed February 9, 2021.
- Chandra A, Copen CE, Stephen EH. Infertility and impaired fecundity in the United States, 1982–2010: data from the National Survey of Family Growth (2013). Available at: www.cdc.gov/nchs/data/nhsr/nhsr067.pdf.

- Braveman P. Health disparities and health equity: concepts and measurement. Ann Rev Public Health 2006;27:167–94.
- Peterson MM. Assisted reproductive technologies and equity of access issues. J Med Ethics 2005;31:280–5.
- Skinner v. Oklahoma, 316 U.S. 535 (1942). Available at https://scholar.google.com/scholar_case?case=8050731321644873759&q=Skinner+v. +Oklahoma,+316+U.S.+535+(1942)&hl=en&as_sdt=80006&as_vis=1. Accessed June 2, 2021
- Bragdon v. Abbott, 524 U.S. 624 (1998). Available at https://www.supremecourt.gov/opinions/boundvolumes/524bv.pdf. Accessed June 2, 2021
- Robertson JA. Procreative liberty and harm to offspring in assisted reproduction. Am J Law Med 2004;30:7–40.
- McLeod C. Does reproductive justice demand insurance coverage for IVF? (2017) Philosophy Publications 470. Available at: https://ir.lib.uwo.ca/philosophypub/470/?utm_source=ir.lib.uwo.ca%2Fphilosophypub%2F470&utm_medium=PDF&utm_campaign=PDFCoverPages.
- Zegers-Hochschild F, Adamson GD, de Mouzon J, Ishihara O, Mansour R, Nygren K, et al. International Committee for Monitoring Assisted Reproductive Technology (ICMART) and the World Health Organization (WHO) revised glossary of ART terminology, 2009. Fertil Steril 2009;92:1520–4.
- American Medical Association (AMA). Resolution, 2017. Available at: https://www.ama-assn.org/delivering-care/public-health/ama-backs-glo bal-health-experts-calling-infertility-disease. Accessed February 9, 2021.
- Zegers-Hochschild F, Adamson GD, Dyer S, Racowsky C, de Mouzon J, Sokol R, et al. The international glossary on infertility and fertility care, 2017. Fertil Steril 2017;108:393–406.
- Inter-American Court of Human Rights. Case of Murillo et al. ("In Vitro Fertilization") v. Costa Rica, Judgment of November 28, 2012. Available at: www.corteidh.or.cr/docs/casos/articulos/seriec_257_ing.pdf.
- ESHRE Capri Workshop Group. Social determinants of human reproduction. Hum Reprod 2001;61:1518–26.
- Chambers GM, Sullivan EA, Ishihara O, Chapman MG, Adamson GD. The economic impact of assisted reproductive technology: a review of selected developed countries. Fertil Steril 2009;91:2281–94.
- Sunderam S, Kissin DM, Zhang Y, Folger SG, Boulet SL, Warner L, et al. Assisted reproductive technology surveillance–United States 2016. MMWR Surveill Summ 2019;68:1–23.
- European Society of Human Reproduction and Embryology. ART fact sheet. Available at: https://www.eshre.eu/Press-Room/Resources. Accessed June 2, 2021.
- Kupka MS, Ferraretti AP, de Mouzon J, Erb K, D'Hooghe T, Castilla JA, et al. Assisted reproductive technology in Europe, 2010: results generated from European registers by ESHRE. Hum Reprod 2014;29:2099–113.
- Chandra A, Copen CE, Stephen EH. Infertility service use in the United States: data from the National Survey of Family Growth, 1982–2010. Available at: www.cdc.gov/nchs/data/nhsr/nhsr073.pdf.
- Greil AL, Slauson-Blevins KS, Tiemeyer S, McQuillan J, Shreffler KM. A new way to estimate the potential unmet need for infertility services among women in the United States. J Womens Health 2016;25:133–8.
- Mehta A, Nangia AK, Dupree JM, Smith JF. Limitations and barriers in access to care for male factor infertility. Fertil Steril 2016;105:1128–37.
- Ethics Committee of the American Society for Reproductive Medicine.
 Fertility preservation and reproduction in patients facing gonadotoxic therapies: a committee opinion. Fertil Steril 2013;100:1224–31.
- 22. Galhardo A, Pinto-Goveia J, Cunha M, Matos M. The impact of shame and self-judgment on psychopathology in infertile patients. Hum Reprod 2011; 26:2408–14.
- 23. Greil AL, Slauson-Blevins K, McQuillan J. The experience of infertility: a review of recent literature. Sociol Health Illn 2010;32:140–62.
- 24. Bleil ME, Gregorich SE, Adler NE, Sternfeld B, Rosen MP, Cedars MI. Race/ ethnic disparities in reproductive age: an examination of ovarian reserve estimates across four race/ethnic groups of healthy, regularly cycling women. Fertil Steril 2014;101:199–207.
- Huddleston HG, Cedars MI, Sohn SH, Giudice LC, Fujimoto VY. Racial and ethnic disparities in reproductive endocrinology and infertility. Am J Obstet Gynecol 2010;202:413–9.

