Research Report

Identifying and Understanding Ways to Address the Impact of Racism on Patient Safety in Health Care Settings

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About This Report

This report describes research findings from a RAND Corporation–MedStar collaborative project, funded by the California Health Care Foundation (CHCF), that examined the intersection of patient safety and racism. Our work focused specifically on patient safety and/or health equity from clinician leaders' perspectives because of the unique vantage point they have concerning patient safety events, their importance in identifying patient safety events through health system–wide provider reporting systems, and their on-the-ground experience with their organization's culture and the complexities of the health care system. An overarching focus of our work concerned the impact of racism and other related factors (i.e., bias) on patient safety events and potential interventions or changes (e.g., creating a culture of speaking up about racism in care) that can help prevent such events.

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Summary

Rates and types of patient safety events vary across patients from different racial and ethnic backgrounds, with minoritized patients at increased risk of experiencing some patient safety events compared with White, non-Hispanic patients (Flanagin et al., 2021). Racism may be a driver of this variability. Recently, health services researchers have directed their attention to understanding the ways in which racism contributes to patient safety events. By identifying linkages between racism and such events, researchers and practitioners can develop targeted interventions that disrupt the occurrence of racism in health care settings, thereby improving patient outcomes for all patients regardless of sociodemographic factors. Throughout this report, we use the adjective *minoritized* rather than *minority* to acknowledge societal power structures that have conferred minority status on certain populations and to emphasize that race and ethnicity are social constructs rather than biological.

Approach

We conducted an environmental scan of peer-reviewed studies and gray literature to understand established linkages between patient safety events and racism. We supplemented the scan with 14 interviews with subject-matter experts (SMEs; i.e., clinicians with patient safety and/or health equity expertise) to understand their perspectives on factors that contribute to patient safety events, factors that influence formal and informal reporting of such events, and the impact of racism on patient safety events.

Key Findings

The environmental scan revealed that while patient safety events, overall, were characterized by racial and ethnic disparities, methodological challenges—primarily related to data availability—limited in-depth analysis of this finding. The scan also indicated that racism and its impact on patient safety events was more often discussed in editorials than in peer-reviewed and gray literature. SME interviews indicated that various levels of racism ranging from internalized and interpersonal to institutional and systemic directly impact the risk of patient safety events and highlighted the interplay between racism and social determinants of health. We also identified patient, provider, and systems factors that contribute to disparities in patient safety events.

Recommendations

We offer actionable recommendations for health systems, funders, and policymakers for the short, medium, and long terms. Health systems should collect patient safety data with equity in mind so that these systems can analyze patient safety events by sociodemographic factors and look for disparities in these events. Health systems and patient safety reporting vendors must develop more-efficient and user-friendly formal reporting systems so that health care providers are more likely to report patient safety events. Health care as an industry and medicine as a discipline need to create a culture of speaking up that prevents patient safety events caused by racism from happening. Finally, health insurance reform is needed to address some of the underlying drivers of disparities in patient safety events.

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Chapter 1. Introduction

Racism—both interpersonal (racism that occurs between individuals) and systemic (racism embedded in systems such as health care or the courts; Braveman et al., 2022)—has been cited as an important driver of health disparities in the United States (Bailey et al., 2017; Paradies et al., 2015) even when controlling for other sociodemographic factors (Nelson, 2002). There is a robust health care quality of care literature that shows differences in health outcomes by race (Epstein and Ayanian, 2001; Institute of Medicine, 2003; Fiscella et al., 2000). Although this aspect is understudied, there is also strong evidence that patient safety events vary across patients from different racial and ethnic backgrounds, with minoritized patients more likely to experience some types of patient safety events (Gangopadhyaya, 2021a; Metersky et al., 2011; Stockwell et al., 2019). The factors that lead to these disparities are complex, and while several factors (i.e., insurance status, access to care, environmental factors, and other social determinants of health [SDOH]; Shimada et al., 2008; Stockwell et al., 2019) are intertwined, there is growing sentiment that racism may play a critical role in these events (Feeley and Torres, 2020), particularly given the pervasiveness of systemic racism in health care (Biggers, 2020). Additionally, a paradigm shift in health services research is expanding the conceptualization of traditional system factors—such as safety culture and teamwork (Institute of Medicine, 2000)—to include diversity, equity, and inclusion (Boatright, Berg, and Genao, 2021) and, in turn, creating an opportunity to better examine the intersection of racism and patient safety events. Building on this shift, one way to improve patient outcomes is by understanding linkages between racism and patient safety events so that strategies and interventions can be developed to mitigate the deleterious effects of racism and its impact on patient safety.

Challenges in Identifying Racism in Patient Safety Events

Several challenges impact our ability to understand the role of racism in patient safety events. First, many health systems do not collect data on race, ethnicity, or preferred language when reporting patient safety events, making it difficult to identify disparities in patient safety events (Sharma et al., 2021). Identifying disparities is an important step in understanding the impact of racism on patient safety. Second, even when these data are collected, there is underreporting of patient safety events (Gangopadhyaya, 2021a; Gangopadhyaya, 2021b; Biggers, 2020; Feeley and Torres, 2020; Agency for Healthcare Research and Quality, 2019b; Joint Commission, 2016; Petersen et al., 2019; Berg et al., 2010; Berg et al., 2005; Howell et al., 2013; Classen et al., 2011; Weissman et al., 2008; Weingart et al., 2005; Institute of Medicine, 2004). Evidence also suggests that health care team members may be less likely to report patient safety events that occur in minoritized patients, although the reasons for this are unclear (Schulson et al., 2021;

Thomas, Pandit, and Krevat, 2020). Third, reporting an event means that one is comfortable *speaking up* about the concern, yet health care team members who identify with a minoritized racial or ethnic group may also feel *less comfortable* speaking up about racism because of their own experiences of racism (Serafini et al., 2020). Additionally, research has not systematically explored what health system factors can improve identification and prevention of patient safety events that disproportionately impact minoritized patients and, relatedly, events stemming from racism.

Objectives

Given these challenges, we developed three objectives to guide our project: (1) examining the role that racism plays in the occurrence of patient safety events among minoritized patients; (2) understanding factors that affect reporting of patient safety events, particularly in minoritized patient populations; and (3) describing what health system characteristics promote patient safety in minoritized patient populations and empower health care team members to speak up about unsafe care impacting minoritized patients.

Chapter 2. Methods

We used two complementary methods for this study. First, we conducted an environmental scan to determine what has been published to date on the intersection of racism and patient safety. Second, we conducted qualitative interviews with subject-matter experts (SMEs) to learn from their perspectives on patient safety, disparities, equity, racism, and reporting.

Environmental Scan

We conducted a structured search (see Appendix A for search terms) for peer-reviewed studies, editorials, commentaries, blog posts, and gray literature on patient safety and racism using PubMed, Web of Science, and Policy File Index. We additionally searched specific websites of organizations that our team knew had likely published work related to the question of how racism impacts patient safety. We also conducted a Google search and a Google Scholar search to identify additional articles (our searches were run between January 27, 2022, and February 21, 2022). Finally, we asked interviewees to identify key articles. We limited the results to studies or articles published from 2005 to 2022 (date of search: January 18, 2022).

Eligibility Criteria

To be eligible for inclusion in the review, the publication had to be in English and focus on health care in the United States. We included studies or articles that discussed the impact of racism on patient safety, which included the discussion of racial and ethnic differences in patient safety events. To ensure that the scope of the review was answering our research questions, we focused on structural racism within the health care system and provider biases rather than policies outside the health care system. For example, although we know there is a link between experiencing adverse events and having multiple comorbidities, we did not focus on the impact of redlining on access to green spaces and risk of developing a chronic disease or comorbidity (Naessens et al., 2012).

The literature searches identified 2,652 publications, including gray literature. Of these, 31 publications met our inclusion criteria. Figure A.1 in Appendix A, a Preferred Reporting Items for Systemic Reviews and Meta-Analyses (PRISMA) flow diagram, shows the number of articles obtained from the searches and screened, materials assessed for eligibility, and materials included in the review. Two investigators assessed the eligibility of all materials from the searches. When in doubt, discussions about retaining or excluding articles were held between the two investigators in regular meetings, and decisions were jointly made. The data extraction and analysis methods are in Appendix A.

Qualitative Interviews

Participants and Recruitment

From March 8 to April 19, 2022, we conducted 14 semistructured interviews with clinicians who have patient safety and/or health equity expertise, consistent with the number of interviews needed to achieve thematic saturation (i.e., when major themes have emerged and new data become duplicative), which can occur with 12 to 15 interviews (Guest, Bunce, and Johnson, 2006). We leveraged our internal networks, Google searches, literature review, and referrals to identify and recruit participants. Clinicians were eligible if they were physicians, nurse practitioners, registered nurses, doctors of nursing, physician assistants, medical assistants, or registered pharmacists with experience in patient safety and/or health equity. The interview guide can be found in Appendix B.

Interviews were conducted through an online platform, were audio recorded, and lasted 60 minutes. A notetaker took detailed notes. Topics included the clinician's background and experience, factors related to increased patient safety events, factors that encourage and discourage formal and informal reporting, and the impact of racism on patient safety. We defined key terms used in our questions at the start of the interview (see Table 2.1).

Table 2.1. Definitions

Term	Definition
Patient safety	"Prevention of diagnostic errors, medical errors, injury or other preventable harm to a patient during the process of health care and reduction of risk of unnecessary harm associated with health care" (Agency for Healthcare Research and Quality, undated c)
Patient safety event	Preventable errors, injuries, or harm to a patient during the process of health care (Agency for Healthcare Research and Quality, 2019a)
Near miss	An incident where there was an error, but a patient did not experience harm (Agency for Healthcare Research and Quality, 2019a)
Patient safety indicators (PSIs)	A system for identifying potentially avoidable patient safety events using data collected as part of usual patient care (e.g., International Classification of Diseases codes) (Agency for Healthcare Research and Quality, undated b)
Incident reporting systems and voluntary reporting systems	Patient safety reporting systems that often rely on those health care workers involved in an event to report the event. This is a form of passive surveillance. (Agency for Healthcare Research and Quality, 2019b)
Sentinel events	"A patient safety event (not primarily related to the natural course of the [patient's] illness or underlying condition) that reaches a [patient] and results in death, severe harm (regardless of duration of harm), or permanent harm (regardless of severity of harm)" (Joint Commission, 2021)
Health equity	"Everyone has a fair and just opportunity to be as healthy as possible. This requires removing obstacles to health such as poverty, discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care." (Robert Wood Johnson Foundation, 2017)
Health disparities	"Differences in access to or availability of medical facilities and services and variation in rates of disease occurrence and disabilities between population groups defined by socioeconomic characteristics such as age, race, ethnicity, economic resources, or gender and populations identified geographically" (Agency for Healthcare Research and Quality, undated a)
Racial and ethnic minoritized groups (patients, providers, populations)	Minority health populations include "American Indian or Alaska Native, Asian, Black or African American, and Native Hawaiian or other Pacific Islander. The ethnicity used is Latino or Hispanic" (National Institute on Minority Health and Health Disparities, 2021). We use the adjective *minoritized* rather than *minority* to acknowledge societal power structures that have conferred minority status on certain populations (Milner and Jumbe, 2020) and to emphasize that race and ethnicity are social constructs rather than biological (Flanagin et al., 2021).

