Evidence-based Practice Center Rapid Review Protocol

Project Title: *Making Healthcare Safer IV: Healthcare Workers' (HCW) Implicit Bias Training and Education*

Review Questions

Note: Healthcare workers (HCW) in this context are defined broadly as persons working in facilities who provide direct care to patients including physicians, nurses, pharmacists, allied healthcare professionals, diagnostic staff, ancillary staff, contracted staff, volunteers, students, and trainees.

1. What is the frequency and severity of harms associated with HCW implicit bias?
2. What patient safety measures or indicators have been used to examine the harm associated with HCW implicit bias?
3. What training and education related PSPs have been used to prevent or mitigate the harms associated with HCW implicit bias and in what settings have they been used?
4. What is the rationale for PSPs related to HCW implicit bias training and education used to prevent or mitigate the harms?
5. What are the effectiveness and unintended effects of HCW implicit bias training and education PSPs?
6. What are common barriers and facilitators to implementing HCW implicit bias training and education PSPs?
7. What resources (e.g., cost, staff, time) are required for implementation HCW implicit bias training and education PSPs?
8. What toolkits are available to support implementation of HCW implicit bias training and education PSPs?

Context and Domain Being Studied

The Agency for Healthcare Research and Quality (AHRQ) Making Healthcare Safer (MHS) reports consolidate information for healthcare providers, health system administrators, researchers, and government agencies about practices that can improve patient safety across the healthcare system - from hospitals to primary care practices, long-term care facilities, and other healthcare settings. In Spring of 2023, AHRQ launched its fourth iteration of the MHS Report (MHS IV).

Implicit bias as a PSP was identified as high priority for inclusion in the MHS IV reports using a modified Delphi technique by a Technical Expert Panel (TEP) that met in December 2022. The TEP included 15 experts in patient safety with representatives of governmental agencies, healthcare stakeholders, clinical specialists, experts in patient safety issues, and a patient/consumer perspective. See the Making Healthcare Safer IV Prioritization Report for additional details.[1]

Implicit biases are unconscious attitudes and beliefs that may influence behaviors such as nonverbal communication, healthcare worker (HCW) perceptions and clinical assessments about patients, and decisions about patient management.[2] For the context of this review, HCWs are defined broadly as persons working in facilities who provide direct care to patients including physicians, nurses, pharmacists, allied healthcare professionals, diagnostic staff, ancillary staff, contracted staff, volunteers, students, and trainees. Implicit biases operate outside conscious awareness and are often anchored on patient characteristics such as race, ethnicity, and gender.[3] These biases permeate healthcare and can influence judgment and contribute to discriminatory behavior.[4,5] More specifically, HCW implicit bias may lead to inequitable care delivery and poor patient outcomes, perpetuating well-known disparities.[6] For example, a recent systematic review revealed that many HCWs had negative bias towards non-White people, as measured by the Implicit Association Test (IAT), which negatively impacted patient–provider interactions, treatment decisions, treatment adherence, and patient health outcomes.[7] Indeed, another review found that increased provider racial and ethnic bias, as measured by the IAT, consistently correlated with poorer patient-provider interactions.[8] An additional review also showed that physicians demonstrated an implicit preference for White people, as measured by the IAT, but this bias appeared to influence clinical decision-making in only 2 of the 9 qualifying studies.[9]

Racial inequities in perinatal care in particular have garnered substantial attention and have motivated efforts to mitigate implicit bias.[10] Addressing implicit bias is a fundamental, professional responsibility of all healthcare institutions and providers.[11] HCW implicit bias training and education PSPs may aid in addressing such bias and its negative consequences.

