



# Current Problems in Diagnostic Radiology

journal homepage: [www.cpdjournal.com](http://www.cpdjournal.com)



## U.S. Health Disparities – Opportunities for Radiologists



Providing “equitable” care to patients is one of the six patient care goals issued by the Institute of Medicine (IOM) and of interest to radiologists, although certainly on a much smaller scale compared to other medical specialties.<sup>1,2</sup>

It may be confusing that the terms “inequity” and “inequality” are sometimes used interchangeably.<sup>3</sup> As a point of clarification, “equality” and “inequality” relate to factors that we *cannot* control, while “equity” and “inequity” refer to factors we *can* control. For example, if there is a genetic defect in a part of the population causing them to die younger, and if this gene defect is beyond our control, this would be an example of an inequality. The populations with and without the gene defect are simply “not the same” (= inequality). If, however, a part of the population dies younger because they cannot access the medication they need, this would represent an example of inequity. It is “not fair” (= inequity) that some members of the population can and some cannot access the medication they need (Fig 1). In the United States, the term “health disparities” is more commonly used, which refers to differences between population groups with regards to attaining their full health potential as measured by differences in disease incidence, prevalence, mortality, burden of disease, and other adverse health conditions.<sup>4</sup>

Health disparities have complex causes that are diverse, evolving, and often interdependent.<sup>5</sup> Race and ethnicity have been the major focus of health disparity studies and shown to relate to differences in health outcomes, such as mortality and morbidity.<sup>5</sup> In recent years, the role of sexual orientation and gender identity in health disparities has been recognized.<sup>5</sup> Health disparities can impact our economy, national security, and the workforce. Health expenditures are increased because of health disparities, for example when population groups obtain delayed or inadequate care and then require expensive and extensive care later in life. U.S. children who are subject to health care disparities may experience increased illness as adults that effectively prevent them from reaching their full potential in life.<sup>5</sup> Reportedly 27% of young adults in the United States are precluded from military service due to obesity.<sup>6</sup> The Surgeon General of the United States issued a list of actions toward eliminating health disparities for a wide range of stakeholders, from the government to individuals and families.<sup>7</sup> Some of these action items could apply to radiologists, as they refer to (1) providing opportunities for preventive screenings, (2) increasing cultural and communication competence of service providers, (3) diversify the provider workforce to better meet patients’ needs, and (4) match patients’ health literacy levels.

Local radiology practices can assure that communities with certain ethnic or racial demographics have equal access to advanced imaging modalities and techniques.<sup>2</sup> For example, numerous studies have shown disparities in mammography utilization based on race and ethnicity.<sup>8</sup> There are many factors contributing to this disparity,

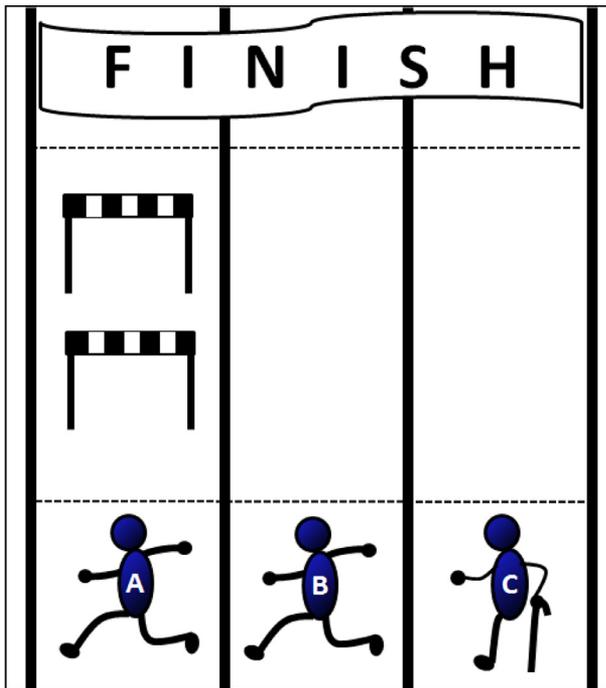
including not having regular visits with a primary care physician and socioeconomic barriers.<sup>8</sup> There is some evidence that patient one-on-one education, appointment reminders, and reducing structural barriers can improve mammography screening participation.<sup>8</sup>