We also collected data on self-identified gender, race and ethnicity, and region of practice to ensure that we had variation in these characteristics in our interview sample (Table 2.2).

Table 2.2. Participant Characteristics

Characteristic		N (%)
Gender	Female	9 (64%)
	Male	5 (36%)
Region	East	6 (43%)
	West	3 (21%)
	South	3 (21%)
	Midwest	2 (14%)
Self-identified ethnicity	Non-Hispanic/Latino	13 (93%)
	Hispanic/Latino	1 (7%)
Self-identified race	Black	5 (36%)
	Indian/South Asian	4 (29%)
	White	3 (21%)
	Multiracial (Black and White)	2 (14%)

Chapter 3. Findings

Literature Review Findings

We reviewed 31 publications related to the intersection of patient safety events and racism. Overall, studies demonstrated that minoritized patients experienced higher rates of patient safety events compared with White patients. Disparities in patient safety events varied by minoritized patient population, type of patient safety event, and health care setting. Most articles and studies focused on providing evidence of racial and ethnic disparities in patient safety events, and there was limited evaluation of the root causes of these disparate rates. While some of the publications mentioned the role of bias, discrimination, and differential access to high-quality care based on social factors, there was rarely direct mention or discussion of racism.

While racial and ethnic disparities were found to exist overall, three systematic reviews highlighted how heterogeneous methodologies produced mixed results. There are multiple methods to identifying and measuring patient safety events (e.g., voluntary reporting, chart review, PSIs), which may contribute to heterogenous findings. Additionally, different methods also measured different aspects of patient safety (e.g., adverse drug events, hospital-acquired infections, post-procedural adverse events, diagnostic errors). Baehr, Peña, and Hu, 2015, reviewed 40 studies focused on adverse drug events (some of which may have been patient safety events) and found that 27 studies demonstrated a racial or ethnic disparity and 21 identified a minoritized patient group as at-risk. They showed how few studies were specifically designed to evaluate racial or ethnic disparities because these studies lacked a standardized approach to racial and ethnic categorization as well as determination of potential confounders.

Okoroh, Uribe, and Weingart, 2017, reviewed 24 publications and reported eight studies that stratified outcomes by race or ethnicity and adjusted for comorbidity and patient severity. They highlighted methodological issues related to the use of administrative data, which is less sensitive at identifying patient safety events. They noted that examining disparities was hindered by the exclusion of race and ethnicity in baseline characteristics, as well as the inability to account for confounders such as comorbidities and hospital-level variations. Piccardi et al., 2018, reviewed 15 studies on patient safety events in primary care settings. They found that, generally, women and Black patients, compared with men and White patients, were more likely to experience patient safety events. They identified some studies with null results or in which nonminoritized racial groups and genders were at increased risk of patient safety events. The authors accounted for these divergent findings as a reflection of the interplay between patient sociodemographic factors, disease, and treatment setting. Unfortunately, in explaining the observed disparities, the authors promote a now-refuted biologic explanation for race,

hypothesizing that individual "genetic, biologic, and physiologic factors" rather than explicit bias may explain these disparities.

Among more-recent individual studies, Gangopadhyaya, 2021a, and Gangopadhyaya, 2021b, investigated risk-adjusted differences in Black and White patients experiencing patient safety events across hospitals and within hospitals using the Agency for Healthcare Research and Quality PSIs. PSIs use data collected as part of regular patient care, thus making it possible to stratify patient safety or potential patient safety events by patient demographics (Agency for Healthcare Research and Quality, undated b). Across hospitals, Black patients experienced more types of patient safety events than White patients, and Black patients were less likely to be admitted to hospitals classified as "high quality." This finding reflects other research in disparities, which finds that minoritized patients receive care at lower-quality hospitals (Hasnain-Wynia et al., 2007; Hasnain-Wynia et al., 2010). This disparity may reflect differences in where patients choose to receive care or their inability to access high-quality care because of the interplay between race, neighborhood of residence, housing policies, and insurance type. However, Gangopadhyaya accounted for insurance status in his analyses by focusing on Medicare enrollees and found that disparities persisted. In a second study comparing patients within the same hospital, Black patients experienced higher rates of hospital-acquired illnesses and injuries related to surgical procedures than White patients. The author ascribed these disparities to race-discordant patient-provider interactions, differential admission due to higher payment rates for White patients, and provider biases (Gangopadhyaya, 2021a; Gangopadhyaya, 2021b). Hollingsworth et al., 2021, found that Black patients die more frequently following coronary artery bypass grafting than White patients even when treated in the same hospital. They showed that hospitals with higher levels of "provider care team segregation" (i.e., providers who treat only Black or White patients) are more likely to have higher mortality rates among Black patients than hospitals with low segregation. They associated this disparity to systematic differences in assignment of provider teams, decisions on who to treat, and racial divisions in referrals among providers. Pinheiro et al., 2021, examined patient reporting of events and found that Black patients were more likely to report preventable adverse events, such as a repeat drug test or drug-drug interactions, than White patients. The authors attributed these disparities to systemic racism and its effects on patient-provider communication as well as to Black patients being treated by clinicians with lower-quality clinical training due to fewer financial resources at their training institution.

Studies found that preferred language spoken by the patient and insurance type can have additive, intersectional effects on disparities. Research found higher rates of patient safety events among immigrant, Hispanic/Latinx, and Asian patients (Bakullari et al., 2014; Suurmond et al., 2010). Shen et al., 2016, highlighted the interactive effects between race and poverty with their finding that Medicaid patients were more likely than privately insured patients to have a PSI, which they hypothesized may be due to differential treatment by clinicians and a higher proportion of patients with limited English proficiency among Medicaid patients.

Reporting bias, underreporting, and access to care must also be considered when evaluating disparities by racial and ethnic groups. Some studies that utilized provider reporting systems found lower rates of patient safety events in minoritized patients compared with White patients (Schulson et al., 2021; Thomas, Pandit, and Krevat, 2020; Thomas, Pandit, and Krevat, 2021), and the authors hypothesized that this might reflect disparities in reporting of events, possibly due to bias or racism, rather than truly lower rates of patient safety events in minoritized patients. Other limitations of existing research include incomplete, inaccurate, or simplified categorizations of race and ethnicity data and use of aggregated patient safety events that failed to account for varying severity of events. These limitations made it difficult to assess the root causes of disparities, which hampers the ability to inform appropriate solutions (Baehr, Peña, and Hu, 2015; Bakullari et al., 2014; Coffey, Andrews, and Moy, 2005; Gangopadhyaya, 2021b; Gaskin et al., 2008; Okoroh, Uribe, and Weingart, 2017; Thomas, Pandit, and Krevat, 2021).

While the reviewed studies touched on theories behind patient safety event disparities, editorials were more explicit in their mention of racism. Three articles discussed the role of structural racism, systematic discrimination in the U.S. health care system, and implicit bias among providers as drivers of inequities in patient safety (Feeley and Torres, 2020; Sim et al., 2021; Sivashanker and Gandhi, 2020). In one commentary, the authors discussed how health systems take a "color-blind" approach to patient safety, which results in underrecognition of events in minoritized patients. They describe how racism and the societal norms that lead to bias and discrimination can result in some providers shifting blame onto a lack of patient compliance, rather than racism, for poor outcomes (Sim et al., 2021). In another commentary, the authors discussed structural racism as a systems-based problem that requires a systems-based approach to solve (Sivashanker and Gandhi, 2020). They argued for rigorous, standardized research on inequities in patient safety events to better elucidate the causes behind disparities.

Interview Findings

In the following section, we share our findings from the SME interviews. These interviews helped us fill the gaps in the literature on the causes of disparities in patient safety events, particularly the role of racism in driving disparities. We also highlight the role that health system characteristics play in impacting the likelihood of speaking up about events through both formal and informal reporting of events in minoritized patients and other findings that emerged from the SME interviews.

The Multiple Levels of Racism That Contribute to Patient Safety Events

Overall, SMEs felt that racism played a role in the risk of patient safety events. However, there were a range of views on the level of impact. Interviewees spoke of how racism may contribute to some events, such as diagnostic delay, but not to others, such as medication

reconciliation issues. However, other SMEs felt that racism explained all disparities in patient safety events. As SME 7 noted, "*Racism is so embedded, it impacts everything*."

SMEs discussed how the multiple types of racism can impact patient safety events differently. They remarked on how systemic racism affected where patients were able to receive care (e.g., public hospitals versus private academic medical centers), leading to disparities in quality, delays in care due to issues of access, and risk for developing comorbidities, all of which could put minoritized patients at increased risk for patient safety events. SMEs emphasized that patients do not exist in a vacuum, and their interaction with the health care system is predicated on structural and historical context, as in this comment from SME 4:

> *Patients do not inherently bring scenarios within themselves . . . . where you can get care if you have Medicaid or lack of insurance puts limitations on your access. . . . Patient[s] in these scenarios who have limited access . . . tend to be in a situation where they get less entry-level attention and, as a result, have a higher risk of developing comorbidities or having more medical complexity because of entering care at a later stage.*

SMEs noted the interplay between systemic racism and interpersonal racism, which also contributed to patient safety events. They noted how disparities in care and differential outcomes were often not identified as patient safety events because health care providers and health systems have come to assume that these disparities reflect biologic difference rather than structural racism. As SME 6 commented,

> *America is such an unjust place that we now believe disparities are normal when these are social disparities that could have [been] fixed. The most insidious thing is the circular logic that you treat two similar biological groups, you treat them as two different social groups, you then drive and create biological consequences, and then you say, "See? They are two different biological groups, and we have to treat them differently." Perfect and most insidious diabolical master plan.*

SMEs noted that some minoritized patients may have internalized racism such that when there is deviation from the standard of care, they do not recognize it as substandard. Providers may also experience internalized racism. Internalized racism was also mentioned when discussing the implicit and explicit biases of providers, which we describe in more detail later.