- Fujimoto VY, Jain T, Alvero R, Nelson LM, Catherino WH, Olatinwo M, et al. Proceedings from the Conference on Reproductive Problems in Women of Color. Fertil Steril 2010;94:7–10.
- Fujimoto VY, Luke B, Brown MB, Jain T, Armstrong A, Grainger DA, et al. Racial and ethnic disparities in assisted reproductive technology outcomes in the United States. Fertil Steril 2010;93:382–90.
- 28. Jain T. Socioeconomic and racial disparities among infertility patients seeking care. Fertil Steril 2006;85:876–81.
- Letourneau JM, Smith JF, Ebbel EE, Craig A, Katz PP, Cedars MI, et al. Racial, socioeconomic, and demographic disparities in access to fertility preservation in young women diagnosed with cancer. Cancer 2012;118: 4579–88.
- Wu AK, Odisho AY, Washington SL, Katz PP, Smith JF. Out-of-pocket fertility patient expense: data from a multicenter prospective infertility cohort. J Urol 2014;191:427–32.
- 31. Katz P, Showstack J, Smith JF, Nachtigall RD, Millstein SG, Wing H, et al. Costs of infertility treatment: results from an 18-month prospective cohort study. Fertil Steril 2011;95:915–21.
- Prosper Marketplace. Fertility treatments in the United States: sentiment, costs and financial impact. 2015. Available at: https://blog.prosper.com/ 2015/05/20/fertility-treatments-in-the-united-states-sentiment-costs-andfinancial-impact/. Accessed November 25, 2019.
- 33. Bedrick BS, Anderson K, Broughton DE, Hamilton B, Jungheim ES. Factors associated with early in vitro fertilization treatment discontinuation. Fertil Steril 2019;112:105–11.
- 34. Dupree JM. Insurance coverage of male infertility: what should the standard be? Transl Androl Urol 2018;7(Suppl 3):S310–6.
- 35. Elliott P, Wu A, Washington S, Katz P, Smith J. The cost of male infertility care: how much are patients spending? J Urol 2013;189:e937s.
- Daneshmand S, Bedient CE, Garner F, Shapiro BS. Expanding same-sex couples' access to assisted reproduction. Fertil Steril 2016;106(Suppl): F111
- Klitzman R. How much is a child worth? Providers' and patients' views and responses concerning ethical and policy challenges in paying for ART. PLos One 2017:12:e011939.
- American Society for Reproductive Medicine. Cross-border reproductive care: an ethics committee opinion. Fertil Steril 2016;106:1627–33.
- Centers for Disease Control and Prevention. National public health action plan for the detection, prevention, and management of infertility 2014.
 Available at: www.cdc.gov/reproductivehealth/Infertility/PDF/DRH_NAP_ Final_508.pdf. Accessed May 5, 2015.
- Kelley AS, Qin Y, Marsh EE, Dupree JM. Disparities in accessing infertility care in the United States: results from the National; Health and Nutrition Examination Survey, 2013-2016. Fertil Steril 2019;112: 562–8.
- American Society for Reproductive Medicine. State infertility insurance laws. Available at: https://www.reproductivefacts.org/resources/stateinfertility-insurance-laws. Accessed February 9, 2021.
- **42.** Jain T, Harlow BL, Hornstein MD. Insurance coverage and outcomes of in vitro fertilization. N Engl J Med 2002;347:661–6.
- Reynolds MA, Schieve LA, Jeng G, Peterson HB. Does insurance coverage decrease the risk for multiple births associated with assisted reproductive technology? Fertil Steril 2003;80:16–23.
- 44. Henne MB, Bundorf MK. Insurance mandates and trends in infertility treatments. Fertil Steril 2008;89:66–73.
- Martin JR, Bromer JG, Sakkas D, Patrizio P. Insurance coverage and in vitro fertilization outcomes: a U.S. perspective. Fertil Steril 2011; 95:964–9.
- Hornstein MD. Is insurance coverage for in vitro fertilization a good thing?
 Fertil Steril 2018;109:619.
- Stillman RJ, Richter KS, Banks NK, Graham JR. Elective single embryo transfer: a 6-year progressive implementation of 784 single blastocyst transfers and the influence of payment method on patient choice. Fertil Steril 2009; 92:1895–906.
- Provost MP, Thomas SM, Yeh JS, Hurd WW, Eaton JL. State insurance mandates and multiple birth rates after in vitro fertilization. Obstet Gynecol 2016;128:1205–14.

