Women's Health Issues 32-1 (2022) 3–8

WOMEN'S HEALTH ISSUES
www.whijournal.com

Commentary

Reducing Implicit Bias in Maternity Care: A Framework for Action

Jonathan Y. Siden, BSW, BA [a,b,*], Alissa R. Carver, MD [c], Okeoma O. Mmeje, MD, MPH [c,d], Courtney D. Townsel, MD, MSc [c]

[a] *University of Michigan Medical School, Ann Arbor, Michigan*
[b] *University of Michigan Ford School of Public Policy, Ann Arbor, Michigan*
[c] *Department of Obstetrics & Gynecology, University of Michigan Medical School, Women's Hospital, Ann Arbor, Michigan*
[d] *Department of Health Behavior and Health Education, University of Michigan School of Public Health, Women's Hospital, Ann Arbor, Michigan*

Article history: Received 24 June 2021; Received in revised form 14 October 2021; Accepted 15 October 2021

The United States has higher rates of maternal morbidity and mortality than peer countries, a burden disproportionately carried by Black women (Admon et al., 2018; Petersen et al., 2019; World Health Organization, 2015). Numerous factors are thought to contribute, including a high chronic disease burden and poor-quality care (Admon et al., 2018; Howell, Egorova, Balbierz, Zeitlin, & Hebert, 2016). Differential outcomes persist, however, even when pregnant Black women obtain care in high-quality hospitals and when controlling for comorbidities (Howell et al., 2016). Thus, in addition to addressing structural racism, health systems must ensure that individual clinical encounters are free of bias (Howell et al., 2018).

Clinicians' implicit bias—unconscious attitudes and beliefs that impact behaviors like body language, tone of voice, receptivity, or decision-making—affects treatment decisions and outcomes (Hall et al., 2015; Howell et al., 2018). In obstetrics, bias may be experienced throughout pregnancy and the postpartum period. For instance, Hispanic women report lower trust in their clinician than other groups, and Black women report worse postpartum pain management (Declercq, Sakala, Corry, Applebaum, & Herrlich, 2013). One in 10 Black mothers reports they were "treated poorly" because of their identity when hospitalized compared to just 3 in 100 White mothers. Implicit bias can also be rooted in seemingly "evidence-based" practice. Until a recent revision, the widely used Trial of Labor After Cesarean (TOLAC) calculator stratified patients by race and ethnicity based on an observational, not pathophysiologic, basis (Grobman et al., 2007, 2021). Commentators note that the lower rates of "successful" TOLAC for Black women in the original validation study may be due to circular logic stemming from biased decision-making by providers, that is, sending Black laboring women to the operating room sooner than their White peers (Vyas et al., 2019). Similarly, race-based correction factors for anemia may bias maternity care clinicians, leading to lower treatment rates of iron-deficiency anemia and explaining the disproportionately high rates of blood transfusions at birth for Black women (Igbinosa, Leonard, Butwick, & Lyell, 2020). Many groups, including the Alliance for Innovation in Maternal Health (AIM), the American College of Obstetricians and Gynecologists (ACOG), and the Society of Maternal Fetal Medicine, have made it a priority to reduce maternity care clinicians' implicit bias (Council on Patient Safety in Women's Healthcare, n.d.; Racial and Ethnic Disparities in Obstetrics and Gynecology, 2015; Racial Disparities in Health Outcomes, 2017).

Although implicit bias is widely recognized as a threat to quality obstetric care—and some states, such as California, Illinois, and Michigan, now mandate that clinicians receive implicit bias training—there is little evidence-based guidance for health systems and clinicians on effective interventions (California Dignity in Pregnancy and Childbirth Act, 2020; Illinois Health Care and Human Service Reform Act, 2021; Whitmer, 2020). For example, the AIM bundle to reduce racial disparities does not provide specific guidance (Council on Patient Safety in Women's Healthcare, 2016). Even when a program is implemented, most existing implicit bias interventions are found to be ineffective when rigorously evaluated (FitzGerald, Martin, Berner, & Hurst, 2019). In fact, all but one evaluated intervention lack durability beyond seconds to minutes (Lai et al., 2016). The field is further challenged by a lack of standardized measures of bias (FitzGerald et al., 2019). Despite these challenges, health systems have an ethical, and sometimes legal, obligation to act because of the urgent stakes for pregnant Black women.