SMEs also highlighted the shortcomings of the patient safety movement, which has taken a color-blind approach that perpetuates disparities. For example, SMEs noted how most patient safety reporting systems were not built with equity in mind despite equity being one of the six domains of quality (Institute of Medicine, 2001); the absence of race reporting in patient safety reporting systems is an example of systemic and institutional racism. As SME 1 commented,

> *Race is in [the electronic record system] but not in [the patient safety reporting system]. This is a perfect example of structural racism*[1] *and structural inequities*

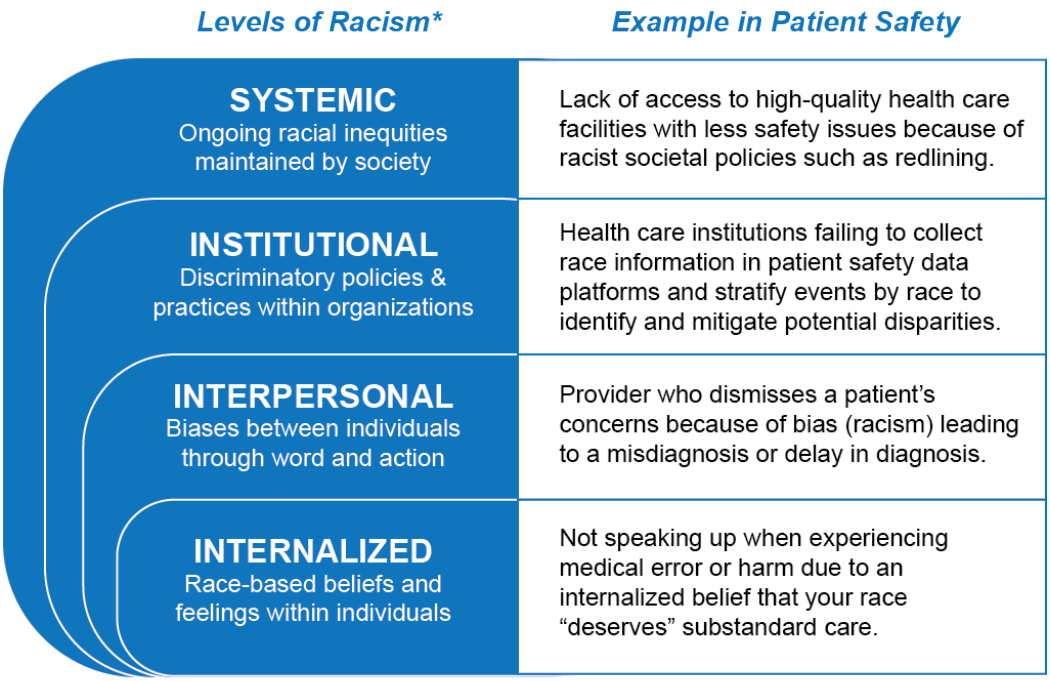
[1] *Structural racism* is a subtype of *systemic racism*, and the terms are often used interchangeably.

in action—a reporting system that does not capture data about race. It is not acceptable to have a vendor that includes no one at the table to capture this type of data.

Finally, interviewees discussed how the difficulty of measuring and "proving" racism and the politically charged nature of racism might explain why it is avoided in discussions and not seen as a cause of disparities in patient safety events. As SME 12 shared, "*Racism is hard to prove; no one wants to feel they're a racist, so measuring and showing the problem exists is critical*."

Informed by our literature review and based on our discussions with SMEs, we developed Figure 3.1 to illustrate the many types and levels of racism and their impact on patient safety events. Of note, some forms of racism permeate across levels.

Figure 3.1. Levels of Racism in Patient Safety



*Some forms of racism permeated across levels

Systemic and Institutional Racism and Risks for Patient Safety Events

SMEs felt that poorly functioning health systems increased the risk of patient safety events. SME 12 shared the story of a patient who had an abnormal finding on imaging performed in the emergency department (ED). The patient had low English proficiency and was uninsured, so he could only seek care in a public health system. When the patient was discharged from the ED, he was told to follow up with his primary care clinician for repeat imaging. The patient had to wait one year to establish care with a primary care clinician. At this point, the incidental finding had turned into metastatic cancer. This patient safety event, delayed diagnosis, occurred because of SDOH—preferred language, insurance, and income. We heard a range of views on the

relationship between SDOH and racism. On one end, SMEs stressed the importance of separating SDOH from racism; others reflected that SDOH were a downstream effect of racist policies and principles that had led to unequal distribution of wealth and power. Interviewees also noted how data demonstrating lower quality of care in health systems that primarily served minoritized patients (Hasnain-Wynia et al., 2007; Hasnain-Wynia et al., 2010) and increased rates of patient safety events in these settings (Gangopadhyaya, 2021a) were in fact other examples of systemic racism. These disparities exist because safety-net facilities often have less-robust care teams, the ratio of health care workforce per patient is lower, and there are less-advanced electronic health records that can help prevent patient safety events. These health systems are underresourced because of who is valued in our society.

SMEs also discussed how minoritized patients may be more likely to experience misdiagnosis and delays in care because of how structural racism is imbued in medical education and diagnostic guidelines. For example, interviewees noted how medical students often only learn about skin diseases on light skin, thus missing diagnoses in patients with darker pigmentation. SMEs described how race-based estimates, such as that for estimated glomerular filtration rate (eGFR), may increase delays in diagnosis of kidney disease, early referral to nephrologists, and lower rates of kidney transplantation in patients of color (Eneanya, Yang, and Reese, 2019), which they saw as patient safety events. As SME 9 commented,

> *There's a hidden curriculum where you become accultured without knowing that things they're teaching you to do is leading to bias in clinical decisionmaking, which can lead to patient safety [events], most often undiagnosed, untreated . . . whatever the case may be.*

SMEs commented on the importance of strong leadership in health systems that is committed to patient safety and health equity. Interviewees spoke of how leaders may state that they are committed to patient safety, but their actions suggest otherwise. Similarly, they commented on how leaders can perpetuate inequities in care if they are not committed to addressing disparities in patient safety events. SMEs also brought up the importance of the culture of safety. While interviewees noted the importance of organizations holding people responsible for their actions, they also highlighted how organizations that penalize health care workers for errors could perpetuate unsafe conditions, which has been described in the literature (Grailey et al., 2021). They also noted how psychologically unsafe environments (i.e., environments in which it does not feel safe to take interpersonal risks, such as reporting unsafe or unjust care; Edmondson, 1999) could perpetuate disparities in care. For example, if an organization is not inclusive, such that a clinician from a minoritized group feels psychologically unsafe, that clinician may fear repercussions if they speak up about unsafe patient care conditions.

In addition to leadership and culture, SMEs noted how health care workers in understaffed health systems—which many noted has been exacerbated by the coronavirus pandemic—may lead to more medical errors. Additionally, this stressed and underresourced work environment

may perpetuate racism in care because providers may be more likely to depend on heuristic thinking (i.e., mental shortcuts) (Agency for Healthcare Research and Quality, 2021), and thus clinicians may be more likely to introduce bias in their care.

Interpersonal and Internalized Racism and Risks for Patient Safety Events

SMEs noted how patient factors such as low health literacy, limited English proficiency or having a preferred language other than English, public insurance, and number of medical comorbidities increased the risk of experiencing a patient safety event. However, there were differing opinions on whether these factors needed to be understood in the context of SDOH and/or systemic racism. As SME 5 stated, "*Don't use SDOH anymore because underneath it all is racism*." For example, minoritized patients may be at increased risk of a pressure ulcer because of poor nutritional status stemming from poor access to healthy foods in their neighborhood due to government policies such as redlining (Zhang and Ghosh, 2016). By contrast, SME 8 delineated that drivers of disparities, such as environment and income, were more important than and separate from racism and commented, "*The more important thing is not to ask about racism . . . but [to ask] what are the . . . main drivers to disparities; then you can implement a solution-based approach to combat those drivers.*"

SMEs discussed the role of communication breakdowns between patient and provider in leading to patient safety events. They discussed how provider-patient discordance on gender, race, ethnicity, or preferred language might increase the likelihood of communication breakdowns. SMEs expressed that the likelihood of miscommunications increased when providers were not culturally informed and knowledgeable about taking care of diverse patient populations.

Interviewees noted how low trust between patient and provider could also increase risk of patient safety events. They noted how a patient's lived experience, in particular experiences with racism both within and outside the health system, may erode trust. In turn, patients may be less likely to engage in their care, may feel less empowered to bring up potential safety concerns, may fear repercussions if they bring up safety concerns, and might even come to accept lower-quality care. Finally, interviewees brought up the impact of provider implicit bias (i.e., bias that is unconscious or operates outside a person's awareness) and explicit bias (i.e., bias a person is aware of). They commented on how bias impacts clinical decisionmaking and treatment of patients. As SME 10 commented, "*How [a] patient looks can determine how they are treated; those not fitting the dominant norm (White, cisgender, English-speaking male) means they are at increased risk*." SMEs also hypothesized, while acknowledging the lack of evidence, that race concordance between provider and patient may promote safer conditions of care and the willingness to speak up about unsafe conditions in patients of color. Table 3.1 summarizes the various factors that can impact the occurrence of patient safety events.