- 49. Boulet SL, Crawford S, Zhang Y, Sunderam S, Cohen B, Bernson D, et al. Embryo transfer practices and perinatal outcomes by insurance mandate status. Fertil Steril 2015;104:403–9.e1.
- 50. Johnston J, Gusmano MK. Why we should all pay for fertility treatment: an argument from ethics and policy. Hastings Cent Rep 2013;43:18–21.
- 51. Jain T, Hornstein MD. Disparities in access to infertility services in a state with mandated insurance coverage. Fertil Steril 2005;84:221–3.
- Dieke AC, Zhang Y, Kissin DM, Barfield WD, Boulet SL. Disparities in assisted reproductive technology utilization by race and ethnicity, United States 2014: a commentary. J Womens Health 2017;26:605–8.
- Seifer DB, Simsek B, Wantman E, Kotlyar AM. Status of racial disparities between black and white women undergoing assisted reproductive technology in the US. Reprod Biol Endocrinol 2020;18:113.
- 54. Tierney K, Cai Y. Assisted reproductive technology use in the United States: a population assessment. Fertil Steril 2019;112:1136–43.e4.
- 55. Society for Human Resource Management. 2018 employee benefits.

 Available at: https://www.shrm.org/hr-today/trends-and-forecasting/
 research-and-surveys/Documents/2018%20Employee%20Benefits%20
 Report.pdf.
- International Foundation of Employee Benefit Plans. Employee benefits survey. 2018 survey results. Available at: https://www.ifebp.org/store/ employee-benefits-survey/Pages/default.aspx. Accessed July 10, 2019.
- Mercer. Mercer's national survey of employer-sponsored health plans.
 Available at: https://www.mercer.us/what-we-do/health-and-benefits/strategy-and-transformation/mercer-national-survey-benefit-tre nds.html. Accessed February 9, 2021.
- Armstrong A, Plowden TC. Ethnicity and assisted reproductive technologies. Clin Pract 2012;9:651–8.
- Bell AV. Beyond (financial) accessibility: inequalities within the medicalisation of infertility. Sociol Health Illn 2010;32:631–46.
- Cordasco KM, Ponce NA, Gatchell MS, Traudt B, Escarce JJ. English language proficiency and geographical proximity to a safety net clinic as a predictor of health care access. J Immigr Minor Health 2011;13:260–7.
- Inhorn MC, Fakih MH. Arab Americans, African Americans, and infertility: barriers to reproduction and medical care. Fertil Steril 2006;85: 844–52
- **62.** McCarthy-Keith DM, Schisterman EF, Robinson RD, O'Leary K, Lucidi RS, et al. Will decreasing assisted reproduction technology costs improve utilization and outcomes among minority women? Fertil Steril 2010;94:2587–9
- White L, McQuillan J, Greil AL. Explaining disparities in treatment seeking: the case of infertility. Fertil Steril 2006;85:853–7.
- Duke CC, Stanik C. Overcoming lower-income patients' concerns about trust and respect from providers. Available at: https://www.healthaffairs. org/do/10.1377/hblog20160811.056138/full/. Accessed July 11, 2019.
- **65.** Wu AK, Elliott P, Katz PP, Smith JF. Time costs of fertility care: the hidden hardship of building a family. Fertil Steril 2013;99:2025–30.
- Missmer SA, Seifer DB, Jain T. Cultural factors contributing to health care disparities among patients with infertility in Midwestern United States. Fertil Steril 2011:95:1943–9.
- **67.** Domar AD, Rooney K, Hacker MR, Sakkas D, Dodge LE. Burden of care is the primary reason why insured women terminate in vitro fertilization treatment. Fertil Steril 2018;109:1121–6.
- Nachtigall RD, Castrillo M, Shah N, Turner D, Harrington J, Jackson R. The challenge of providing infertility services to a low-income immigrant Latino population. Fertil Steril 2009;92:116–23.
- 69. ACOG Committee Opinion No. 586: Health disparities in rural women. Obstet Gynecol 2014;123(2 Pt 1):384-88.
- American College of Obstetricians and Gynecologists. ACOG committee opinion no. 586: health disparities in rural women. Obstet Gynecol 2014;123:384–8.
- 71. RESOLVE: The National Infertility Association. State fertility scorecard 2017.