* Correspondence to: Jonathan Y. Siden, University of Michigan Medical School, 1301 Catherine St, Ann Arbor, MI. Phone: (734) 936-4000.
E-mail address: jsiden@med.umich.edu (J.Y. Siden).

https://doi.org/10.1016/j.whi.2021.10.008

We compiled core concepts present in the literature that can be used to design implicit bias interventions. We propose that three domains are critical: education and self-awareness, communication skills, and cognitive reframing (Figure 1A). We also strongly advocate that patient advisory boards or focus groups be central to the development process and engaged early as collaborators in all domains. Interventions should include all care team members, including physicians, midwives, nurses, social workers, front desk staff, and custodial staff. Although efficacy data within each domain are suboptimal, interventions may have a greater effect when combined. This notion is supported by other obstetric safety and quality improvement initiatives that are enhanced by multidimensional approaches to change (Pettker & Grobman, 2015). Because specific literature on bias intervention in obstetrics is limited, we provide a mixture of evidence from within and outside of obstetrics in this commentary (Howell et al., 2018).

Domains For Change

Education and Self-awareness

Precise definitions of implicit bias and increased awareness of one's bias provide a common foundation for change. Educational initiatives should also incorporate cognitive science such as classical conditioning to contextualize interventions (Kirwan Institute for the Study of Race and Ethnicity, 2018; Sukhera & Watling, 2018). Reflective self-assessment tools such as the publicly accessible Implicit Associations Test of Project Implicit can also help participants to understand how implicit bias operates on an individual level (Greenwald, McGhee, & Schwartz, 1998; Project Implicit, 2011). Although the Implicit Associations Test does not predict discriminatory behavior, it has usefulness as a discussion starter (Sukhera, Wodzinski, Rehman, & Gonzalez, 2019). Given that some research has demonstrated resistant responses to implicit bias education, expert facilitators can create a nonjudgmental learning culture that promotes receptivity of participants (Pendry, Driscoll, & Field, 2007; Sukhera & Watling, 2018; Sukhera, Wodzinski, et al., 2019). Online modules, such as the Kirwan Institute Implicit Bias Module Series, have also been developed for asynchronous learning, easing distribution (Kirwan Institute for the Study of Race and Ethnicity, 2018). Grand rounds and lecture series can also be used for sharing educational resources that promote self-awareness.

Core concepts

- Distribute an educational module for developing common definitions that integrates cognitive science. Consider asynchronous modules, lecture series, or didactic sessions to decrease barriers to participation.
- Use the Implicit Associations Test to help participants understand implicit bias and as a tool for self-reflection.
- Use expert facilitators who can help participants remain receptive to emotionally challenging content.

Communication Skills

Communication skills are important as they may drive or mitigate the impact of implicit bias (Braveman et al., 2017; Hagiwara, Elston Lafata, Mezuk, Vrana, & Fetters, 2019). This point is especially true in obstetrics care, where patients and clinicians meet frequently over the course of a pregnancy and discuss complex anticipatory guidance. Women of color identify