Table 3.1. Factors Related to Increased Risk of Patient Safety Events

Type	Factor
Systems factors	• Segregated health care based on insurance type • Financial barriers to access • Poorly functioning, low-resourced, stressed health systems • Race-based clinical algorithms • Bias in education and training • Lack of a culture of safety and psychological safety • Leadership failures • Overworked providers • Lack of diverse workforce or leadership
Provider factors	• Poor patient-provider communication • Differences between provider and patient in terms of preferred language, gender, culture, social status, etc. • Provider biases and stereotypes (conscious and unconscious)[a] • Cultural incompetence • Inability to build trust with patients
Patient factors	• Social risks (e.g., homelessness, insurance status, food insecurity) • Low health literacy • Language barriers or a preferred language other than English • Comorbidities • Lived experience • Lack of empowerment • Earned mistrust of health system

[a] *Conscious bias* (or *explicit bias*) occurs when a person is aware of their feelings or attitudes; *unconscious bias* (or *implicit bias*) operates outside a person's awareness.

Impact of Racism on Reporting of Patient Safety Events

Racism impacts both formal and informal reporting of patient safety events. The most common example of formal reporting of patient safety events is when events are identified and shared through voluntary incident reporting systems (Agency for Healthcare Research and Quality, 2019b). Informal reporting relates to a variety of activities, including discussing concerns in huddles or rounds or bringing up concerns to team leaders or managers. SMEs reiterated the importance of psychological safety, strong leadership, and role modeling for encouraging both formal and informal safety reporting. They also highlighted that a provider's positioning in the medical hierarchy may impact the likelihood of reporting and feelings of psychological safety. They noted how these barriers to reporting could worsen in settings where a provider does not feel a sense of equity and inclusion. As SME 11 commented,

> *We talk about components of psychological safety, feeling like you are not going to get punished if you speak up. . . . We have been seeing strong correlations between culture of safety and perceptions of diversity, equity, and inclusion. . . . Do you have that sense of belonging, like your opinion matters? Do you feel you are treated with respect? All those kinds of things that promote psychological safety are really important.*

SMEs noted that reporting is hindered by time-intensive reporting systems. SME 14, who worked as an outpatient provider in a safety-net setting, noted how cumbersome reporting was for an already overworked clinician. SMEs highlighted how informal reporting was essential because of these many barriers to formal reporting. SME 7 noted that, particularly in settings in which providers did not have a sense of equity and inclusion or in which providers experienced racism or discrimination, informal reporting may be more acceptable because there would be no "*paper trail . . . folks don't need to worry about blowback*." SME 14 highlighted the need to reframe our thinking about patient safety event reporting and highlighted how automated systems may play an important role in addressing barriers to reporting: "*Speaking up is not the right frame. If we're thinking about error detection, that's a better frame.*" Speaking up requires recognition, courage, time, and psychological safety of one individual, while a more systematic approach may be needed to more effectively address racism in patient safety.

Interviewees remarked that provider racism may lead to underreporting of events because of a lack of recognition of patient safety events in minoritized populations and few repercussions for not reporting events in minoritized patient populations. SME 4 shared a story of a patient in preterm labor who was sent home rather than being treated and ended up having a preterm birth. When reviewing the case, the clinician involved said that this occurred because the patient missed her prenatal visits. SME 4 reflected, "*There is an opportunity to consistently see patient blame*," rather than to see this as a safety event. SMEs also noted how patients who felt empowered by the health system—often nonminoritized patients—may be more likely to point out an error to their health care team than a patient who has been marginalized by the health care system, leading to more provider reporting.

We asked interviewees what role patients should play in identifying patient safety events and the relationship between patient identification of events and racism. They felt that health systems should not depend on patients to identify patient safety events but noted that, ideally, patients should be made to feel comfortable reporting patient safety events. As SME 2 noted,

> *I am a sick person in the hospital. I gotta worry about that? . . . [Something] is wrong with health care asking a sick patient to make sure they are safe, that's our responsibility [as health care providers]. . . . Yes, we want them to speak up and bring it to the attention [of] someone, but the onus [should not be on them].*

They also discussed how patients who were already concerned about bias, discrimination, or racism would be less inclined to speak up about safety concerns, further perpetuating disparities in patient safety events. As SME 13 noted, "*There is the perception that I got a foot in the door. . . . I have to do whatever I have to do to stay here, and I choose my battles, I will complain about it to others, but I won't speak up about it.*"

Gaps and Future Directions

For the most part, SMEs said that their health system did not identify disparities in patient safety events, and they were aware of few health systems that did. SME 6 also remarked that the patient safety events tracked by health systems, including the Joint Commission sentinel events, subscribe to a narrow definition of *patient safety events* and may not reflect all harms experienced by minoritized patient populations:

> *Microaggression or all aggressions (e.g., someone makes fun of someone's name, or someone doesn't use the interpreter phone), no one reports that. But [these are the] same near harm and early miss as an extra 500 mg of Tylenol [very high levels of acetaminophen can cause liver failure] that will lead to greater harm. [We] need a framework shift of what we consider patient safety issues, and how we might consider bias, xenophobia, classism—those are safety issues and how might we report earlier upstream versus realizing it's from bias after it happened when doing a [root cause analysis].*

Four interviewees noted that their respective health systems were starting to collect patient demographic data as part of patient safety reporting and even stratifying those data to identify disparities. SME 10 spoke of how a concerted effort in their organization was made to incorporate health equity into patient safety, including stratifying data by patient race, ethnicity, gender, preferred language, and disability. When they started to "*systematically embed equity into these systems*," they saw an upsurge in reporting of events related to minoritized racial and ethnic patient groups and non–English-speaking patients. Prior to this, events were overrepresented in White, English-speaking patients. Stratifying by patient demographics also helped to identify potential areas of bias in care.

SMEs noted the importance of incorporating equity into patient safety but also acknowledged the challenges in doing this. SMEs noted that patient safety and health equity were closely linked. As SME 3 noted, "*Many organizations struggle on how to address this and believe they have to build a separate infrastructure, which is costly. Equity is an improvement activity; it's righting a wrong and that's what improvement is.*" SMEs emphasized the importance of good data to begin to understand how racism impacted patient safety. They commented on how governing bodies both internal, such as boards of trustees of health systems, and external, such as the Joint Commission, had to enforce data collection of patient demographics in patient safety reporting. SME 3, however, felt there was sufficient evidence that racism does lead to patient safety events and cautioned against overemphasizing a need for data:

> *Can we ever prove [that an event was due to racism]? Probably not. But [there are] so many cases where delay in care, where dismissal of complaints, where [suspicions] that they are drug-seeking . . . have led to harm. There are some things that you don't have to prove, that you don't need data for.*

In addition to the need to collect data that identified disparities in patient safety, SMEs also emphasized the importance of health professional training to address racism in care, case studies to demonstrate how racism impacts patient safety, implicit bias training, and diversity and inclusion in leadership to increase the likelihood that health systems prioritize equity.

Chapter 4. Recommendations

Dismantling Racism in Patient Safety

In this chapter, we use our findings to recommend future directions for advancing the fields of patient safety and health equity with a specific focus on addressing racism. Our recommendations include short-, medium-, and long-term actions for health systems, funders, and policymakers described in the opportunities under each recommendation and displayed in Table 4.1.

Recommendation 1: Implement an Equity Approach to Patient Safety Data Collection

Challenge: Identifying racial disparities in patient safety events begins with the ability to stratify patient safety events by patient characteristics (e.g., race, ethnicity, gender, preferred language, insurance). Identifying the role of racism in the occurrence of patient safety events can be accelerated when reporters are able to implicate racism as a contributing factor in a patient safety event. Advancing research to fully understand the role of racism in patient safety is hampered by limitations related to incomplete or inaccurate data on race and ethnicity. Furthermore, most patient safety reporting systems do not collect race and ethnicity information. Most patient safety databases also do not offer the reporter an opportunity to disclose whether they believe that racism may have played a role in the occurrence of the patient safety event. The failure to collect race, ethnicity, and other patient characteristics and the role of racism in patient safety reports are forms of systemic racism because they perpetuate disparities and inequities.

Opportunity: To address racism and patient safety, health systems, funders, policymakers, and regulatory organizations must first acknowledge that racism exists in medicine, including patient safety. Action must follow acknowledgement, and that includes improved data collection. Health systems must begin to systematically collect race, ethnicity, and other patient characteristics in patient safety event reporting systems and track the role of racism in patient safety events. Because efforts to redesign patient safety reporting to include these parameters will be resource-intensive for health systems, funders can accelerate these efforts by funding health systems' efforts to implement these changes. Funders should focus specifically on lower-resourced health systems so as to not perpetuate inequities. In addition, because health system priorities are often influenced by regulatory requirements and professional organizations, policymakers and regulatory bodies such as Patient Safety Organizations, the Joint Commission, the Consumer Assessment of Healthcare Providers and Systems, and the Healthcare Effectiveness Data and Information Set must hold health care systems accountable for collection of these data and support lower-resourced health systems in collecting these data. Finally, as noted in the interviews, patient safety regulatory organizations should bring an equity lens—

being intentional in centering equity in any practices or policies—to defining patient safety events (e.g., microaggressions).

Potential impact: As identified in the interviews, those health systems that began to systematically collect patient demographics, including race and ethnicity in patient safety reports, were able to stratify events accordingly to identify and address disparities. In addition, a reporter's ability to implicate racism as a contributing factor to a patient safety event increases the likelihood that those responsible for investigating the root causes of patient safety events will incorporate this lens in the analysis. When all health systems implement such practices, systematically identifying and addressing disparities and racism becomes the standard in health care, best practices for addressing disparities and racism emerge, and, over time, a widespread reduction in disparities and racism in patient safety events is possible.

Recommendation 2: Improve the User Experience in Formal Reporting Systems

Challenge: The health care setting is high-risk, fast-paced, complex, and resource-limited. Identifying patient safety events is especially critical for improvement. Formal patient safety event reporting systems must be designed to encourage users to report as consistently, efficiently, and thoroughly as possible. As reported in the interviews, most patient safety reporting systems are complex, cumbersome, and duplicative of the information entered in the electronic health record. In addition, for those who push through the complexities, there is rarely a feedback loop that enables the reporter to learn of the outcome or resolution. These complex reporting systems and the lack of communication following reporting do not encourage but instead deter health care staff from reporting patient safety events. Additionally, the environmental scan revealed that health care staff differentially report patient safety events by patient race. Furthermore, lower-resourced health systems may not have the financial means to purchase easy-to-use reporting systems. The combination of reporting complexity and the lack of a feedback loop may contribute to underreporting and differential reporting by race, which also perpetuates disparities and inequities.