 Available at: http://familybuilding.resolve.org/fertility-scorecard/index.

 html. Accessed February 9, 2021.
- Hammoud A, Gibson M, Stanford J, White G, Carrell DT, Perterson M. In vitro fertilization and utilization in the United States: a study of

- demographic, social, and economic factors. Fertil Steril 2009;91: 1630–5
- Nangia AK, Likosky DS, Wang D. Distribution of male infertility specialists in relation to the male population and assisted reproductive technology centers in the United States. Fertil Steril 2010;94: 599–609.
- Harris JA, Menke MN, Haefner JK, Moniz MH, Perumalswami CR. Geographic access to assisted reproductive technology health care in the United States: a population-based cross-sectional study. Fertil Steril 2017;107:1023–7.
- Ethics Committee of the American Society for Reproductive Medicine. Access to fertility treatment irrespective of marital status, sexual orientation, or gender identity: an Ethics Committee opinion. Fertil Steril. In press.
- Humphries LA, Chang O, Humm K, Sakkas D, Hacker MR. Influence of race and ethnicity on in vitro fertilization outcomes: systematic review. Am J Obstet Gynecol 2016;214:212.e1–17.
- McQueen DB, Schufreider A, Lee SM, Feinberg EC, Uhler ML. Racial disparities in in vitro fertilization outcomes. Fertil Steril 2015;104:398–402.e1.
- Van der Poel S, Davis JB. Ensuring human rights in the provision of fertility care and infertility interventions. Fertil Steril 2018;110(Suppl):e276.
- Curtis M. Inconceivable: how barriers to infertility treatment for lowincome women amount to reproductive oppression. Geo J on Poverty L & Pol'y 2018;XXV:323–42.
- Ontario Ministry of Children and Youth Services. Raising expectations: recommendations of the Expert Panel on Infertility and Adoption, Ontario, Canada, summer 2009. Available at: http://www.children.gov.on.ca/htdocs/English/documents/infertility/RaisingExpectationsEnglish.pdf. Accessed June 2, 2021.
- Canadian Fertility and Andrology Society. The case for public funding of in vitro fertilization with elective single embryo transfer (eSET) in Canada. Available at: https://cfas.ca/_Library/2020positionstatements/CFAS-Position-Statement-Public_Funding_IVF_and_eSET_Dec_2014-EN.pdf. Accessed June 2, 2021.
- American Society for Reproductive Medicine. Strategic 2020-2025 plan.
 Available at: https://www.asrm.org/about-us/initiatives/Strategic-Plan/.
 Accessed February 9, 2021.
- 83. Davis OK, Sokol RZ. Introduction. Fertil Steril 2016;105:1111–1112. The Access to Care white paper is available at: https://www.asrm.org/globalassets/asrm/asrm-content/news-and-publications/news-and-resear ch/press-releases-and-bulletins/pdf/atcwhitepaper.pdf.
- 84. Seifer DB, Wantman E, Sparks AE, Luke B, Doody KJ, Toner JP, et al. National survey of the Society for Assisted Reproductive Technology membership regarding insurance coverage for assisted reproductive technologies. Fertil Steril 2018;110:1081–8.e1.
- **85.** Pendo EA. The politics of infertility: recognizing coverage exclusions as discrimination. Conn Ins L J 2005;293:2004–5.
- Cardinale JR. The injustice of infertility insurance coverage: an examination of marital status restrictions under state law. Albany Law Rev 2012;75: 2133–49.
- 87. Falloon K, Rosoff PM. Who pays? Mandated insurance coverage for assisted reproductive technology. Virtual Mentor 2014;16:63–9.
- Practice Committee of the American Society for Reproductive Medicine. Definitions of infertility and recurrent pregnancy loss: a committee opinion. Fertil Steril 2020;113:533–5.
- Domar AD, Zuttermeister PC, Friedman R. The psychological impact of infertility: a comparison with patients with other medical conditions. J Psychosom Obstet Gynaecol 1993;14(Suppl):45–52.
- Isaacs JC. Infertility coverage is good business. Fertil Steril 2008;89:1049–
 52.
- **91.** Silverberg K, Meletiche D, Del Rosario G. An employer's experience with infertility coverage: a case study. Fertil Steril 2009;92:2103–5.
- **92.** Van Voorhis BJ, Stovall DW, Allen BD, Syrop CH. Cost-effective treatment of the infertile couple. Fertil Steril 1998;70:995–1005.
- Compass Health Analytics. State-mandated health insurance benefits and health insurance costs in Massachusetts. Prepared for Center for Health Information and Analysis, Commonwealth of Massachusetts. Available at:

- http://www.chiamass.gov/assets/docs/r/pubs/16/2016-Combined-Comprehensive-12-2016.pdf.
- 94. Adashi EY, Cohen J, Hamberger L, Jones HW Jr, de Kretser DM, Lunenfeld B, et al. Public perception on infertility and its treatment: an international survey. The Bertarelli Foundation Scientific Board. Hum Reprod 2000;15:330–4.
- American Society for Reproductive Medicine. Ten things physicians and patients should question. Available at: www.choosingwisely.org/wp-content/uploads/2015/02/ASRM-Choosing-Wisely-List.pdf. Accessed February 9, 2021.
- 96. American Society for Reproductive Medicine. Fertility evaluation of the infertile woman: a committee opinion. Fertil Steril. In press.
- ESHRE Task Force on Ethics and Law, Pennings G, de Wert G, Shenfield F, Cohen J, Tarlatzis B, et al. Providing infertility treatment in resource-poor countries. Hum Reprod 2009;24:1008–11.

- 98. Ombelet W. Is global access to infertility care realistic? The Walking Egg Project. Reprod Biomed Online 2014;28:267–72.
- 99. Van Blerkom J, Ombelet W, Klerkx E, Janssen M, Dhont N, Nargund G, et al. First births with a simplified culture system for clinical IVF and embryo transfer. Reprod Biomed Online 2014;28:310–20.
- 100. Chambers GM, Hoang VP, Sullivan EA, Chapman MG, Ishihara O, Zegers-Hochschild F, et al. The impact of consumer affordability on access to assisted reproductive technologies and embryo transfer practices: an international analysis. Fertil Steril 2014;101:191–8.e4.
- Horvat L, Horey D, Romios P, Kis-Rigo J. Cultural competence education for health professionals. Cochrane Database Syst Rev 2014;5:CD009405.
- Wellons MF, Fujimoto VY, Baker VL, Barrington DS, Broomfield D, Catherino WH, et al. Race matters: a systematic review of racial/ethnic disparity in Society for Assisted Reproductive Technology reported outcomes. Fertil Steril 2012;98:406–9.

Disparidades en el acceso a un tratamiento eficaz para la infertilidad en los Estados Unidos: una opinión del Comité de Ética.

En los Estados Unidos, las disparidades económicas, raciales, éticas, geográficas y de otro tipo impiden el acceso al tratamiento de fertilidad y afectan los resultados del tratamiento. Esta opinión examina los factores que contribuyen a estas disparidades, propone acciones para abordarlas y reemplaza el documento del mismo nombre, publicado por última vez en 2015.