Overview of the PSP

HCW implicit bias can impact patient safety through clinical misdiagnosis, pain mismanagement, and lead to other poor patient outcomes.[12] Training programs for HCWs have arisen to combat implicit bias, with certain states passing legislation mandating implicit bias training for at least some categories of health professionals.[10] Training programs are implemented to ensure that HCWs have the knowledge and skills needed to prevent biases from influencing the quality of care that they provide.[13] Evidence for implicit bias training is evolving and approaches are widely heterogenous. Implicit bias training can vary by content and learning objectives. Common objectives of training are to improve HCW awareness, recognition, and management of implicit bias through strategies such as critical reflection, perspective-taking, counter-stereotyping, and skills and knowledge-building.[14] Training can also vary by format (e.g., workshop, academic course), delivery method (e.g., in-person, web-based, in groups), frequency, or length, among other characteristics. It may focus on certain clinical areas or patient populations or take a “one-size-fits-all" approach. Further, it may also be provided at any point in the HCW career, from students in degree programs, post-graduate trainees, to seasoned staff, and can be administered in clinical or non-clinical settings. To date, implicit bias training is often evaluated through pre-post surveys or standardized assessments that measure changes in HCW outcomes (e.g., attitudes and beliefs) and is rarely linked to patient health and safety. Implicit bias training that recognizes differential risks of patient safety in marginalized patient groups will be prioritized.

The MHS III report noted that more can be done to explore the link between adverse safety events and provider bias and/or racism. According to the report, several studies show a link between providers’ implicit bias and patient communication challenges, as well as healthcare and health outcomes.[6,7]

In the prioritization process, the Making Healthcare Safer IV TEP noted that the PSP was

defined to focus on implicit bias training to recognize differential risks of patient safety events in marginalized groups, but the topic could be expanded to include the role of implicit bias in PSPs more generally. As there are several high quality, recent systematic reviews that evaluate the impact of HCW implicit bias, this review will focus on the effect of HCW implicit bias training specifically and utilize previous related systematic reviews to supplement our findings.

Purpose of the Review

The overall purpose of this review is to determine the effect of HCW implicit bias training and education interventions on key outcomes (e.g., health and healthcare disparities, healthcare acquired conditions, access to healthcare, healthcare utilization, diagnostic error, mortality), quality outcomes (e.g., patient satisfaction), adverse effects (e.g., HCW burnout and satisfaction) and unintended consequences (e.g., health and health care disparities in other populations) and how these interventions may be implemented.

Methodologic Approach

For this rapid review, strategic adjustments will be made to streamline traditional systematic review processes and deliver an evidence product in the allotted time. We will follow adjustments and streamlining processes proposed by the AHRQ Evidence-based Practice Center (EPC) Program. Adjustments include being as specific as possible about the questions, limiting the number of databases searched, modifying search strategies to focus on finding the most valuable studies (i.e., being flexible on sensitivity to increase the specificity of the search), and restricting the search to studies published recently in English and performed in the United States, and having each study's eligibility assessed by a single reviewer. A randomly selected 10% sample of excluded citations will be checked by a second reviewer. This review will focus on HCW training and education PSPs to evaluate the effect on various targeted harms.

We will search for recent high quality systematic reviews and will rely heavily on the findings of any such systematic reviews that are found. We will not perform an independent assessment of original studies cited in any such systematic review.

We will answer Review Questions 1 and 2 by focusing on the harms and patient safety measures or indicators that are addressed in the studies we find for Review Question 5. For Review Question 2,

we will focus on identifying relevant measures that are included in the Centers for Medicare & Medicaid Services (CMS) patient safety measures, AHRQ's Patient Safety Indicators, or the National Committee for Quality Assurance (NCQA) patient safety related measures.

We will ask our content experts to answer Review Question 3 and 4 by citing selected references, including PSPs used and explanations of the rationale presented in the studies we find for Review Question 5.

For Review Questions 6 and 7, we will focus on the barriers, facilitators, and required resources reported in the studies we find for Review Question 5.

For Review Question 8, we will identify publicly available patient safety toolkits developed by AHRQ or other organizations that could help to support implementation of the PSPs. To accomplish that task, we will review AHRQ's listing of patient safety related toolkits (see https://www.ahrq.gov/tools/index.html?search_api_views_fulltext=&field_toolkit_topics=14170&sort_by=title&sort_order=ASC) and we will include any toolkits mentioned in the studies we find for Review Questions 5-7. We will identify toolkits without assessing or endorsing them.

Eligibility Criteria for Studies of Effectiveness

We will search for original studies and systematic reviews on Review Question 5 according to the inclusion and exclusion criteria presented in Table 1.