Opportunity: To minimize duplication and additional work for reporters, health systems should revamp formal reporting systems to include integration with the electronic health record and automated ways for identifying patient safety events. Funders should develop special funding programs available to health systems to help offset the costs of these initiatives, particularly in safety-net settings of care. As was the case with electronic health records, policymakers and regulatory bodies can develop national usability standards for patient safety reporting systems and incentivize health systems that adopt systems that adhere to those standards.

Potential impact: Reducing reporting complexity and creating a feedback loop may increase reporting frequency and decrease differential reporting by race to ultimately reduce or even eliminate disparities and inequities. Focusing efforts in lower-resourced settings will also ensure that inequities are not perpetuated.

Recommendation 3: Create a Culture for Speaking Up on Racism in Patient Safety

Challenge: As reported in the interviews, any efforts to understand, address, and eliminate racism in patient safety, including efforts to implement the preceding recommendations, must begin with a culture that empowers health care team members and patients to speak up about patient safety events, including events affecting minoritized patients. Many interviewees reported that a lack of leadership commitment, psychological safety, workforce diversity, and antiracism training contribute to a culture that perpetuates disparities and inequities.

Opportunity: To create a culture for speaking up on racism and patient safety, health systems must have a strong leadership commitment to health equity. To foster health equity, health systems must also ensure diverse leadership and a diverse workforce through a strong equity, inclusion, and diversity strategy. This strategy must ensure that these diverse voices are heard, treated equitably, included, and respected. This strategy must also include a strong health professional training curriculum that incorporates antiracism training and education on disparities, health equity, and patient safety. Health systems can also empower patients by embedding more patient advocates in care settings and enforcing the use of interpreters to support patients who have a preferred language other than English. They can create low-barrier reporting of events by patients and embed reporting on racism into existing patient grievance processes (Centers for Medicare & Medicaid Services, 2021). Funders can encourage progress by funding health systems' efforts to implement these strategies. Policymakers and regulatory bodies can enforce and incentivize the implementation of these strategies and support health systems' efforts by requiring changes in medical education to remove racist curricula and teach race as a social construct.

Potential impact: When all health systems have a culture that promotes speaking up on racism, as demonstrated by a strong leadership commitment, psychological safety, workforce diversity, and antiracism training, this will likely lead to an increase in the identification of patient safety events. When racist components of medical education curricula are also eradicated, this will create an environment conducive to identifying, addressing, and eradicating racism as a contributing factor to patient safety events.

Additional Recommendations

Many of the above recommendations can help move us toward more equity in patient safety; however, they do not address some of the systemic issues leading to increased patient safety events in minoritized patients. One of the drivers of disparities in care is differential access to quality health care. Universal health coverage, such as a single-payer system, may help to ameliorate the drivers of inequity in patient safety. More research is needed into these other drivers of disparities in patient safety events.

Table 4.1. Dismantling Racism in Patient Safety: Short-, Medium-, and Long-Term Actions

Organization Type	Short Term (next 9 months)	Medium Term (9 months to 2 years)	Long Term (more than 2 years)
Health systems	• Acknowledge that racism exists in medicine, including in patient safety[a] • Collect race and ethnicity in patient safety event reporting systems[a] • Stratify patient safety events by race and ethnicity[a] • Make reporting easier by automatically populating key information from the electronic health record[b] • Demonstrate a leadership commitment to health equity[c] • Enforce the use of interpreters to support patients who have a preferred language other than English[c]	• Add questions about racism in patient safety event reporting systems, root cause analyses, patient experience surveys, and quality improvement efforts[a] • Ensure diverse leadership and a diverse workforce through a robust equity, inclusion, and diversity strategy[c] • Develop a strong training curriculum that incorporates antiracism training and education on disparities, health equity, and patient safety[c]	• Apply a health equity lens when designing sustainable, systems solutions to reduce and eliminate disparities and racism[a] • Implement ongoing surveillance processes for timely identification of disparities in patient safety events[a] • Develop more automated ways to identify patient safety events to reduce reliance on staff reporting[a] • Provide protected time for providers to report patient safety events[b] • Empower patients by embedding more patient advocates in care settings and creating channels (phone line, website) to report bias, racism, and unsafe conditions[c]
Funders	• Acknowledge that racism exists in medicine, including in patient safety[a] • Identify data collection best practices in health systems[a]	• Fund health systems' efforts to redesign data collection to include race, ethnicity, and racism[a] • Provide funding to health systems that are working to revamp the complexity of reporting systems[b]	• Provide funding to develop automated methods for identifying patient safety events[b] • Fund health systems' efforts to implement strategies for creating a culture of speaking up[c]

Organization Type	Short Term (next 9 months)	Medium Term (9 months to 2 years)	Long Term (more than 2 years)
Policymakers and regulatory organizations	• Acknowledge that racism exists in medicine, including in patient safety[a] • Spearhead task force on racism and patient safety	• Require health systems to include race, ethnicity, and the role of racism information in any required patient safety event reports, quality measures, and patient experience measures[a] • Establish usability standards for patient safety event reporting systems that promote consistent, efficient, and thorough reporting[b]	• Require health systems to design sustainable, systems solutions that incorporate an equity lens to reduce future patient safety events[a] • Update national standards on existing patient complaint and grievance processes to include inquiries into perceived racism and stratify these complaints[a,b] • Update definitions of reportable events with equity in mind • Develop a national strategy to address the impact of racism on patient safety[a] • Incentivize health systems that demonstrate adopting patient safety reporting systems meeting usability standards[b] • Enforce and incentivize health systems to create a culture of speaking up on racism in patient safety events[c] • Require changes in medical education to remove racist curricula and teach race as a social construct[c]

[a] Aligned with Recommendation 1.
[b] Aligned with Recommendation 2.
[c] Aligned with Recommendation 3.

Appendix A. Data Extraction and Analysis Methods

Search date: January 18, 2022

PubMed (humans limiter applied)

SEARCH 1
Patient Safety Terms
"Patient Safety"[majr] OR "Patient Safeties"[ti] OR "patient safety"[ti] OR "Medical Errors"[majr] OR "medical error*"[ti] OR "therapeutic error*"[ti] OR "adverse events"[ti] OR "adverse event"[ti] OR "adverse reaction"[ti] OR "adverse reactions"[ti] OR "near-miss"[ti] OR "near miss"[ti] OR "Delayed Diagnosis"[majr] OR "delayed diagnos*"[ti] OR "Adverse Drug Reaction Reporting Systems"[majr] OR "Adverse Drug Reaction Reporting System*"[ti] OR "Patient Harm"[majr] OR "patient harm"[ti] OR "patient harms"[ti] OR "Accidental Falls"[majr] OR ((Fall[ti] OR Falls[ti] OR Falling[ti] OR slip[ti] OR trip*[ti]) AND (accident*[ti] OR injur*[ti] OR safety[ti] OR mobil*[ti] OR balance[ti])) OR "Harm Reduction"[majr] OR "harm reduction*"[ti] OR "reduce harm*"[ti] OR "Harm Minimization"[ti] OR "Safety Management"[majr] OR "Jurisprudence"[majr] OR malpractice[ti] OR lawsuit*[ti] OR "Law suit"[ti] OR "harmful event*"[ti] OR "risk management"[ti] OR "risk management"[majr] OR "diagnostic errors"[majr] OR "diagnostic errors"[ti]

AND

Racism/Disparities Terms
"Healthcare Disparities"[majr] OR "healthcare disparit*"[ti] OR "health care disparit*"[ti] OR racism[ti] OR Racism[majr] OR discrimination[ti] OR sexism[ti] OR sexism[majr] OR "Social Discrimination"[Mesh:NoExp] OR prejudice[majr] OR prejud*[ti] OR "race factors"[majr] OR "race factors"[ti] OR "health inequities"[majr] OR inequit*[ti] OR unequal*[ti] OR "structural racism"[ti] OR "systemic racism"[majr] OR "systemic racism"[ti]

SEARCH 2
Patient Safety Terms
"Patient Safety"[majr] OR "Patient Safeties"[ti] OR "patient safety"[ti] OR "Medical Errors"[majr] OR "medical error*"[ti] OR "therapeutic error*"[ti] OR "adverse events"[ti] OR "adverse event"[ti] OR "adverse reaction"[ti] OR "adverse reactions"[ti] OR "near-miss"[ti] OR "near miss"[ti] OR "Delayed Diagnosis"[majr] OR "delayed diagnos*"[ti] OR "Adverse Drug Reaction Reporting Systems"[majr] OR "Adverse Drug Reaction Reporting System*"[ti] OR "Patient Harm"[majr] OR "patient harm"[ti] OR "patient harms"[ti] OR "Accidental Falls"[majr] OR ((Fall[ti] OR Falls[ti] OR Falling[ti] OR slip[ti] OR trip*[ti]) AND (accident*[ti] OR injur*[ti] OR safety[ti] OR mobil*[ti] OR balance[ti])) OR "Harm Reduction"[majr] OR "harm reduction*"[ti] OR "reduce harm*"[ti] OR "Harm Minimization"[ti] OR "Safety Management"[majr] OR "Jurisprudence"[majr] OR malpractice[ti] OR lawsuit*[ti] OR "Law suit"[ti] OR "harmful event*"[ti] OR "risk management"[ti] OR "risk management"[majr] OR "diagnostic errors"[majr] OR "diagnostic errors"[ti]

AND

Provider Reporting of Patient Safety Events Terms
"hospital incident*"[ti] OR "risk report*"[ti] OR "incident report*"[ti] OR "patient safety event*"[ti] OR whistleblowing[majr] OR whistleblow*[ti] OR "whistle blow*"[ti]

Web of Science

SEARCH 1
Patient Safety Terms
TI=("Patient Safety" OR "Patient Safeties" OR "medical error*" OR "therapeutic error*" OR "adverse event*" OR "adverse reaction*" OR "risk management" OR "near-miss" OR "near miss" OR "delayed diagnos*" OR "diagnostic error*" OR "Adverse Drug Reaction Reporting System*" OR "patient harm*" OR "Accidental Falls" OR "harm reduction*" OR "reduce harm*" OR "Harm Minimization" OR "Safety Management" OR Jurisprudence OR malpractice OR lawsuit* OR "Law suit*" OR "harmful event*") OR TI=((Fall OR Falls OR Falling OR slip OR trip*) AND (accident* OR injur* OR safety OR mobil* OR balance))