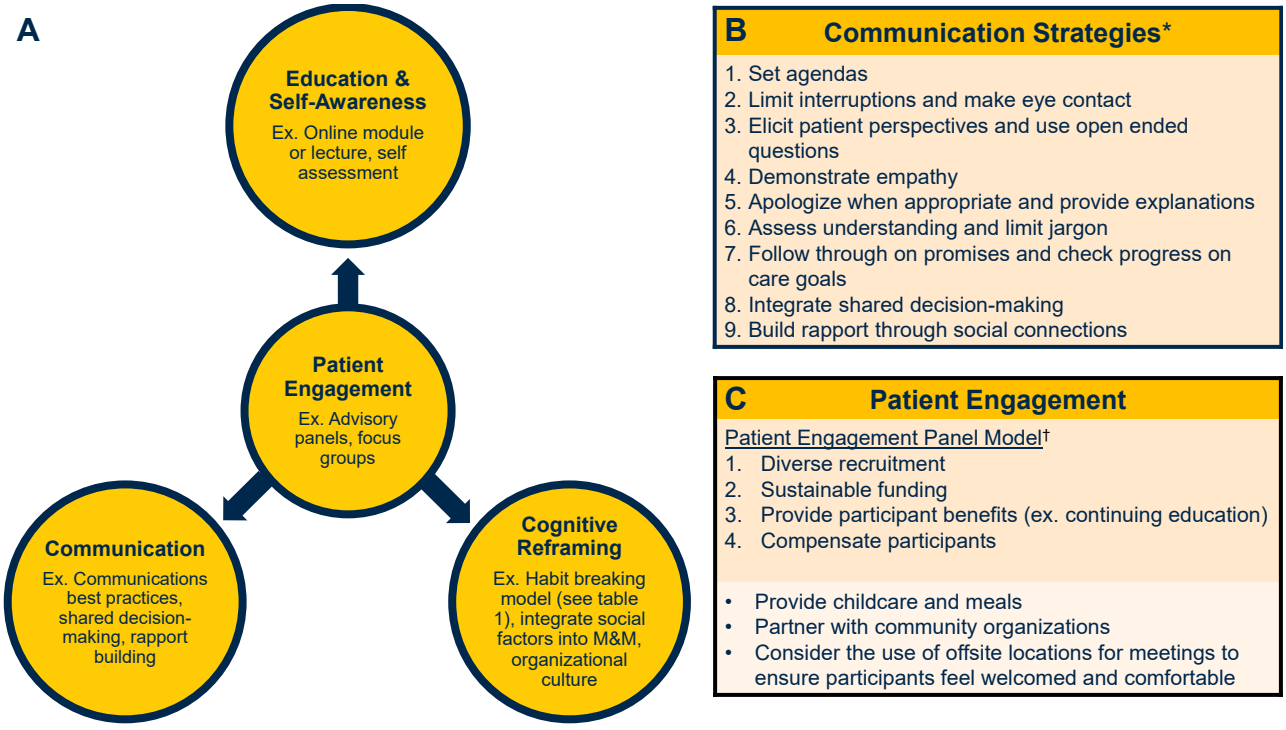

Figure 1. Domains for change to decrease implicit bias in clinical care. (A) Intervention domains. (B) Communication strategies. (C) Models for patient input. M&M, morbidity and mortality conference. *Effective patient-physician communication, 2014; Frankel & Sherman (2015); Thom (2001). †Arkind et al. (2015).

poor information sharing during pregnancy as a locus of constrained autonomy (Altman et al., 2019). For instance, they describe receiving misleading information meant to influence their decisions and do not feel they are a part of the "the team." This paternalistic approach experienced by pregnant women of color is in stark contrast with ethical standards of care (Ethical Decision Making in Obstetrics and Gynecology, 2007).

Antecedents of perceived discrimination include curt responses, lack of eye contact and smiling, dismissiveness, and impatience (Tajeu et al., 2015). Among obstetrics patients of color, relationship building and sharing information about care, such as treatment options, can reduce perceived discrimination (Altman et al., 2019). Importantly, acknowledging perceived bias can restore clinical relationships (Gonzalez et al., 2018). In addition to improving the patient experience, effective communication can mitigate the roots of bias itself. Positive contact between people of different identities can reduce prejudice via empathy, decreased anxiety, and increased perspective-taking (imagining the viewpoint of a member of a stereotyped group) (Devine, Forscher, Austin, & Cox, 2012; Pettigrew & Tropp, 2008; van Ryn et al., 2015).

Key principles of improved clinician communication such as demonstrating empathy and limiting interruptions should be integrated into all clinical encounters (Figure 1B) (Effective patient-physician communication, 2014; Frankel & Sherman, 2015; Thom, 2001). Shared decision-making—that is, making treatment choices by giving patients information and eliciting their priorities—can also help (Effective patient-physician communication, 2014). Rapport building can be enhanced by connecting on a "social level." Health systems and individual clinics can provide communications training for clinicians and staff, integrate communications best practices into chart reminders, and prioritize communications skills in hiring and promotion (Casebeer et al., 1999; Effective patient-physician communication, 2014; Zolnierek & Dimatteo, 2009).

Core concepts

- Improve patient–clinician communication by using best practices (Figure 1B). This practice may require training as part of undergraduate and graduate medical education, and clinician and staff professional development curricula.
- Acknowledge perceived bias to help restore a clinical relationship (Gonzalez et al., 2018).
- Prioritize communications best practices in chart reminders and hiring and promotion decisions.

Cognitive Reframing

Given that implicit bias is an involuntary process, interventions must act on the underlying cognition. This point is important in obstetrics because of clinicians' reliance on cognitive frameworks for decision-making, especially when confronted with high-acuity conditions such as childbirth complications. For instance, Black women are more likely than White women to undergo cesarean section for nonreassuring fetal heart tones (Washington, Caughey, Cheng, & Bryant, 2012). Because the interpretation of fetal heart rate tracings allows clinician subjectivity and has poor specificity for neonatal outcomes, this practice provides ample opportunity for clinician bias to impact counseling on timing and indication for cesarean birth (Ponsiglione, Cosentino, Cesarelli, Amato, & Romano, 2021). Discredited theories about racial differences in pelvic floor anatomy and the TOLAC calculator's prior use of race in predicting outcomes may also have shaped how clinicians counsel patients who are considering vaginal birth after cesarean (Vyas et al., 2019). Because both of these concepts have been standard teachings in obstetrics education until recently, correcting for them will require a concerted effort by each individual clinician.