Being a culturally competent health care provider means respecting the diversity of patients in terms of language, communication styles, beliefs, attitudes, and behaviors.<sup>9</sup> This skill is amenable to training, especially implicit bias awareness.<sup>10,11</sup> In addition, cultural competence may require structural changes, such as hiring chaperones, creating prayer spaces, providing access to translator services, adjusting access for patients with various disabilities.<sup>12</sup> For example, half of women undergoing transvaginal ultrasound prefer a chaperone in the room when the sonographer is a male.<sup>13</sup> Diversifying the work force itself is another means of achieving cultural competence of service providers so that the variety of values and beliefs that exists among the patient population is then also represented by members of the workforce.<sup>11</sup>

Another opportunity for radiologists is to acknowledge patients’ health literacy levels. For example, patient educational materials, such as local practice interventional procedure explanations<sup>14</sup> or materials shared on RadiologyInfo.Org<sup>15</sup> are not meeting goals for the average U.S. patient’s reading level. This is also true for radiology reports, which can be accessed by patients through patient portals or medical record requests.<sup>16</sup> Radiologists can use multimedia enhanced reporting with hyperlinks and annotated images to help patients understand their radiology findings.<sup>17</sup>

Interestingly, a study showed that the gender of the treating physician influences survival rates after myocardial infarction in women.<sup>18</sup> These study findings highlight the need to remove provider bias from treatment decisions, which can be achieved through standardized care pathways. In radiology, care standardization can be fostered by writing American College of Radiology appropriateness criteria to guide the use of imaging resources based on clinical scenarios and through implementation of clinical decision support systems that facilitate imaging decisions.<sup>19</sup> Using standardized and evidence-based management recommendations for incidental findings can help in decreasing disparities, although compliance with recommendations may vary based on racial and ethnic factors that may require community and structural-based interventions, such as education and appointment reminders.<sup>20</sup>

It is true- considering the large scale of health disparities in the United States any actions taken by radiologist may just feel like a drop in the bucket, but I believe that for individual patients receiving evidence-based and standardized care and being able to understand their radiology procedures and results can make a big difference such as translator services for patients who are not proficient in the English language. Periodically surveying the local patient population can help uncover specific needs [Inst Div Health Man].



**FIG 1. Inequity and inequality.** All runners (A, B, and C) are participating in the same race: they have the same starting point, start at the same time, and have to cover the same distance. Runner A is being treated unfairly compared with runner B and C, because runner A is required to overcome additional hurdles that the other racers do not have. This is unfair, it represents an inequity. Runner C has only one leg and uses a cane. The race is set up fairly for runner C, because it is set up in the same way as for runner B, so there is equity. Runner C is different from runner B, however, and to reach the finish line at the same time as runner B, runner C needs to be given additional support to achieve equality.

Nadja Kadom, MD\*

<sup>a</sup> Department of Radiology and Imaging Sciences, Emory University School of Medicine, Atlanta, GA

<sup>b</sup> Department of Radiology, Children's Healthcare of Atlanta (Egleston), Atlanta, GA

E-mail address: [nkadom@emory.edu](mailto:nkadom@emory.edu)

## References

1. Institute of Medicine (US) Committee on Quality of Health Care in America. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington (DC): National Academies Press (US); 2001.

