

Strategies to Mitigate Health Inequity & Bias

IN EMERGENCY DEPARTMENT CARE DELIVERY



Mednition

Table of Contents

I. Overview	page 3
II. Bias in Delivery of Healthcare	page 8
○ Common Cognitive Errors	
○ Social Determinants of Health (SDOH) and Bias	
○ Structural Racism	
III. Consequences of Bias When Delivering Healthcare Services	page 10
○ Consequences for Patients	
○ Consequences for Emergency Departments	
IV. Mitigating the Problem of Bias in the Delivery of Healthcare	page 11
○ Conduct a Data Analysis	
○ Perform Assessments on SDOH	
○ Organizational Actions to Address Inequities and Biases	
○ Use SDOH Screening Tools	
○ Create and Deliver Education Programs	
○ Standardize Patient Care with Technology	



I. Overview

Over the past decade, there has been an increased recognition of the impact of structural racism and other biases on health care access and patient outcomes⁴. This can be particularly devastating in emergency departments where patients are generally unknown to providers and may be acutely ill or injured and the reliance on heuristics has negative consequences. This report explores the healthcare inequity in the US that members of marginalized and underserved groups may face, why they occur in emergency departments specifically, and what providers can do to mitigate them.

Health disparity¹ refers to a higher level of illness, injury, disability, or mortality experienced by members of a specific patient population who may also have inequities in access and quality of care in comparison to other groups.



There are four types of health inequity:²



Individual. These are patient-level factors that may include challenges and delays in seeking or accessing care, and difficulty in adhering to treatment plans.



Interpersonal. Interpersonal inequities are care delivery factors, such as implicit bias, stereotyping, inequitable clinical decision making, and poor communication that leads to ineffective or inappropriate care.



Institutional. These are factors endemic in healthcare, such as healthcare literacy, that cause patients with fewer resources or limited English proficiency to have trouble navigating the system. Institutional factors can also result in a lack of diversity and inclusion, as well as input from the community.



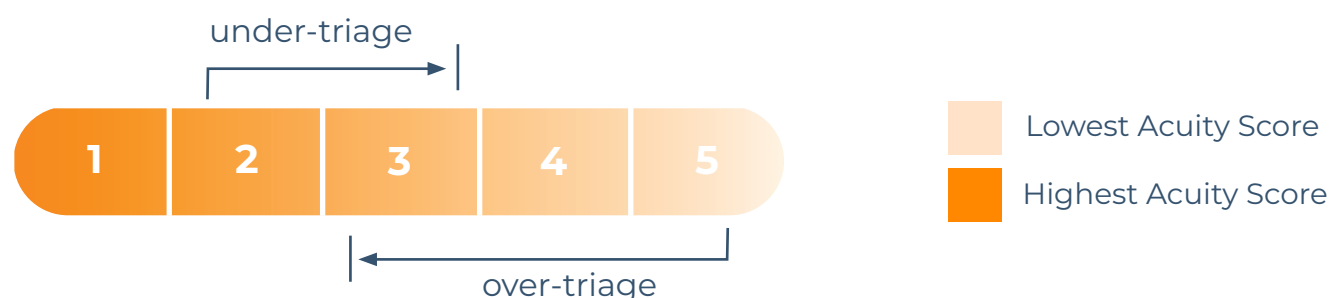
Structural. This level of inequity refers to the policies that contribute to intergenerational poverty and negative social determinants of health, or SDOH, which the Centers for Disease Control and Prevention defines as the “conditions in the places where people live, learn, work, and play that affect a wide range of health risks and outcomes.”

In the Emergency Department, individual, interpersonal, and institutional biases can affect decision-making about patients at the very beginning. Triage nurses are responsible for the initial assessment of patients and assigning an acuity level.

Most EDs in the United States use a standard 5 level triage system such as the Emergency Severity Index (ESI). In practice, however, the assignment of patient acuity varies among emergency nurses and in their respective emergency departments. Patient acuity decisions are sometimes made without basic physiologic data and can vary based on nurse skill and the social context at the time of triage. Not surprisingly, ESI and other triage systems are highly prone to individual, interpersonal, and institutional biases.

This can lead to triage errors, such as **under-triage**, which is the assignment of an inappropriately low acuity score that can result in dangerous delays of necessary medical care. Biases may also lead to **over-triage**, which occurs when less critical patients are assigned a higher priority, leading to resource overutilization and delays in providing care for those with more urgent needs.