Only one intervention—a "habit-breaking" model—has been demonstrated to have long-term efficacy in decreasing implicit bias (Devine, 1989; FitzGerald et al., 2019; Forscher, Mitamura, Dix, Cox, & Devine, 2017). Users of this model recognize when bias may occur and then actively reframe their thoughts through stereotype replacement, counter-stereotypic imaging, individuation, perspective-taking, and increasing opportunities for intergroup contact (Table 1) (Devine et al., 2012). It has been implemented in medicine, albeit not in an obstetrics context. One academic medical center conducted a 2.5-hour workshop that decreased gender bias in hiring 3 months after the intervention (Carnes et al., 2015). Cognitive reframing can be supported and enhanced with the following three strategies. First, expert facilitators may be used to address clinicians' negative reactions, vulnerability, defensiveness, and avoidance (Cox & Devine, 2019; Pendry et al., 2007). Next, integrating a patient's situational, economic, and social circumstances (e.g., housing insecurity) into morbidity and mortality rounds will support reframing clinical decisions (Cheryan, Plaut, Davies, & Steele, 2009; Kawakami, Dovidio, Moll, Hermsen, & Russin, 2000). Finally, ancillary strategies such as reducing the use of pejorative or depersonalizing language (i.e., "a person with substance use disorder" instead of "addict") and the use of diverse visual materials for marketing or patient education can reframe how implicit biases impact clinical decision-making.

Core concepts

- Develop trainings using the cognitive science of habit breaking (Table 1). Use expert facilitation to contextualize trainings, create a safe space for growth, and mitigate negative reactions from participants.
- Integrate perspective-taking and social determinants of health into morbidity and mortality rounds.
- Support intensive interventions with organizational-culture change, such as integrating diverse images in marketing and patient education and decreasing the use of pejorative or depersonalizing language.

Patient Engagement

Patient engagement is foundational to developing and implementing initiatives to address implicit bias because it

Table 1
Definition of Terms for Habit Breaking Model to Decrease Implicit Bias

Term	Definition
Stereotype replacement	Recognize a stereotype, label it as such, and replace it with a nonstereotypic response
Counter-stereotypic imaging	Think of a person from the stereotyped group who does not exemplify the stereotype
Individuation	Focus on individual characteristics of a member of the stereotyped group, not their membership in that group
Perspective-taking	Imagine the perspective of a member of a stereotyped group
Increased contact	Interpersonal exposure to members of stereotyped groups

Adapted from Devine et al. (2012).

centralizes patients' expertise. Early input can ensure that patients meaningfully inform the intervention and that they are viewed as collaborators rather than tokenized (Patient-Centered Outcomes Research Institute, n.d.). Once involved, patients can define target groups for the intervention, types of bias, and core strategies for mitigation within each domain (McLemore et al., 2018; Salm Ward, Mazul, Ngui, Bridgewater, & Harley, 2013; Tajeu et al., 2015). Key principles include understanding sociocultural and historical context and building relationships (Principles of Community Engagement, 2011). The Patient Engagement Panel model is one specific option for patient engagement, with success tied to diverse recruitment, sustainable funding, and benefits to participants such as continuing education and compensation (Figure 1C) (Arkind et al., 2015). Pregnancy-focused groups should consider how to decrease the burden on participants, namely, parents of young children, such as providing childcare and meals at meetings. Potential recruits may have had traumatizing experiences with the health systems or clinics now seeking their input. Organizers should consider power dynamics when engaging patients, potentially partnering with community organizations and meeting at venues that feel welcoming and familiar to participants such as a neighborhood community center or local school (Israel, Schulz, Parker, & Becker, 1998). Health systems can also capitalize on existing patient engagement bodies. For example, regional perinatal quality collaborative groups in Michigan integrate community members and parents into quarterly collaboration and planning meetings (Michigan Department of Health and Human Services, n.d.). They use multiple models of engagement, including community members voting on priority areas for the committee, community members sitting on workgroups as full members, and conducting patient focus groups in the development of new programs (H. Joa, Personal Communication July 19, 2021).

Core Concepts

- Develop structures for meaningful patient participation that are well supported by the institution and implement best practices (Figure 1C).
- Address power dynamics between patients and the health system by partnering with community groups or holding meetings off the hospital campus.
- Query patient stakeholders on the scope of interventions, types of bias experienced, and suggestions for improvement.