AND

Racism/Disparities Terms
TI=("health equity" OR "equity and inclusion" OR inequit* OR equality OR "medical disparit*" OR "healthcare disparit*" OR "health care disparit*" OR unequal* OR "social determinants of health" OR socioeconomic OR "social disparities" OR "healthcare disparit*" OR "health care disparit*" OR racism OR "race factor*" OR discrimination OR sexism OR prejud*)

SEARCH 2
Patient Safety Terms
TI=("Patient Safety" OR "Patient Safeties" OR "medical error*" OR "therapeutic error*" OR "adverse event*" OR "adverse reaction*" OR "risk management" OR "near-miss" OR "near miss" OR "delayed diagnos*" OR "diagnostic error*" OR "Adverse Drug Reaction Reporting System*" OR "patient harm*" OR "Accidental Falls" OR "harm reduction*" OR "reduce harm*" OR "Harm Minimization" OR "Safety Management" OR Jurisprudence OR malpractice OR lawsuit* OR "Law suit*" OR "harmful event*") OR TI=((Fall OR Falls OR Falling OR slip OR trip*) AND (accident* OR injur* OR safety OR mobil* OR balance))

AND

Provider Reporting of Patient Safety Events Terms
TI=("hospital incident*" OR "risk report*" OR "incident report*" OR "patient safety event*" OR whistleblow* OR "whistle blow*")

Policy File Index

SEARCH 1
Patient Safety Terms
ti(("Patient Safety" OR "Patient Safeties" OR "medical error*" OR "therapeutic error*" OR "adverse event*" OR "adverse reaction*" OR "risk management" OR "near-miss" OR "near miss" OR "delayed diagnos*" OR "diagnostic error*" OR "Adverse Drug Reaction Reporting System*" OR "patient harm*" OR "Accidental Falls" OR "harm reduction*" OR "reduce harm*" OR "Harm Minimization" OR "Safety

Management" OR Jurisprudence OR malpractice OR lawsuit* OR "Law suit*" OR "harmful event*") OR ti((Fall OR Falls OR Falling OR slip OR trip*) AND (accident* OR injur* OR safety OR mobil* OR balance)) OR ab(("Patient Safety" OR "Patient Safeties" OR "medical error*" OR "therapeutic error*" OR "adverse event*" OR "adverse reaction*" OR "risk management" OR "near-miss" OR "near miss" OR "delayed diagnos*" OR "diagnostic error*" OR "Adverse Drug Reaction Reporting System*" OR "patient harm*" OR "Accidental Falls" OR "harm reduction*" OR "reduce harm*" OR "Harm Minimization" OR "Safety Management" OR Jurisprudence OR malpractice OR lawsuit* OR "Law suit*" OR "harmful event*") OR ab((Fall OR Falls OR Falling OR slip OR trip*) AND (accident* OR injur* OR safety OR mobil* OR balance))

AND

Racism/Disparities Terms

ti(("health equity" OR "equity and inclusion" OR inequit* OR equality OR "medical disparit*" OR "healthcare disparit*" OR "health care disparit*" OR unequal* OR "social determinants of health" OR socioeconomic OR "social disparities" OR "healthcare disparit*" OR "health care disparit*" OR racism OR "race factor*" OR discrimination OR sexism OR prejud*)) OR ab(("health equity" OR "equity and inclusion" OR inequit* OR equality OR "medical disparit*" OR "healthcare disparit*" OR "health care disparit*" OR unequal* OR "social determinants of health" OR socioeconomic OR "social disparities" OR "healthcare disparit*" OR "health care disparit*" OR racism OR "race factor*" OR discrimination OR sexism OR prejud*))

SEARCH 2

Patient Safety Terms

ti(("Patient Safety" OR "Patient Safeties" OR "medical error*" OR "therapeutic error*" OR "adverse event*" OR "adverse reaction*" OR "risk management" OR "near-miss" OR "near miss" OR "delayed diagnos*" OR "diagnostic error*" OR "Adverse Drug Reaction Reporting System*" OR "patient harm*" OR "Accidental Falls" OR "harm reduction*" OR "reduce harm*" OR "Harm Minimization" OR "Safety Management" OR Jurisprudence OR malpractice OR lawsuit* OR "Law suit*" OR "harmful event*") OR ti((Fall OR Falls OR Falling OR slip OR trip*) AND (accident* OR injur* OR safety OR mobil* OR balance)) OR ab(("Patient Safety" OR "Patient Safeties" OR "medical error*" OR "therapeutic error*" OR "adverse event*" OR "adverse reaction*" OR "risk management" OR "near-miss" OR "near miss" OR "delayed diagnos*" OR "diagnostic error*" OR "Adverse Drug Reaction Reporting System*" OR "patient harm*" OR "Accidental Falls" OR "harm reduction*" OR "reduce harm*" OR "Harm Minimization" OR "Safety Management" OR Jurisprudence OR malpractice OR lawsuit* OR "Law suit*" OR "harmful event*") OR ab((Fall OR Falls OR Falling OR slip OR trip*) AND (accident* OR injur* OR safety OR mobil* OR balance))

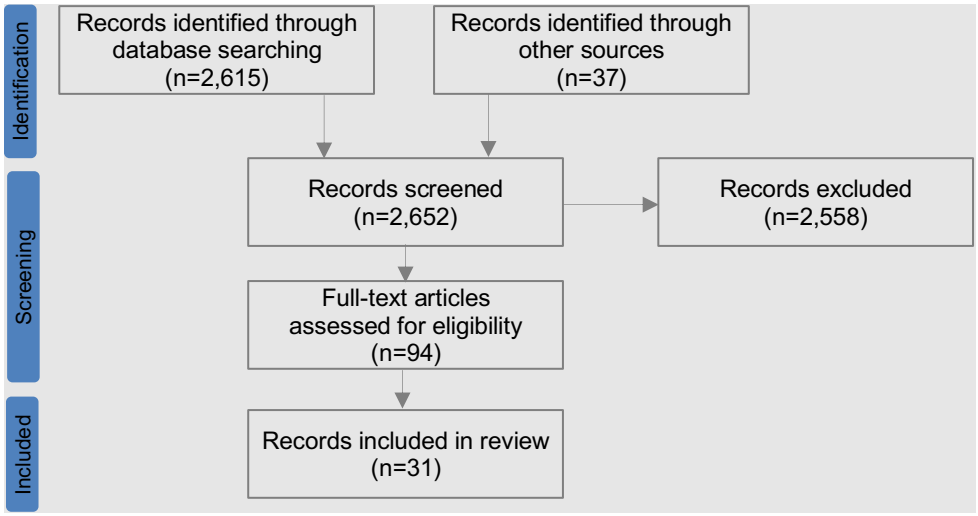
AND

Provider Reporting of Patient Safety Events Terms

ti("hospital incident*" OR "risk report*" OR "incident report*" OR "patient safety event*" OR whistleblow* OR "whistle blow*") OR ab("hospital incident*" OR "risk report*" OR "incident report*" OR "patient safety event*" OR whistleblow* OR "whistle blow*")

Figure A.1 illustrates which articles were included.

Figure A.1. PRISMA Flow Diagram



Qualitative Data Analysis

The research team met regularly prior to and during data collection to discuss the data collection approach and emerging themes. Using rapid thematic content analysis (Averill, 2002; Hamilton and Finley, 2019; Taylor et al., 2018), we organized the interview notes and transcriptions by 22 key interview questions organized across seven substantive domains: (1) factors that increase the risk of a patient safety event; (2) factors that encourage formal reporting; (3) factors that discourage formal reporting; (4) the role of informal reporting or speaking up; (5) reasons minoritized patients may be more or less likely to experience patient safety events, to have events identified, and to have them reported; (6) whether health systems identify disparities in patient safety events; and (7) the relationship between racism (and/or implicit bias) and patient safety, using a matrix in Excel. Following each interview, the notetaking researcher inserted detailed notes into the matrix regarding participant response to the interview questions, along with illustrative quotes. The interviewer then reviewed the items in the matrix for that interview to ensure accuracy and completeness. Use of rapid analysis and matrixes allowed the researchers to streamline the process of identifying similarities, differences, and trends in responses across the participants. Themes generated in rapid analysis have been found to be consistent with themes identified through traditional, in-depth qualitative analyses that may include double-coding and interrater reliability checks (Hamilton and Finley, 2019; Taylor et al., 2018). The study team reviewed the completed matrix and identified overarching themes from each domain based on their prevalence and cohesiveness across interviews and also incorporated inconsistent perspectives (i.e., negative case analysis). Themes were refined based on ongoing team discussions and discussions with our California Health Care Foundation project officer.

Appendix B. Interview Guide

Introduction
Before we begin, we will present some working definitions.

When we talk about patient safety, we define it using the Agency for Healthcare Research and Quality's definition, where "patient safety includes the prevention of diagnostic errors, medical errors, injury or other preventable harm to a patient during the process of health care and reduction of risk of unnecessary harm associated with health care."

When we talk about health equity, we define it using the Robert Wood Johnson Foundation definition, "health equity means that everyone has a fair and just opportunity to be as healthy as possible. This requires removing obstacles to health such as poverty, discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care."

1. Please tell me a bit about your professional background.
    a. If not addressed: professional experience as it relates to patient safety (research, clinical, administrative/leadership role).
    b. If not addressed: professional experience as it relates to expertise around health equity (research, clinical, administrative/leadership role).

2. Is there anything else you'd like to share regarding your experience with and/or knowledge of patient safety, health equity, and racial disparities? [If yes, "Please share." If no, move to the next question]

The next set of questions are on the topic of providers speaking up about patient safety events.

1. What factors do you think increase the risk of patients experiencing a patient safety event?
    a. Provider factors (e.g., experience, personality, role, specialty)
    b. Patient factors (e.g., comorbidities, personality traits, insurance, race, ethnicity, preferred language, hospital/site of treatment, personality)
    c. System factors (e.g., culture of safety)

2. What factors do you think promote speaking up or formal reporting of a patient safety event?
    a. Provider personal characteristics (e.g., certain provider personalities more likely to speak up, role in the health system)
        i. If not addressed, ask about provider race, ethnicity, gender, role in the medical "hierarchy."

        ii. How does concordance on race or ethnicity or gender between the provider and patient impact the likelihood of reporting a patient safety event?
    b. Patient factors (e.g., comorbidity, personality traits, insurance, race, ethnicity, hospital/site of treatment, personality)
    c. System factors (e.g., culture of safety, ease of reporting)

3. Some studies have demonstrated that patients of color are more likely to experience patient safety events, while others have found risk to be similar or higher in White patients. What do you make of these mixed findings?
    a. Probe: Patients of color more likely to experience some patient safety events and not others? Why?
    b. Probe: Patients of color are less likely to have events reported?
    c. Probe: No gold standard for identifying patient safety events?