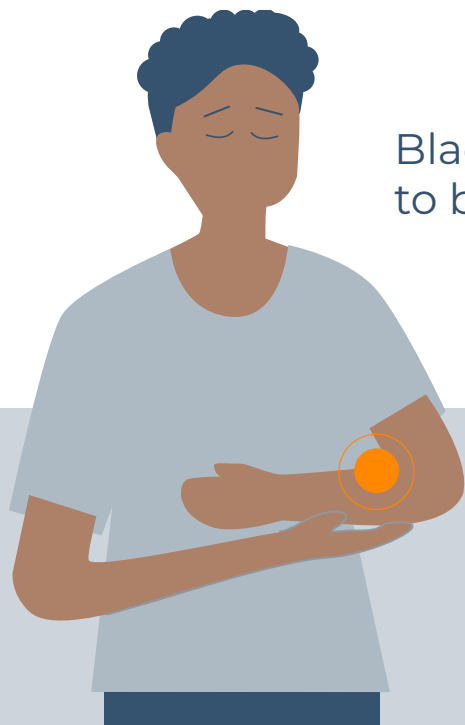
Emergency Severity Index (ESI)



Specifically, racial, age, and gender bias can impede accuracy in triage decision-making by causing nurses to ignore critical cues.

Hinson (2018) reports that high-risk presentations often went unrecognized across their general population³, while Lopez et al. (2010)⁴, Schrader and Lewis (2013)⁵, Puumala et al. (2016)⁶, and Zook et al. (2016)⁷, all noted under-triage in minority populations of all ages. Grossman et al. (2014)⁸ found significant under-triage in geriatric populations. Arslanian-Engoren (2004)⁹ described poor decision-making about women presenting with chest pain.

Black patients are more likely to be assigned lower triage acuity scores (TAS) by nurses than White patients, thus significantly increasing the time they have to wait for treatment. In fact, Black patients are given lower TAS scores than Caucasian patients when they visit EDs during the same time periods. As a result, Black patients on average have to wait 11 minutes longer to be treated than White patients. Research suggests that in comparison to White patients, Black patients are 7% less likely to be assigned an appropriate triage score, 10% less likely to be admitted to the hospital, and are 1.26 times more likely to die in the ED or in hospital.⁵



Black patients are 10% less likely to be admitted to the hospital.

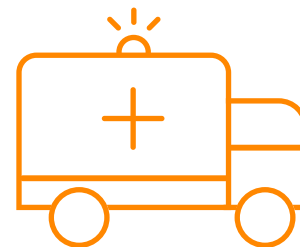


Bias has also been shown to play a role in pain management. Women are more likely than men to be given a recommendation for psychotherapy than pain management, in part because female patients are perceived as being more “emotional”.¹⁰

Myths around the pain tolerance and decreased sensitivity of Black patients lead to disparities in pain management: Black patients are 14 percent less likely to receive opioid analgesics for traumatic or surgical pain, and 34 percent less likely to receive them for chronic pain. Nursing textbooks also present pain expression as a function of “culture” leaving many nurses with residual stereotypes that can impede pain identification and management.^{11,12}

Institutional disparities in the healthcare system affect care even before the patient reaches the hospital. Among Medicare beneficiaries, while EMS providers transport White patients to the closest reference EDs 61.3 percent of the time, Black patients in the same zip code are taken to these EDs at a 5.3 percent lower rate and Hispanic patients at a 2.5 percent lower rate.

Among patients with high-risk acute conditions



61.5% of White patients are taken to reference EDs

Black patients are **6.7%** less likely to be taken to reference EDs

Hispanic patients are **2.6%** less likely to be taken to reference EDs¹³

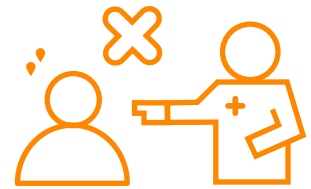
For members of the LGBTQ+ community, the specific impact of biases may be related not just to structural bias and challenges with access, but also negative experiences with use of pronouns, correct gender references, and use of the patients' name.

LGBTQ+ patients report avoiding Primary Care altogether because of healthcare barriers including lack of quality health insurance, fear of judgment or poor treatment, or past experiences of discrimination or harm.¹⁴ When patients do seek medical care in the ED, they often report negative experiences, including being misgendered, misnamed, mocked, or refused care by healthcare providers.