Outcomes Measures

Implicit bias initiatives are hampered by a lack of robust measures of bias or outcomes, making efficacy challenging to assess (FitzGerald et al., 2019). Further, evaluations often conflate knowledge retention with changes to attitudes and behaviors, which may not be accurate. In the absence of strong measures, we propose that implicit bias initiatives approach assessment as nested levels: programmatic measures, intermediate outcomes, and end outcomes (Table 2). First, programmatic measures such as participation rates and satisfaction can help to define initial implementation success. Next, intermediate outcomes can be implemented in each domain to rate whether program goals were met. For example, communication initiatives can be measured by patient satisfaction, which has been tied to perceived discrimination, stratified by race (Tajeu et al., 2015). Although cognitive reframing initiatives lack robust, standardized psychometric measures, one published intervention used tailored assessments to measure varied domains (Table 2) (Carnes et al., 2015). Finally, end-outcomes measurements can assess patient perspectives stratified by race on topics such as perceived support, perceived quality of care, and empowerment to raise concerns with a clinician. Given that data-sharing can lead to improved outcomes, results should be shared at all health system levels, including clinics, clinicians, allied health professionals, and staff (Dowding et al., 2015).

Table 2
Multilevel Outcomes Measures for Assessing Implicit Bias Interventions

Level	Sample Measures
Programmatic outcomes	• Participation rates • Participant satisfaction

Intermediate outcomes	• Education: Knowledge assessment
	• Communication: Patient satisfaction stratified by race, patient experiences of microaggressions, observed clinical encounters
	• Cognitive reframing (Carnes et al., 2015)
	  ○ Awareness of personal bias
	  ○ Motivation for change
	  ○ Self-efficacy
	  ○ Expectations that one's actions will lead to change
	  ○ Listing of specific actions that reduced bias

End outcomes	• Perceived support • Perceived quality of care • Empowerment to raise concerns with a clinician • Clinical outcomes stratified by race

Special Considerations for Implementation

Special consideration should be given to how implicit bias training is implemented because of its emotional salience. For interventions to be successful, leadership must communicate a commitment to bias reduction and provide resources for program implementation. Buy-in from key stakeholders, including clinicians, staff, and community groups, should be established early in the process. Buy-in can be enhanced by proactively confronting resistance to change and using interval successes to generate momentum (Baloh, Zhu, & Ward, 2018). In addition to enhanced coordination, interprofessional collaboration should be prioritized because it may lead to stigma-related attitudinal shifts (Sukhera, Miller, et al., 2019). Interventions cannot occur in isolation: Programs should be iterative and long term (Pettker & Grobman, 2015). The use of formal implementation models such as "Plan–Do–Check–Act" can help to ensure continuous improvement given the limited durability of interventions studied thus far and the early stage of the literature base (Taylor et al., 2014). Strategies to improve sustainability include flexible program structures, eliciting feedback, and establishing a dedicated oversight group (Braithwaite et al., 2020). Independent obstetrics and midwifery practices can still implement comprehensive programs, even if the scale is more limited, by ensuring that elements of each domain are addressed in some form. Partnering with regional collaboratives can also help to increase access to training.

Conclusions

The decrease of implicit bias is essential for any campaign to combat racism in the pursuit of reduced maternal morbidity and mortality in the United States. Interventions must prioritize

patient perspectives and address education, communication, and cognitive reframing. A lack of robust outcomes measures will hamper initial efforts, but this should not dampen our commitment to be better. To enhance this work, national organizations such as ACOG, Society of Maternal Fetal Medicine, and AIM can provide specific, actionable, and accessible resources for each domain. Further, funders can prioritize the piloting and evaluation of initiatives that comprehensively address all domains of implicit bias mitigation.

References

Admon, L. K., Winkelman, T. N. A., Zivin, K., Terplan, M., Mhyre, J. M., & Dalton, V. K. (2018). Racial and ethnic disparities in the incidence of severe maternal morbidity in the United States, 2012-2015. *Obstetrics and Gynecology*, 132(5), 1158–1166.

Altman, M. R., Oseguera, T., McLemore, M. R., Kantrowitz-Gordon, I., Franck, L. S., & Lyndon, A. (2019). Information and power: Women of color's experiences interacting with health care providers in pregnancy and birth. *Socail Science and Medicine*, 238, 112491.

Arkind, J., Likumahuwa-Ackman, S., Warren, N., Dickerson, K., Robbins, L., Norman, K., & DeVoe, J. E. (2015). Lessons learned from developing a patient engagement panel: An OCHIN report. *Journal of the American Board of Family Medicine*, 28(5), 632–638.

Baloh, J., Zhu, X., & Ward, M. M. (2018). Types of internal facilitation activities in hospitals implementing evidence-based interventions. *Health Care Management Review*, 43(3), 229–237.