Table 1. Inclusion and Exclusion Criteria

Study Parameter	Inclusion criteria	Exclusion criteria
Population	• All patients under care of HCWs • All HCWs, including trainees and students	• Implicit bias associated with non-HCWs • Simulated or training patients only (i.e., not real-world evidence)
Intervention	• Training and education for implicit bias aimed at HCWs, for example: o Implicit bias awareness, recognition, attitudes, beliefs o Debiasing or other mitigation strategies o Educational didactic – synchronous or asynchronous, virtual or in-person o Simulation skills training o Group workshops	• Non-educational based interventions for implicit bias (e.g., standardized decision support tools, algorithms, guidelines, or other resources used primarily as reference) • Interventions addressing cognitive biases • Multicomponent interventions in which the isolated effect of HCW implicit bias training and education cannot be evaluated • Training or remediation for mitigation of explicit biases

Study Parameter	Inclusion criteria	Exclusion criteria
Comparator	• No HCW implicit bias training and education • Other implicit bias training and education (i.e., other related active comparator with varying modalities, features, or administration) • Same intervention with varying HCW roles or specialties or interdisciplinary or interprofessional	• No concurrent or historical comparison group • No clear description of intervention
Outcome	• Primary outcomes: patient outcomes such as o Mortality o Quality of life o Ability, function o Healthcare access (population health services, preventative health services, time to therapeutic or diagnostic) o Health care utilization (emergency department encounters, hospitalizations, readmissions, length of hospital stay, ICU admission) o Diagnostic or other medical errors o Malpractice, medicolegal risk complaints • Primary outcomes: HCW outcomes, for example o HCW adverse consequences: HCW wellness, satisfaction, burnout Secondary outcomes of interest are process and effect on communication outcomes and effect on HCW behavior, attitudes, or beliefs and included only if they are reported in studies that also report primary outcomes. • Secondary outcomes: o Patient satisfaction o Measures of HCW communication effectiveness o Assessment of HCW implicit bias (i.e., awareness, attitudes, beliefs, behaviors) o Implementation outcomes related to implicit bias training (Review Questions 6 and 7) ▪ Barriers and facilitators ▪ Cost, staffing, time	Studies without patient or HCW outcome or disparity of interest (e.g., synthetic data)
Timing	Any	
Setting	Any real-world healthcare setting	• Outside of healthcare (e.g., human resources, financial, legal, education)
Type of studies	Systematic reviews Randomized controlled trials and observational studies with a comparison group, including pre-post studies Studies should include at least 50 HCWs	• Narrative reviews, scoping reviews, editorials, commentaries, and abstracts • Qualitative studies without quantitative data

CDC = Centers for Disease Control and Prevention; HCW= Healthcare Workers; MHS = Making Healthcare Safer

Literature Searches for Studies of Effectiveness

Our search strategy focuses on biomedical databases expected to have the highest yield of relevant studies, including PubMed, Embase, CINAHL, PsycINFO, and the Cochrane Library. The main search will be supplemented by a narrowly focused search for unpublished reports that are publicly available from governmental agencies or professional societies with a strong interest in the topic, including the Association of American Medical Colleges (AAMC), Accreditation Council for Graduate Medical Education (ACGME), Centers for Disease Control (CDC), AHRQ, the National Institutes of Health (NIH), National Quality Forum (NQF), and American Hospital Association (AHA). All searches will be limited to March 31, 2013 to present, which represents the time since searches were completed by a comprehensive systematic review addressing the prevalence and impact of implicit bias among HCWs.[6]

Data Extraction

To efficiently identify studies that meet eligibility criteria, we will distribute citations from the literature search to team members, with plans to have the title and abstract of each citation reviewed by a single team member. A second team member will check a 10% sample of excluded citations to verify that important studies were not excluded after the review of titles and abstracts. The full text of each remaining potentially eligible article will similarly be reviewed by a single team member to confirm eligibility and extract data. A second team member will check a randomly selected 10% sample of excluded full text citations to verify that important studies were not excluded and confirm the accuracy of extracted data.