Transgender patients specifically have reported discrimination and offensive language from medical professionals in emergency departments.¹⁵

II. Bias in the Delivery of Healthcare

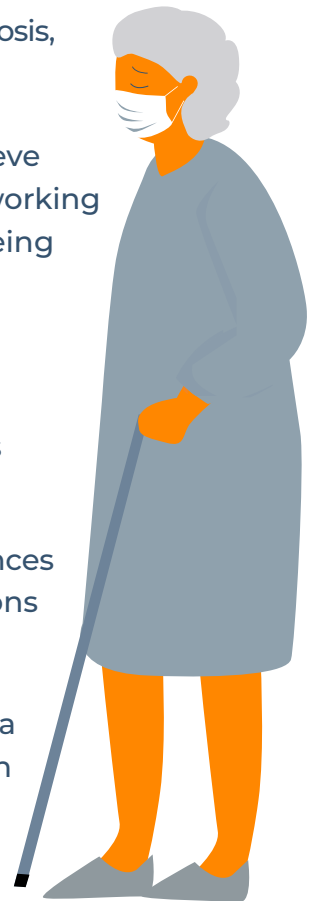


Bias does not occur in a vacuum. There are other conditions particular to each patient, including Social Determinants of Health (SDOH), which are institutionally and structurally present in healthcare. These conditions can be directly related to the manifestations of conscious and unconscious biases that medical providers may hold. These include time pressures, complex decision making, and physical and emotional fatigue. The environmental conditions of crowding, understaffing, and high patient volume may all contribute to a healthcare provider relying on mental shortcuts, or heuristics.¹⁶

Common Cognitive Errors

Cognitive errors can influence clinical decision making and contribute to inequity when delivering healthcare services. Some of the most common cognitive errors include:

- **Premature closure.** This error happens when a clinician jumps to conclusions about a diagnosis without collecting enough data and exploring other possible diagnoses.
- **Confirmation bias.** When clinicians make up their mind about a diagnosis, and they only consider information that affirms that opinion.
- **Aggregate bias.** This cognitive error describes when clinicians believe aggregate population data applies to an individual patient they're working with. This error can lead to problems like the wrong types of tests being ordered to diagnose a patient.
- **Affective errors.** Affective errors occur when a clinician's personal feelings get in the way of making sound medical decisions. This can happen when a clinician associates positive or negative feelings with a patient.
- **Ascertainment bias.** This occurs when a clinician's previous experiences with a patient shape their current perceptions, so they make decisions based on past expectations rather than the present circumstances.
- **Anchoring.** Anchoring is the practice of giving the entire weight of a diagnosis to initial impressions without considering new information that comes up during the diagnostic process.
- **Diagnostic momentum.** This happens when a patient has been given a specific diagnosis and it becomes more and more difficult to change this label even if new information becomes available.^{17,18,19,20,21}



Social Determinants of Health (SDOH) and Bias¹

The following social determinants of health can exacerbate systemic barriers and biases patients face when accessing and receiving care:

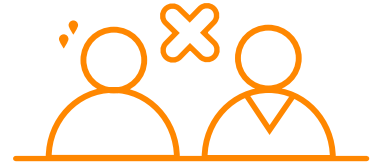


- **Economic stability.** This refers to issues related to employment, income, household expenses, medical bills, and debts.
- **Neighborhood and physical environment.** Safety concerns are part of this SDOH, as well as the walkability of an area, housing, and transportation.
- **Education.** The education factor includes literacy, language, and access to education from early childhood education to college and vocational training.
- **Community and social context.** Social integration and engagement, support systems, and discrimination.
- **Food.** Hunger, food insecurity, and lack of access to healthy food have a negative impact on healthcare outcomes
- **Healthcare system.** This SDOH includes healthcare coverage, quality of care, and provider availability and cultural and linguistic competency.

Structural Racism

Structural racism refers to the legal, governmental, cultural, and economic factors that create an environment of pervasive racial prejudice, which leads to inequities in various parts of minorities' lives—from housing to policing to employment. In healthcare, structural racism—which in part can be linked to segregation and the built-in disparities in care it created—has caused negative health outcomes for Black patients when it comes to heart disease, cancer, infant and maternal mortality, and mental health issues.^{22,23,24}

III. Consequences of Bias When Delivering Healthcare Services



When bias occurs in medical settings, there are serious consequences for all healthcare stakeholders. The following outlines some of those consequences.