Braithwaite, J., Ludlow, K., Testa, L., Herkes, J., Augustsson, H., Lamprell, G., … Zurynski, Y. (2020). Built to last? The sustainability of healthcare system improvements, programmes and interventions: A systematic integrative review. *BMJ Open*, 10(6), e036453.

Braveman, P., Heck, K., Egerter, S., Dominguez, T. P., Rinki, C., Marchi, K. S., & Curtis, M. (2017). Worry about racial discrimination: A missing piece of the puzzle of Black-White disparities in preterm birth? *PLoS One*, 12(10), e0186151.

California Dignity in Pregnancy and Childbirth Act, SB 464, Senate 2020.

Carnes, M., Devine, P. G., Baier Manwell, L., Byars-Winston, A., Fine, E., Ford, C. E., … Sheridan, J. (2015). The effect of an intervention to break the gender bias habit for faculty at one institution: a cluster randomized, controlled trial. *Academic Medicine*, 90(2), 221–230.

Casebeer, L. L., Klapow, J. C., Centor, R. M., Stafford, M. A., Renkl, L. A., Mallinger, A. P., & Kristofco, R. E. (1999). An intervention to increase physicians' use of adherence-enhancing strategies in managing hypercholesterolemic patients. *Academic Medicine*, 74(12), 1334–1339.

Cheryan, S., Plaut, V. C., Davies, P. G., & Steele, C. M. (2009). Ambient belonging: How stereotypical cues impact gender participation in computer science. *Journal of Personality and Social Psychology*, 97(6), 1045–1060.

Council on Patient Safety in Women's Healthcare. What is AIM?. Available: https://safehealthcareforeverywoman.org/aim-program/. Accessed: July 19, 2021.

Council on Patient Safety in Women's Healthcare (2016). Reduction of peripartum racial/ethnic disparities. Available: https://safehealthcareforeverywoman.org/patient-safety-bundles/reduction-of-peripartum-racialethnic-disparities/. Accessed: July 17, 2021.

Cox, W. T. L., & Devine, P. G. (2019). The prejudice habit-breaking intervention. In Mallett, R. K., & Monteith, M. J. (Eds.), *Confronting prejudice and discrimination: The science of changing minds and behaviors* (pp. 249–274). New York: Academic Press.

Declercq, E. R., Sakala, C., Corry, M. P., Applebaum, S., & Herrlich, A. (2013). *Listening to mothers III: Pregnancy and birth*. New York City, NY: Childbirth Connection.

Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology*, 56(1), 5–18.

Devine, P. G., Forscher, P. S., Austin, A. J., & Cox, W. T. (2012). Long-term reduction in implicit race bias: A prejudice habit-breaking intervention. *Journal of Experimetnal and Social Psychology*, 48(6), 1267–1278.

Dowding, D., Randell, R., Gardner, P., Fitzpatrick, G., Dykes, P., Favela, J., … Currie, L. (2015). Dashboards for improving patient care: review of the literature. *International Journal of Medical Informatics*, 84(2), 87–100.

Effective patient-physician communication. ACOG Committee Opinion No. 587. (2014). *Obstetrics and Gynecology*, 123(2), 389–393.

Ethical decision making in obstetrics and gynecology. ACOG Committee Opinion No. 390. (2007). *Obstetrics and Gynecology*, 110(6), 1479–1487.

FitzGerald, C., Martin, A., Berner, D., & Hurst, S. (2019). Interventions designed to reduce implicit prejudices and implicit stereotypes in real world contexts: A systematic review. *BMC Psychology*, 7(1), 29.

Forscher, P. S., Mitamura, C., Dix, E. L., Cox, W. T. L., & Devine, P. G. (2017). Breaking the prejudice habit: Mechanisms, timecourse, and longevity. *Journal of Experimetnal and Social Psychology*, 72, 133–146.

Frankel, R. M., & Sherman, H. B. (2015). The secret of the care of the patient is in knowing and applying the evidence about effective clinical communication. *Oral Diseases*, 21(8), 919–926.

Gonzalez, C. M., Deno, M. L., Kintzer, E., Marantz, P. R., Lypson, M. L., & McKee, M. D. (2018). Patient perspectives on racial and ethnic implicit bias in clinical encounters: Implications for curriculum development. *Patient Education and Counseling*, 101(9), 1669–1675.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. (1998). Measuring individual differences in implicit cognition: the implicit association test. *Journal of Personaluty and Social Psychology*, 74(6), 1464–1480.

