ly ambivalent. Nevertheless, some trainees or clinicians may seek to opt out of the SGM health education that their training programs or employers attempt to mandate. The legal protections outlined in 2018 by the new HHS Conscience and Religious Freedom Division refer to the right to refuse participation in certain medical procedures[5]; whether people may successfully invoke these protections to avoid general education on SGM health care remains to be seen. If clinicians and trainees do begin opting out of such education, publicly designating competency in SGM health may become more important.

Inclusion of SGM health topics in licensing and certification examinations could also help ensure that trainees learn important information about these populations. SGM health education could be incorporated into a broader conceptual framework of health disparities so that clinicians understand how patients' SGM identities intersect with other core aspects of their identity, such as race or ethnicity, to contribute to their health-related experiences.

The history of medicine has demonstrated that as new evidence emerges, clinicians update their knowledge and skills to better serve all patients. We are optimistic that the same will be true for SGM health.

Disclosure forms provided by the authors are available at NEJM.org.

From the National LGBT Health Education Center, the Fenway Institute (K.L.A., A.S.K.), and the Division of Infectious Diseases (K.L.A.) and Department of Psychiatry (A.S.K), Massachusetts General Hospital — all in Boston.

1. Sexual & Gender Minority Research Office. Annual report, fiscal year 2017. Bethesda, MD: National Institutes of Health (https://dpcpsi.nih.gov/sites/default/files/FY2017_SGMRO_AnnualReport_RF508_FINAL_508.pdf).
2. Obedin-Maliver J, Goldsmith ES, Stewart L, et al. Lesbian, gay, bisexual, and transgender-related content in undergraduate medical education. JAMA 2011;306:971-7.
3. James SE, Herman JL, Rankin S, Keisling M, Mottet L, Anafi M. The report of the 2015 U.S. Transgender Survey. Washington, DC: National Center for Transgender Equality, December 2016 (https://transequality.org/sites/default/files/docs/usts/USTS-Full-Report-Dec17.pdf).
4. Hollenbach AD, Eckstrand KL, Dreger A, eds. Implementing curricular and institutional climate changes to improve health care for individuals who are LGBT, gender nonconforming, or born with DSD: a resource for medical educators. Washington, DC: Association of American Medical Colleges, 2014 (https://www.aamc.org/download/414172/data/lgbt.pdf).
5. Conscience and religious freedom. Washington, DC: Department of Health and Human Services, Office for Civil Rights, 2018 (https://www.hhs.gov/conscience/index.html).

DOI: 10.1056/NEJMp1810522

Persons of Nonbinary Gender — Awareness, Visibility, and Health Disparities

Walter Liszewski, M.D., J. Klint Peebles, M.D., Howa Yeung, M.D., and Sarah Arron, M.D., Ph.D.

Two-spirit, agender, gender fluid, genderqueer, gender-nonconforming, third sex: whatever the terminology, in many cultures throughout history, some people have identified as neither male nor female, or as "nonbinary." As our society's concept of gender evolves, so does the visibility of contemporary nonbinary people. Yet many members of the medical community may not know how to interact with nonbinary patients respectfully or recognize their unique needs and barriers to care.

Nonbinary people's gender identity lies outside the boundaries of a strict male–female dichotomy. As a gender identity, it is independent of biologic sex (male, female, or intersex) and sexual orientation (heterosexual, homosexual, bisexual, or pansexual). Nonbinary and transgender persons are considered gender minorities, but there may be differences between the two (see Glossary).

Nonbinary people are becoming more visible in popular culture and social media, and several U.S. states and cities currently or will soon allow a gender-neutral designation on driver's licenses (Arkansas, the District of Columbia, California, Maine, Minnesota, and Oregon) or birth certificates (California, New Jersey, Oregon, Washington State, and New York City).

Current data on health disparities affecting gender minorities come from two large surveys: the 2011 National Transgender Discrimination Survey (6450 participants, 33% of whom did not identify as exclusively male or female and 14% of whom identified as gender-nonconforming) (transequality.org)[3] and the 2015 U.S. Transgender Survey (27,715 participants, 31% of whom identified as nonbinary) (transequality.org).[2] As compared with the general public in other studies, gender-minority persons are more likely to live in poverty (29% vs. 12%), be unemployed (15% vs. 5%), be uninsured (14% vs. 11%), be the victim of intimate-partner violence (24% vs. 18%), have attempted suicide (40% vs. 4.6%), have experienced severe psychological stress in the past month (39% vs. 5%), and have HIV (1.4% vs. 0.3%). Thirty percent have been