4. What health system factors encourage or hinder providers to formally report patient safety events?
    a. Probe: Informal and formal reporting systems, culture, training, resources, fear of sanctions
    b. Probe: How do these factors affect patients of varying backgrounds?

5. We understand that there are informal ways to speak up about patient safety issues. Does that sound right to you? If so, what are examples of these informal ways and what facilitates this type of speaking up? On the flip side, what are potential barriers?
    a. Patient
    b. Provider
    c. System

6. Some studies have demonstrated that health care staff are *less* likely to formally report patient safety events for patients of color versus White patients. Why do you think that is?
    a. Probe: Do you think health systems adequately explore the role of race in patient safety events? Why or why not?

7. What suggestions do you have for health systems to encourage providers to speak up about and/or formally report patient safety events involving patients of color?

8. What role if any should patients play in speaking up about patient safety events or reporting patient safety events?
    a. [If think patients should play a role] What do you think health systems can do to empower patients, particularly patients of color, to speak up about patient safety events?

Next, we are going to discuss racial disparities in patient safety events and the role of racism and bias in these events.

1. Does your health system identify disparities in patient safety events?
    a. Probe: [If no or not part of a health system] Do you know of health systems that identify disparities in patient safety events?
    b. Probe: How effective is this system at identifying disparities? What are the strengths and weaknesses?
    c. Probe: Does your health system or do you know of health systems that identify racism as a contributor to (or cause of) a patient safety event?

2. Do you believe that racism increases the risk of certain types of patient safety events more than others? Why or why not?
    a. Probe: Can you share examples or anecdotes?
    b. Probe: How do implicit biases of providers impact patient safety?
    c. Probe: How does racism increase or decrease the likelihood of such an event being identified? Reported?

3. What suggestions do you have for further reading on these topics?

4. Who else would you recommend we speak with about this important topic?

5. What additional comments do you have about what we discussed today?

Lastly, I just have a few demographic questions to ask you.

1. What gender do you identify with?

2. Are you Hispanic or Latino origin or descent?
    a. Yes, Hispanic or Latino
    b. No, not Hispanic or Latino

3. What is your race? (ask to self-identify, options below if needed for probing)
    a. White
    b. Black or African American
    c. Asian
    d. Native Hawaiian or other Pacific Islander
    e. American Indian or Alaska Native
    f. Other: _____

Abbreviations

CHCF	California Health Care Foundation
ED	emergency department
eGFR	estimated glomerular filtration rate
PRISMA	Preferred Reporting Items for Systemic Reviews and Meta-Analyses
PSI	patient safety indicator
SDOH	social determinants of health
SME	subject-matter expert

References

Agency for Healthcare Research and Quality, "Disparities," webpage, undated a. As of June 20, 2022: https://www.ahrq.gov/topics/disparities.html#:~:text=Healthcare%20disparities%20are%20differences%20in,or%20gender%20and%20populations%20identified

———, "Patient Safety Indicators Overview," webpage, undated b. As of June 20, 2022: https://qualityindicators.ahrq.gov/measures/psi_resources

———, "Topic: Patient Safety," webpage, undated c. As of June 20, 2022: https://www.ahrq.gov/topics/patient-safety.html#:~:text=Patient%20safety%20includes%20prevention%20of,harm%20associated%20with%20health%20care

———, "PSNet: Adverse Events, Near Misses, and Errors," webpage, September 7, 2019a. As of June 20, 2022: https://psnet.ahrq.gov/primer/adverse-events-near-misses-and-errors

———, "PSNet: Reporting Patient Safety Events," webpage, September 7, 2019b. As of June 20, 2022: https://psnet.ahrq.gov/primer/reporting-patient-safety-events

———, "Heuristic," webpage, September 13, 2021. As of June 13, 2022: https://psnet.ahrq.gov/glossary/heuristic

Averill, J. B., "Matrix Analysis as a Complementary Analytic Strategy in Qualitative Inquiry," *Qualitative Health Research*, Vol. 12, No. 6, July 2002, pp. 855–866.

Baehr, A., J. C. Peña, and D. J. Hu, "Racial and Ethnic Disparities in Adverse Drug Events: A Systematic Review of the Literature," *Journal of Racial and Ethnic Health Disparities*, Vol. 2, No. 4, December 2015, pp. 527–536.

Bailey, Z. D., N. Krieger, M. Agénor, J. Graves, N. Linos, and M. T. Bassett, "Structural Racism and Health Inequities in the USA: Evidence and Interventions," *The Lancet*, Vol. 389, No. 10077, April 8, 2017, pp. 1453–1463.

Bakullari, A., M. L. Metersky, Y. Wang, N. Eldridge, S. Eckenrode, M. M. Pandolfi, L. Jaser, D. Galusha, and E. Moy, "Racial and Ethnic Disparities in Healthcare-Associated Infections in the United States, 2009–2011," *Infection Control and Hospital Epidemiology*, Vol. 35, Suppl. 3, October 2014, pp. S10–S16.

Berg, C. J., W. M. Callaghan, C. Syverson, and Z. Henderson, "Pregnancy-Related Mortality in the United States, 1998 to 2005," *Obstetrics and Gynecology*, Vol. 116, No. 6, December 2010, pp. 1302–1309.

Berg, C. J., M. A. Harper, S. M. Atkinson, E. A. Bell, H. L. Brown, M. L. Hage, A. G. Mitra, K. J. Moise, Jr., and W. M. Callaghan, "Preventability of Pregnancy-Related Deaths: Results of a State-Wide Review," *Obstetrics and Gynecology*, Vol. 106, No. 6, December 2005, pp. 1228–1234.

Biggers, A., "Racism in Healthcare: What You Need to Know," *Medical News Today*, September 16, 2020. As of September 8, 2021: https://www.medicalnewstoday.com/articles/racism-in-healthcare

Boatright, D., D. Berg, and I. Genao, "A Roadmap for Diversity in Medicine During the Age of COVID-19 and George Floyd," *Journal of General Internal Medicine*, Vol. 36, No. 4, April 2021, pp. 1089–1091.

Braveman, P. A., E. Arkin, D. Proctor, T. Kauh, and N. Holm, "Systemic and Structural Racism: Definitions, Examples, Health Damages, and Approaches to Dismantling," *Health Affairs (Millwood)*, Vol. 41, No. 2, February 2022, pp. 171–178.

Centers for Medicare & Medicaid Services, "Grievances," webpage, December 1, 2021. As of June 20, 2022: https://www.cms.gov/Medicare/Appeals-and-Grievances/MMCAG/Grievances

Classen, D. C., R. Resar, F. Griffin, F. Federico, T. Frankel, N. Kimmel, J. C. Whittington, A. Frankel, A. Seger, and B. C. James, "'Global Trigger Tool' Shows That Adverse Events in Hospitals May Be Ten Times Greater Than Previously Measured," *Health Affairs (Millwood)*, Vol. 30, No. 4, April 2011, pp. 581–589.

Coffey, R. M., R. M. Andrews, and E. Moy, "Racial, Ethnic, and Socioeconomic Disparities in Estimates of AHRQ Patient Safety Indicators," *Medical Care*, Vol. 43, No. 3, March 2005, pp. I-48–I-57.

Edmondson, Amy, "Psychological Safety and Learning Behavior in Work Teams," *Administrative Science Quarterly*, Vol. 44, No. 2, June 1999, pp. 350–383.

Eneanya, N. D., W. Yang, and P. P. Reese, "Reconsidering the Consequences of Using Race to Estimate Kidney Function," *JAMA*, Vol. 322, No. 2, 2019, pp. 113–114.

Epstein, A. M., and J. Z. Ayanian, "Racial Disparities in Medical Care," *New England Journal of Medicine*, Vol. 344, No. 19, May 10, 2001, pp. 1471–1473.

Feeley, D., and T. Torres, "The Role of Racism as a Core Patient Safety Issue," *Healthcare Executive*, Vol. 35, No. 1, January 2020, pp. 58–61.

Fiscella, K., P. Franks, M. R. Gold, and C. M. Clancy, "Inequality in Quality: Addressing Socioeconomic, Racial, and Ethnic Disparities in Health Care," *JAMA*, Vol. 283, No. 19, May 17, 2000, pp. 2579–2584.

Flanagin, A., T. Frey, S. L. Christiansen, and AMA Manual of Style Committee, "Updated Guidance on the Reporting of Race and Ethnicity in Medical and Science Journals," *JAMA*, Vol. 326, No. 7, August 17, 2021, pp. 621–627.

Gangopadhyaya, Anuj, "Black Patients Are More Likely Than White Patients to Be in Hospitals with Worse Patient Safety Conditions," Washington, D.C.: Urban Institute, March 2021a.

———, "Do Black and White Patients Experience Similar Rates of Adverse Safety Events at the Same Hospital?" Washington, D.C.: Urban Institute, July 2021b.

Gaskin, D. J., C. S. Spencer, P. Richard, G. F. Anderson, N. R. Powe, and T. A. LaVeist, "Do Hospitals Provide Lower-Quality Care to Minorities Than to Whites?" *Health Affairs (Millwood)*, Vol. 27, No. 2, March–April 2008, pp. 518–527.

Grailey, K. E., E. Murray, T. Reader, and S. J. Brett, "The Presence and Potential Impact of Psychological Safety in the Healthcare Setting: An Evidence Synthesis," *BMC Health Services Research*, Vol. 21, No. 773, August 5, 2021.

Guest, Greg, Arwen Bunce, and Laura Johnson, "How Many Interviews Are Enough? An Experiment with Data Saturation and Variability," *Field Methods*, Vol. 18, No. 1, 2006, pp. 59–82.

Hamilton, A. B., and E. P. Finley, "Qualitative Methods in Implementation Research: An Introduction," *Psychiatry Research*, Vol. 280, October 2019.