2. Jordan JE, Lightfoote JB. Overcoming health disparities in the United States: The value imperative for healthier populations. *J Am Coll Radiol* 2018;15:479–82, <https://doi.org/10.1016/j.jacr.2017.10.029>.
3. Lynch JF, Perera IM. Framing health equity: US health disparities in comparative perspective. *J Health Polit Policy Law* 2017;42:803–39, <https://doi.org/10.1215/03616878-3940450>.
4. NIH (National Institutes of Health). Health disparities. 2014. Available at: <http://www.nhlbi.nih.gov/health/educational/healthdisp>. Accessed August 29, 2018.
5. National Academies of Sciences, Engineering, and Medicine. Health and Medicine Division. Board on Population Health and Public Health Practice. Committee on Community-Based Solutions to Promote Health Equity in the United States. *Communities in Action: Pathways to Health Equity* editors. In: Baciu A, Negussie Y, Geller A, Weinstein JN, eds. *Communities in Action: Pathways to Health Equity*, Washington (DC): National Academies Press (US); 2017. PMID: 28418632. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK425848/>. Accessed April 29, 2019.
6. The Heritage Foundation. "The Looming National Security Crisis: Young Americans Unable to Serve in the Military" (2018). Available at: <https://www.heritage.org/defense/report/the-looming-national-security-crisis-young-americans-unable-serve-the-military>. Accessed April 29, 2019.
7. Surgeon general. "Elimination of Health Disparities". Available at: <https://www.surgeongeneral.gov/priorities/prevention/strategy/elimination-of-health-disparities.html>. Accessed April 29, 2019.
8. Ahmed AT, Welch BT, Brinjikji W, et al. Racial disparities in screening mammography in the United States: A systematic review and meta-analysis. *J Am Coll Radiol* 2017;14:157–65. e9. <https://doi.org/10.1016/j.jacr.2016.07.034>.
9. AHRQ. "Improving cultural competence to reduce health disparities for priority populations". Available at: <https://effectivehealthcare.ahrq.gov/topics/cultural-competence/research-protocol>. Accessed April 30, 2019.
10. Harvard, Project Implicit. Available at: <https://implicit.harvard.edu/implicit/takeatest.html>. Accessed April 30, 2019.
11. Jackson CS, Gracia JN. Addressing health and health-care disparities: The role of a diverse workforce and the social determinants of health. *Public Health Rep* 2014;129(Suppl 2):57–61.
12. American Academy of Orthopedic Surgeons [AAOS]. *Culturally Competent Care Guidebook*. Available at: <https://implicit.harvard.edu/implicit/takeatest.html>. Accessed April 30, 2019.
13. Davenport MS, Brimm D, Rubin JM, et al. Patient preferences for chaperone use during transvaginal sonography. *Abdom Radiol (NY)* 2016;41:324–33, <https://doi.org/10.1007/s00261-015-0556-z>.
14. Sadigh G, Hawkins CM, O'Keefe JJ, et al. Can patients comprehend the educational materials that hospitals provide about common IR procedures? *J Vasc Interv Radiol* 2015;26:1156–61, <https://doi.org/10.1016/j.jvir.2015.04.029>.
15. Hansberry DR, John A, John E, et al. A critical review of the readability of online patient education resources from RadiologyInfo.Org. *AJR Am J Roentgenol* 2014;202:566–75, <https://doi.org/10.2214/AJR.13.11223>.
16. Trofimova A, Vey BL, Safdar NM, et al. Radiology report readability: An opportunity to improve patient communication. *J Am Coll Radiol* 2018;15:1182–4, <https://doi.org/10.1016/j.jacr.2018.03.032>.
17. Folio LR, Machado LB, Dwyer AJ. Multimedia-enhanced radiology reports: Concept, components, and challenges. *Radiographics* 2018;38:462–82, <https://doi.org/10.1148/rg.2017170047>.
18. Greenwood BN, Carnahan S, Huang L. Patient-physician gender concordance and increased mortality among female heart attack patients. *Proc Natl Acad Sci USA* 2018;115:8569–74, <https://doi.org/10.1073/pnas.1800097115>.
19. Lau BD, Haider AH, Streiff MB, et al. Eliminating health care disparities with mandatory clinical decision support: The venous thromboembolism (VTE) example. *Med Care* 2015;53:18–24, <https://doi.org/10.1097/MLR.0000000000000251>.
20. Cho JK, Zafar HM, Lalevic D, et al. Patient factor disparities in imaging follow-up rates after incidental abdominal findings. *AJR Am J Roentgenol* 2019;212:589–95, <https://doi.org/10.2214/AJR.18.20083>.