Glossary of Gender and Sex Terms.*

Cisgender: Having a gender identity that is aligned with one's sex assigned at birth — for example, identifying as a woman and having been born with female genitalia.
Gender expression: Presentation of one's gender identity through actions and appearance.[1]
Gender identity: One's internal sense of one's gender and how it fits into societal categories, such as woman, man, or nonbinary person.[1] A person's gender identity may change over time.
Gender minority: Persons and groups not identifying as cisgender. Gender minorities may identify as nonbinary, transgender, or both. Although some identify exclusively as nonbinary or transgender, given that some identify as both, without specific demographic data it is difficult to discuss the health care needs of one group without including the other.
Intersex: A biologic sex that does not fit typical definitions of female or male; it is also known as "differences of sex development." Intersex persons may have any gender identity (male, female, or nonbinary) and sexual orientation.
Nonbinary: Identifying as neither male nor female, having a gender other than male or female, having multiple genders, or not having a gender. Other common terms used to describe people who reject the binary gender model include gender-nonconforming, genderqueer, agender, third gender or third sex, and gender-fluid.[2] Whereas cisgender people and some transgender people may clearly delineate their gender identity within the conventional gender binary (for example, exclusively identifying as female), nonbinary persons often maintain a more expansive concept of gender.
Sex: The reproductive phenotype, categorized as male, female, or intersex. Sex is typically assigned at birth on the basis of the appearance of external genitalia and, if necessary, by assessment of chromosomes and gonads.[1]
Sexual orientation: One's sexual identity in terms of the gender of people to whom one is attracted, such as heterosexual (straight), homosexual (gay or lesbian), bisexual, and others. Sexual orientation is a separate and distinct concept from gender.[1]
Transgender: Having a gender identity that does not exclusively match one's sex assigned at birth.[1] Some transgender persons identify exclusively with the sex "opposite" to the one they were assigned at birth. For example, a transgender woman is someone who was assigned as male at birth but identifies as female. Other transgender persons may identify with both genders or perhaps neither. This last possibility highlights that some transgender persons have a broad gender identity and may identify as both transgender and nonbinary.

* This terminology is fluid and evolving. There may be substantial variations in meaning and interpretation of various terms depending on the individual person, context, and culture.

homeless at some time, and 9% report having been physically assaulted in the previous year because of their gender identity.[2] Gender-nonconforming persons are more likely than transgender persons to have experienced mistreatment in school (70% vs. 59%) or by the police (29% vs. 22%) and are less likely to be "out" in the workplace (33% vs. 44%) or with family (35% vs. 64%).[3]

Nonbinary persons often receive inadequate medical care or face discrimination. Among gender-minority patients, 19% have been refused treatment on the basis of their gender identity,[3] 23% have avoided treatment in the previous year for fear of discrimination, and 33% have avoided medical care because of cost.[2] These negative experiences may explain why in two studies, only 28% and 40% of gender-minority persons said that their health care provider was aware of their gender identity.[2,3] Fear of discrimination is greater among nonbinary persons who are otherwise socioeconomically marginalized, such as people of color, disabled people, low-income people, and undocumented immigrants.[2,3]

Children with nonbinary gender face additional challenges. They may encounter discrimination in school and lack support from teachers and peers.[1] In the 2015 U.S. Transgender Survey, 16% of nonbinary students reported being physically attacked in school because of their gender identity, and 10% left school because of mistreatment.[2] Parents may prevent children from expressing their gender identity,[4] and it may be even more difficult to identify clinicians with experience treating nonbinary children than it is to find experienced clinicians for nonbinary adults.[1] Physicians can help children by expressing support, providing information on local support groups, educating teachers and school officials, and connecting families to national organizations such as Gender Spectrum (genderspectrum.org) and Gender Diversity (genderdiversity.org).

Specialty clinics for transgender and nonbinary patients have been created by academic medical centers and community-based health systems focused on gender and sexual minorities.[1,5] However, not all patients will want to use — or have access to — these institutions. To ensure access to gender-affirming health care for nonbinary people more broadly, best practices will have to be disseminated beyond specialized centers. Providers and health care systems can implement several initiatives to improve care for gender-minority patients.