Grobman, W. A., Lai, Y., Landon, M. B., Spong, C. Y., Leveno, K. J., Rouse, D. J., … Human Development Maternal-Fetal Medicine Units, N. (2007). Development of a nomogram for prediction of vaginal birth after cesarean delivery. *Obstetrics and Gynecology*, 109(4), 806–812.

Grobman, W. A., Sandoval, G., Rice, M. M., Bailit, J. L., Chauhan, S. P., Costantine, M. M., … Eunice Kennedy Shriver National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network. (2021). Prediction of vaginal birth after cesarean delivery in term gestations: A calculator without race and ethnicity. *American Journal of Obstetrics and Gynecology*. [Epub ahead of print].

Hagiwara, N., Elston Lafata, J., Mezuk, B., Vrana, S. R., & Fetters, M. D. (2019). Detecting implicit racial bias in provider communication behaviors to reduce disparities in healthcare: Challenges, solutions, and future directions for provider communication training. *Patient Education and Counseling*, 102(9), 1738–1743.

Hall, W. J., Chapman, M. V., Lee, K. M., Merino, Y. M., Thomas, T. W., Payne, B. K., … Coyne-Beasley, T. (2015). Implicit racial/ethnic bias among health care professionals and its influence on health care outcomes: A systematic review. *American Journal of Public Health*, 105(12), e60–e76.

Howell, E. A., Brown, H., Brumley, J., Bryant, A. S., Caughey, A. B., Cornell, A. M., … Grobman, W. A. (2018). Reduction of peripartum racial and ethnic disparities: A conceptual framework and maternal safety consensus bundle. *Obstetrics and Gynecology*, 131(5), 770–782.

Howell, E. A., Egorova, N., Balbierz, A., Zeitlin, J., & Hebert, P. L. (2016). Black-white differences in severe maternal morbidity and site of care. *American Journal of Obstetrics and Gynecology*, 214(1), 122.e1–122.e7.

Igbinosa, I., Leonard, S. A., Butwick, A. J., & Lyell, D. J. (2020). Antepartum anemia and racial/ethnic disparities in blood transfusion in California. *American Journal of Obstetrics and Gynecology*, 222(1).

Illinois Health Care and Human Service Reform Act, Pub. L. No. 102-0004, (2021).

Israel, B. A., Schulz, A. J., Parker, E. A., & Becker, A. B. (1998). Review of community based research: Assessing partnership approaches to improve public health. *Annual Review of Public Health*, 19(1), 173–202.

Kawakami, K., Dovidio, J. F., Moll, J., Hermsen, S., & Russin, A. (2000). Just say no (to stereotyping): Effects of training in the negation of stereotypic associations on stereotype activation. *Journal of Personality and Social Psychology*, 78(5), 871–888.

Kirwan Institute for the Study of Race and Ethnicity, & Ohio State University. (2018). Implicit bias module series. Available: http://kirwaninstitute.osu.edu/implicit-bias-training/. Accessed: December 10, 2019.

Lai, C. K., Skinner, A. L., Cooley, E., Murrar, S., Brauer, M., Devos, T., … Nosek, B. A. (2016). Reducing implicit racial preferences: II. Intervention effectiveness across time. *Journal of Experimental Psychology. General*, 145(8), 1001–1016.

McLemore, M. R., Altman, M. R., Cooper, N., Williams, S., Rand, L., & Franck, L. (2018). Health care experiences of pregnant, birthing and postnatal women of color at risk for preterm birth. *Socail Science and Medicine*, 201, 127–135.

Michigan Department of Health and Human Services. Regional Perinatal Quality Collaboratives. Available: https://www.michigan.gov/mdhhs/0,5885,7–339-71550_96967_97028––,00.html. Accessed: December 20, 2020.

Patient-Centered Outcomes Research Institute. Building effective multi-stakeholder research teams. Available: https://research-teams.pcori.org/. Accessed: August 17, 2021.

Pendry, L. F., Driscoll, D. M., & Field, S. C. T. (2007). Diversity training: Putting theory into practice. *Journal of Occupational and Organizational Psychology*, 80(1), 27–50.

Petersen, E. E., Davis, N. L., Goodman, D., Cox, S., Syverson, C., Seed, K., … Barfield, W. (2019). Racial/Ethnic Disparities in Pregnancy-Related Deaths - United States, 2007-2016. *MMWR Morbidity and Mortality Weekly Reports*, 68(35), 762–765.

Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology*, 38(6), 922–934.

Pettker, C. M., & Grobman, W. A. (2015). Obstetric Safety and Quality. *Obstetrics and Gynecology*, 126(1), 196–206.

Ponsiglione, A. M., Cosentino, C., Cesarelli, G., Amato, F., & Romano, M. (2021). A comprehensive review of techniques for processing and analyzing fetal heart rate signals. *Sensors (Basel)*, 21(18).