Information will be organized according to the review questions, and will include author, year, study design, frequency, and severity of the harms, measures of harm, characteristics of the PSP, rationale for the PSP, outcomes, implementation barriers and facilitators, resources needed for implementation, and description of toolkits. To streamline data extraction, we will sort eligible studies by specific implicit bias training and education PSP or HCW role (if we find studies that report on fundamentally different types of implicit bias training and education PSPs or in different types of HCW roles), and focus on extracting information about characteristics, outcomes, and barriers/facilitators most pertinent to a specific PSP.

Risk of Bias (Quality) Assessment

For studies that address Review Question 5 about the effectiveness of PSPs, the primary

reviewer will use the Cochrane Collaboration's tool for assessing the risk of bias of randomized controlled trials (RCTs) or the ROBINS-I tool for assessing the Risk Of Bias In Non-randomized Studies – of Interventions.[15,16] When assessing RCTs, we will use the 7 items in the Cochrane Collaboration's tool that cover the domains of selection bias, performance bias, detection bias, attrition bias, reporting bias, and other bias.[15] When assessing non-randomized studies, we will use specific items in the ROBINS-I tool that assess bias due to confounding, bias in selection of participants into the study, bias in classification of interventions, bias due to deviations from intended interventions, bias due to missing data, bias in measurement of outcomes, and bias in selection of the reported results.[16] The risk of bias assessments will focus on the main outcome of interest in each study.

If an eligible systematic review is identified, the primary reviewer will use the criteria developed by the United States Preventive Services Task Force Methods Workgroup for assessing the quality of systematic reviews.[17]

- **Good** - Recent relevant review with comprehensive sources and search strategies; explicit and relevant selection criteria; standard appraisal of included studies; and valid conclusions.
- **Fair** - Recent relevant review that is not clearly biased but lacks comprehensive sources and search strategies.
- **Poor** - Outdated, irrelevant, or biased review without systematic search for studies, explicit selection criteria, or standard appraisal of studies.

The Task Leader will review the risk of bias assessments and any disagreements will be resolved through discussion with the team.

Strategy for Data Synthesis

Selected data will be compiled into evidence tables and synthesized narratively. We will not conduct a meta-analysis. For Review Question 5 about the effectiveness of HCW implicit bias training and education PSPs, we will record information about the context of each study and whether the effectiveness of the PSP differs across patient or HCW subgroups. If any of the PSPs have more than one study of effectiveness and are otherwise not clinically heterogeneous, we will grade the strength of evidence for those PSPs using the methods outlined in the AHRQ

Effective Health Care Program (EHC) Methods Guide for Effectiveness and Comparative Effectiveness Reviews.[18] Evidence grading would not add value for PSPs that do not have more than one available study.

Analysis of Subgroups or Subsets

No subgroup analyses will be conducted except as noted above for Review Question 5.

Registration

We will submit the protocol to AHRQ and to the PROSPERO international prospective register of systematic reviews.

EPC Team Disclosures

EPC core team members must disclose any financial conflicts of interest greater than $1,000 and any other relevant business or professional conflicts of interest. Related financial conflicts of interest that cumulatively total greater than $1,000 will usually disqualify EPC core team investigators from participation in the review.

External Peer Reviewers

Peer reviewers are invited to provide written comments on the draft report based on their clinical, content, or methodological expertise. The EPC considers all peer review comments on the draft report in preparation of the final report. Peer reviewers do not participate in writing or editing of the final report or other products. The final report does not necessarily represent the views of individual reviewers.

We will ask at least one clinical content expert and one methodological expert to review the draft report. Potential peer reviewers must disclose any financial conflicts of interest greater than $5,000 and any other relevant business or professional conflicts of interest. Invited peer reviewers may not have any financial conflict of interest greater than $5,000.

Role of the Funder

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U.S. Department of Health and Human Services. The AHRQ Task Order Officer will review contract deliverables for adherence to contract requirements and quality. The authors of this report are responsible for its content. Statements in the report should not be construed as endorsement by AHRQ or the U.S. Department of Health and Human Services.

Format and Content of Report

The report will follow the most recent template approved by AHRQ at the time of approval of the protocol.

References

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