Clear documentation of patients' gender and pronouns can be included in intake forms and electronic medical records. Misgendering a patient by using a wrong pronoun may contribute to a stigmatizing environment that hinders health care delivery.[5] Whereas cisgender people may use "he," "him," and "his" or "she," "her," and "hers," nonbinary people may opt to use these pronouns or prefer gender-neutral ones such as "they," "them," and "theirs," or "ze," "hir," and "hirs."[2] Like the titles Mr., Ms., Miss, and Mrs., a gender-neutral title, "Mx" (pronounced "mix" or "mux") may be used. Or a nonbinary person may not use any pronouns or titles. Examples of gender-neutral intake forms are available from the University of California, San Francisco (UCSF) (transhealth.ucsf.edu).[1] and

the National LGBT Health Education Center (lgbthealtheducation.org).[5]

Although it is important to have an open dialogue with patients, nonbinary patients should not be obligated to educate health care professionals about their health care needs.[1] Instead, the entire health care team, including clinicians and staff, can become more gender-literate by receiving training in respecting patients' gender identity and gender expression. Educational materials are available from the World Professional Association for Transgender Health (wpath.org).[4] and the National LGBT Health Education Center.[5]

Institutional nondiscrimination policies can be expanded to include gender identity and expression. Processes for assessing patient satisfaction and lodging grievances should allow for confidential reporting of experiences relevant to patients' gender identity and expression.

The physical environment can also be optimized for inclusivity. Gender-neutral restrooms should be made available whenever possible.[1] Some 59% of gender-minority people report avoiding using public restrooms, and 8% have developed urinary or kidney infections as a result.[2] Gender-affirming and gender-neutral signage, as well as inclusive magazines, can help create safe spaces in waiting and examination rooms.

Gender-minority patients may not receive age-appropriate cancer screenings or anticipatory guidance if a physician makes assumptions about their sex, gender, or anatomy. Clinicians can use an "organ inventory" to document the presence or absence of specific organs to ensure appropriate screenings and evaluation.[1] For example, a nonbinary person with a cervix and breasts should undergo age-appropriate Pap smears and mammograms.[1,4] Contraception should be discussed with patients with a functioning uterus and ovaries, and erectile dysfunction may be a concern for patients with a penis.

As part of their gender affirmation, some nonbinary people may pursue body modification through surgical procedures, hormone therapy, or both. For nonbinary patients, it's more appropriate for discussion of these procedures to focus on achieving specific features than on "feminization" or "masculinization." More information and practice guidelines are available from UCSF,[1] the American Society of Plastic Surgeons (plasticsurgery.org), and the Endocrine Society (endocrine.org).

Although nonbinary people face known health disparities, population-based data may help identify additional health risks, outcomes, and disparities. Many American epidemiologic studies — including the American Community Survey, Current Population Survey, and National Health Interview Survey — do not collect information on nonbinary and transgender people. The Centers for Disease Control and Prevention may stop collecting data on gender and sexual minorities in their Behavioral Risk Factor Surveillance System. Unless patients and providers advocate for including gender identity in these studies, the ability to identify health disparities will be lost. One promising project is the PRIDE Study, the first national, long-term health study of sexual and gender minorities in the United States (pridestudy.org).

Nonbinary and transgender people exemplify diversity in gender identity, whereas intersex people illustrate diversity in biologic sex. This distinction emphasizes the broader importance of distinguishing among sex as a biologic variable, gender as a social construct, and gender identity as an internal sense of oneself. Our expanding concept of gender has implications for all patients: we will have to consider gender's historical and future role in medicine, from research and education to practice guidelines and outcomes.

If they have not already, physicians will encounter patients who do not identify as exclusively male or female. Creating a welcoming environment, educating health care teams, and advancing crucial research will improve the care of our nonbinary patients.

Disclosure forms provided by the authors are available at NEJM.org.

From the University of Minnesota, Minneapolis (W.L.); the University of Wisconsin, Madison (J.K.P.); Emory University, Atlanta (H.Y.); and the University of California, San Francisco, San Francisco (S.A.).

1. Deutsch MD, ed. Guidelines for the primary and gender-affirming care of transgender and gender nonbinary people. 2nd ed. San Francisco: Center of Excellence for Transgender Health, June 17, 2016 (http://transhealth.ucsf.edu/pdf/Transgender-PGACG-6-17-16.pdf).
2. James SE, Herman JL, Rankin S, Keisling M, Mottet L, Anafi M. The report of the 2015 U.S. Transgender Survey. Washington, DC: National Center for Transgender Equality, 2016 (https://transequality.org/sites/default/files/docs/usts/USTS-Full-Report-Dec17.pdf).
3. Grant JM, Mottet LA, Tanis J, Harrison J, Herman JL, Keisling M. Injustice at every turn: a report of the National Transgender Discrimination Survey. Washington, DC: National Center for Transgender Equality and National Gay and Lesbian Task Force, 2011 (https://transequality.org/sites/default/files/docs/resources/NTDS_Report.pdf).
4. World Professional Association for Transgender Health. Standards of care for the health of transsexual, transgender, and gender nonconforming people. 7th ed. (https://www.wpath.org/media/cms/Documents/SOC%20v7/SOC%20V7_English.pdf).
5. National LGBT Health Education Center home page (https://www.lgbthealtheducation.org).

DOI: 10.1056/NEJMp1812005