Principles of Community Engagement. (2011). *Agency for toxic substances and disease registry*. Atlanta, GA: National Institutes of Health. NIH Publication No. 11 -7782.

Project Implicit (2011). Harvard University. Available: https://implicit.harvard.edu/implicit/index.jsp. Accessed: July 3, 2021.

Racial and Ethnic Disparities in Obstetrics and Gynecology. ACOG Committee Opinion No. 649. (2015). *Obstetrics and Gynecology*, 126(6), e130–e134.

Racial disparities in health outcomes. (2017). Available: https://s3.amazonaws.com/cdn.smfm.org/media/1108/Racial_Disparities_-_Jan_2017.pdf. Accessed: May 17, 2020.

Salm Ward, T. C., Mazul, M., Ngui, E. M., Bridgewater, F. D., & Harley, A. E. (2013). "You learn to go last": Perceptions of prenatal care experiences among African-American women with limited incomes. *Maternal and Child Health Journal*, 17(10), 1753–1759.

Sukhera, J., Miller, K., Scerbo, C., Milne, A., Lim, R., & Watling, C. (2019a). Implicit stigma recognition and management for health professionals. *Academic Psychiatry*, 44, 59–63.

Sukhera, J., & Watling, C. (2018). A framework for integrating implicit bias recognition into health professions education. *Academic Medicine*, 93(1), 35–40.

Sukhera, J., Wodzinski, M., Rehman, M., & Gonzalez, C. M. (2019b). The Implicit Association Test in health professions education: A meta-narrative review. *Perspectives on Medical Educcation*, 8(5), 267–275.

Tajeu, G. S., Cherrington, A. L., Andreae, L., Prince, C., Holt, C. L., & Halanych, J. H. (2015). "We'll get to you when we get to you": Exploring potential contributions of health care staff behaviors to patient perceptions of discrimination and satisfaction. *American Journal of Public Health*, 105(10), 2076–2082.

Taylor, M. J., McNicholas, C., Nicolay, C., Darzi, A., Bell, D., & Reed, J. E. (2014). Systematic review of the application of the plan-do-study-act method to improve quality in healthcare. *BMJ Quality Safety*, 23(4), 290–298.

Thom, D. H. (2001). Physician behaviors that predict patient trust. *Journal of Family Practice*, 50(4), 323–328.

van Ryn, M., Hardeman, R., Phelan, S. M., Burgess, D. J., Dovidio, J. F., Herrin, J., … Przedworski, J. M. (2015). Medical school experiences associated with change in implicit racial bias among 3547 students: A medical student CHANGES study report. *Journal of General Internal Medicine*, 30(12), 1748–1756.

Vyas, D. A., Jones, D. S., Meadows, A. R., Diouf, K., Nour, N. M., & Schantz-Dunn, J. (2019). Challenging the use of race in the vaginal birth after cesarean section calculator. *Womens Health Issues*, 29(3), 201–204.

Washington, S., Caughey, A. B., Cheng, Y. W., & Bryant, A. S. (2012). Racial and ethnic differences in indication for primary cesarean delivery at term: Experience at one U.S. *Institution. Birth*, 39(2), 128–134.

Whitmer, G. (2020). *Executive Directive 2020-7: Improving equity in the delivery of health care*. Lansing, MI: State of Michigan.

World Health Organization (2015). *Trends in maternal mortality: 1990-2015. World Health Organization*.

Zolnierek, K. B., & Dimatteo, M. R. (2009). Physician communication and patient adherence to treatment: A meta-analysis. *Medical Care*, 47(8), 826–834.

Author Descriptions

Jonathan Y. Siden, BSW, BA, is a dual MD/MPP candidate at the University of Michigan Medical School and Ford School of Public Policy applying into obstetrics and gynecology. His academic interests include health disparities and social policy.

Alissa R. Carver, MD, is an Assistant Professor at the University of Michigan Department of Obstetrics and Gynecology Division of Maternal-Fetal Medicine. She is the director of the Michigan Obstetrics Safety Team. Her research interests include medical complications of pregnancy.

Okeoma O. Mmeje, MD, MPH, is an Assistant Professor at the University of Michigan Department of Obstetrics and Gynecology Division of Gynecology. Her research interests include reproductive infectious disease in vulnerable populations, health disparities, and reproductive justice.

Courtney D. Townsel, MD, MSc, is an Assistant Professor at the University of Michigan Department of Obstetrics and Gynecology Division of Maternal-Fetal Medicine. Her research interests include health disparities, substance use disorders in pregnancy, and translational research.