Hasnain-Wynia, R., D. W. Baker, D. Nerenz, J. Feinglass, A. C. Beal, M. B. Landrum, R. Behal, and J. S. Weissman, "Disparities in Health Care Are Driven by Where Minority Patients Seek Care: Examination of the Hospital Quality Alliance Measures," *Archives of Internal Medicine*, Vol. 167, No. 12, June 25, 2007, pp. 1233–1239.

Hasnain-Wynia, R., R. Kang, M. B. Landrum, C. Vogeli, D. W. Baker, and J. S. Weissman, "Racial and Ethnic Disparities Within and Between Hospitals for Inpatient Quality of Care: An Examination of Patient-Level Hospital Quality Alliance Measures," *Journal of Health Care for the Poor and Underserved*, Vol. 21, No. 2, May 2010, pp. 629–648.

Hollingsworth, J. M., X. Yu, P. L. Yan, H. Yoo, D. A. Telem, E. N. Yankah, J. Zhu, A. K. Waljee, and B. K. Nallamothu, "Provider Care Team Segregation and Operative Mortality Following Coronary Artery Bypass Grafting," *Circulation: Cardiovascular Quality and Outcomes*, Vol. 14, No. 5, May 2021.

Howell, E. A., J. Zeitlin, P. Hebert, A. Balbierz, and N. Egorova, "Paradoxical Trends and Racial Differences in Obstetric Quality and Neonatal and Maternal Mortality," *Obstetrics and Gynecology*, Vol. 121, No. 6, June 2013, pp. 1201–1208.

Institute of Medicine, *To Err Is Human: Building a Safer Health System*, Washington, D.C.: National Academies Press, 2000.

Institute of Medicine, *Crossing the Quality Chasm: A New Health System for the 21st Century*, Washington, D.C.: National Academies Press, 2001.

Institute of Medicine, *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*, Washington, D.C.: National Academies Press, 2003.

Institute of Medicine, *Patient Safety: Achieving a New Standard for Care*, Washington, D.C.: National Academies Press, 2004.

Joint Commission, *Comprehensive Accreditation Manual for Hospitals 2016, Update 2*, Oak Brook, Ill., 2016.

Joint Commission, "Sentinel Event Definition, Policy Revised," webpage, July 21, 2021. As of June 20, 2022: https://www.jointcommission.org/resources/news-and-multimedia/newsletters/newsletters/joint-commission-online/july-21-2021/sentinel-event-definition-policy-revised/#.YrEA5nbMKUl

Metersky, M. L., D. R. Hunt, R. Kliman, Y. Wang, M. Curry, N. Verzier, C. H. Lyder, and E. Moy, "Racial Disparities in the Frequency of Patient Safety Events: Results from the National Medicare Patient Safety Monitoring System," *Medical Care*, Vol. 49, No. 5, May 2011, pp. 504–510.

Milner, A., and S. Jumbe, "Using the Right Words to Address Racial Disparities in COVID-19," *Lancet Public Health*, Vol. 5, No. 8, August 2020, pp. e419–e420.

Naessens, J. M., C. R. Campbell, N. Shah, B. Berg, J. J. Lefante, A. R. Williams, and R. Culbertson, "Effect of Illness Severity and Comorbidity on Patient Safety and Adverse Events," *American Journal of Medical Quality*, Vol. 27, No. 1, January–February 2012, pp. 48–57.

National Institute on Minority Health and Health Disparities, "Minority Health and Health Disparities: Definitions and Parameters," webpage, March 31, 2021. As of May 26, 2022: https://www.nimhd.nih.gov/about/strategic-plan/nih-strategic-plan-definitions-and-parameters.html

Nelson, A., "Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care," *Journal of the National Medical Association*, Vol. 94, No. 8, August 2002, pp. 666–668.

Okoroh, J. S., E. F. Uribe, and S. Weingart, "Racial and Ethnic Disparities in Patient Safety," *Journal of Patient Safety*, Vol. 13, No. 3, September 2017, pp. 153–161.

Paradies, Y., J. Ben, N. Denson, A. Elias, N. Priest, A. Pieterse, A. Gupta, M. Kelaher, and G. Gee, "Racism as a Determinant of Health: A Systematic Review and Meta-Analysis," *PLoS One*, Vol. 10, No. 9, 2015.

Petersen, E. E., N. L. Davis, D. Goodman, S. Cox, C. Syverson, K. Seed, C. Shapiro-Mendoza, W. M. Callaghan, and W. Barfield, "Racial/Ethnic Disparities in Pregnancy-Related Deaths—United States, 2007–2016," *MMWR Morbidity and Mortality Weekly Report*, Vol. 68, No. 35, September 6, 2019, pp. 762–765.

Piccardi, C., J. Detollenaere, P. Vanden Bussche, and S. Willems, "Social Disparities in Patient Safety in Primary Care: A Systematic Review," *International Journal for Equity in Health*, Vol. 17, No. 114, August 7, 2018.

Pinheiro, L. C., E. Reshetnyak, M. M. Safford, and L. M. Kern, "Racial Disparities in Preventable Adverse Events Attributed to Poor Care Coordination Reported in a National Study of Older U.S. Adults," *Medical Care*, Vol. 59, No. 10, October 1, 2021, pp. 901–906.

Robert Wood Johnson Foundation, "What Is Health Equity?" webpage, May 1, 2017. As of May 26, 2022: https://www.rwjf.org/en/library/research/2017/05/what-is-health-equity-.html

Schulson, L. B., V. Novack, P. H. Folcarelli, J. P. Stevens, and B. E. Landon, "Inpatient Patient Safety Events in Vulnerable Populations: A Retrospective Cohort Study," *BMJ Quality and Safety*, Vol. 30, 2021, pp. 372–379.

Serafini, K., C. Coyer, J. S. Brown Speights, D. Donovan, J. Guh, J. C. Washington, and C. Ainsworth, "Racism as Experienced by Physicians of Color in the Health Care Setting," *Family Medicine*, Vol. 52, No. 4, April 2020, pp. 282–287.

Sharma, A. E., J. Yang, J. B. Del Rosario, M. Hoskote, N. A. Rivadeneira, Stakeholder Research Advisory Council, and U. Sarkar, "What Safety Events Are Reported for Ambulatory Care? Analysis of Incident Reports from a Patient Safety Organization," *Joint Commission Journal on Quality and Patient Safety*, Vol. 47, No. 1, 2021, pp. 5–14.

Shen, J. J., C. R. Cochran, O. Mazurenko, C. B. Moseley, G. Shan, R. Mukalian, and S. Neishi, "Racial and Insurance Status Disparities in Patient Safety Indicators Among Hospitalized Patients," *Ethnicity and Disease*, Vol. 26, No. 3, July 21, 2016, pp. 443–452.

Shimada, S. L., M. E. Montez-Rath, S. A. Loveland, S. Zhao, N. R. Kressin, and A. K. Rosen, "Racial Disparities in Patient Safety Indicator (PSI) Rates in the Veterans Health Administration," in K. Henriksen, J. B. Battles, M. A. Keyes, and M. L. Grady, eds., *Advances in Patient Safety: New Directions and Alternative Approaches (Vol. 1: Assessment)*, Rockville, Md.: Agency for Healthcare Research and Quality, 2008.

Sim, W., W. H. Lim, C. H. Ng, Y. H. Chin, C. Y. L. Yaow, C. W. Z. Cheong, C. M. Khoo, D. D. Samarasekera, M. K. Devi, and C. S. Chong, "The Perspectives of Health Professionals and Patients on Racism in Healthcare: A Qualitative Systematic Review," *PLoS One*, Vol. 16, No. 8, 2021.

Sivashanker, K., and T. K. Gandhi, "Advancing Safety and Equity Together," *New England Journal of Medicine*, Vol. 382, No. 4, January 23, 2020, pp. 301–303.

Stockwell, D. C., C. P. Landrigan, S. L. Toomey, M. Y. Westfall, S. Liu, G. Parry, A. S. Coopersmith, and M. A. Schuster, "Racial, Ethnic, and Socioeconomic Disparities in Patient Safety Events for Hospitalized Children," *Hospital Pediatrics*, Vol. 9, No. 1, January 2019, pp. 1–5.

Suurmond, J., E. Uiters, M. C. de Bruijne, K. Stronks, and M. L. Essink-Bot, "Explaining Ethnic Disparities in Patient Safety: A Qualitative Analysis," *American Journal of Public Health*, Vol. 100, Suppl. 1, April 1, 2010, pp. S113–117.

Taylor, B., C. Henshall, S. Kenyon, I. Litchfield, and S. Greenfield, "Can Rapid Approaches to Qualitative Analysis Deliver Timely, Valid Findings to Clinical Leaders? A Mixed Methods Study Comparing Rapid and Thematic Analysis," *BMJ Open*, Vol. 8, No. 10, October 8, 2018.

Thomas, A. D., C. Pandit, and S. A. Krevat, "Race Differences in Reported Harmful Patient Safety Events in Healthcare System High Reliability Organizations," *Journal of Patient Safety*, Vol. 16, No. 4, December 2020, pp. e235–e239.

———, "Race Differences in Reported 'Near Miss' Patient Safety Events in Health Care System High Reliability Organizations," *Journal of Patient Safety*, Vol. 17, No. 8, December 2021, pp. e1605–e1608.

Weingart, S. N., O. Pagovich, D. Z. Sands, J. M. Li, M. D. Aronson, R. B. Davis, D. W. Bates, and R. S. Phillips, "What Can Hospitalized Patients Tell Us About Adverse Events? Learning from Patient-Reported Incidents," *Journal of General Internal Medicine*, Vol. 20, No. 9, September 2005, pp. 830–836.

Weissman, J. S., E. C. Schneider, S. N. Weingart, A. M. Epstein, J. David-Kasdan, S. Feibelmann, C. L. Annas, N. Ridley, L. Kirle, and C. Gatsonis, "Comparing Patient-Reported Hospital Adverse Events with Medical Record Review: Do Patients Know Something That Hospitals Do Not?" *Annals of Internal Medicine*, Vol. 149, No. 2, July 15, 2008, pp. 100–108.

Zhang, M., and D. Ghosh, "Spatial Supermarket Redlining and Neighborhood Vulnerability: A Case Study of Hartford, Connecticut," *Transaction in GIS*, Vol. 20, No. 1, February 2016, pp. 79–100.