Consequences for Patients

Structural racism and other biases (misogyny, transphobia, etc.) can negatively impact both access to care and health outcomes. With regard to healthcare access, these disparities can contribute to cost barriers that decrease the likelihood of underserved patients getting the care they need when they're sick, having relationships with regular providers for themselves and their children, and affording health insurance coverage. In the emergency department specifically, bias can result in cognitive errors and poor care that cause poor outcomes and shorter life expectancy.

Consequences for Emergency Departments¹

Providers and institutions that deliver substandard care due to bias may experience:



Legal Liability: Increased risk because of communication barriers between the provider and patients can cause medical errors



Quality Scores: Reduced scores because patients facing bias are less likely to receive evidence-based care



Cost of care: Increased costs because patients from underserved communities may have longer lengths of stay and higher readmission rates



Accreditation & Standards: Reduced chances of standards being met because language barriers are not recognized or documented appropriately



Poor Outcomes: Increased chances of poor patient outcomes exacerbated by social determinants and provider bias

IV. Mitigating the Problem of Bias in the Delivery of Healthcare



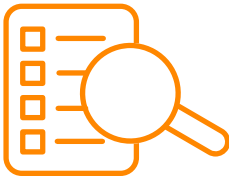
These are steps facilities can take to mitigate these issues:

Conduct a Data Analysis¹



Without relevant data, it's next to impossible to address biases in care delivery. Facilities should collect data on patient demographics and outcomes, paying particular attention to outcomes from underserved populations in order to fully understand where inequities occur. Also, reviewing statistics about the outcomes of patients on a city, state, and federal level can provide further insights on shortfalls in care underserved patients receive.

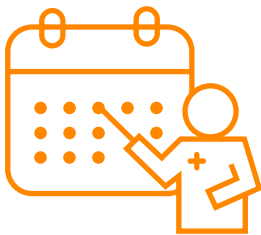
Perform Assessments on Social Determinants of Health (SDOH)²⁵



Healthcare professionals cannot address the barriers patients must navigate unless they understand what those obstacles are. To determine where staff education should be directed, facilities can conduct assessments that measure staff knowledge of the SDOH of underserved patients. This can begin a dialogue about these issues, so providers feel more comfortable addressing them in collaboration with patients when they come up.

Organizational Actions to Address Inequities and Biases¹

Organizational actions to mitigate disparity:



- hiring more staff members from diverse communities
- teaching employees how to recognize their bias and developing strategies to mitigate them
- opening and maintaining a dialogue with minority groups to understand their concerns
- implementing and maintaining a plan to address the concerns of these communities

It is important to have systems of accountability built into an organization—both on the individual and organizational level. On an employee level, facilities can hold workers accountable by tying specific health outcomes to their performance reviews so addressing individual, interpersonal, and institutional bias becomes part of their daily job duties. On an organizational level, healthcare facilities can make their inclusion goals public and provide regular updates on their progress, thus holding themselves accountable to the entire community they serve.

Use SDOH Screening Tools²⁵



In order to give patients the level of care they need, providers can implement an SDOH screening tool that measures different domains of social factors of health—such as insurance status, housing, transportation, and food insecurity.

However, it is important to be careful when using this strategy because it may have unintended consequences: By focusing on these factors, providers may put an emphasis on information that can lead to stigmatizing patients, rather than using this information to problem-solve creatively and collaboratively.

Although these issues can be challenging, effectively addressing bias and inequity can improve the health outcomes of underserved patients, as well as the reputation of providers in a community.

Create and Deliver Education Programs²⁵



In order to effectively address healthcare inequities, all members of the healthcare team should understand the challenges their patient populations face.

One way to increase this understanding is to provide comprehensive training on SDOH, which can help professionals recognize patients' social needs and the factors, like food insecurity, that can impact health equity.

Other types of training that can raise awareness about the factors impacting underserved patients, and role of individuals and systems, may cover:

- Conscious bias
- Unconscious bias
- Microaggressions
- Systemic discrimination

Standardize Patient Care with Technology



Standardizing care helps to ensure that all patients receive the services they need, regardless of their personal demographics. There are multiple ways to deliver high quality and standardized care with existing and emerging technology. One method with computerized checklists, requires providers to answer specific questions about the patients' symptoms. In return, the system makes recommendations for treatment based on the answers.

Newer technology including those built with artificial intelligence (AI) such as KATE™, can mitigate bias in clinical decision making upon the patient entering the emergency department at triage since it was designed to be blind of race and socio-economic factors. Standardizing care on the front end of the hospital can be useful to decrease the impact bias has on the patients' plan of care.



In addition to mitigating bias, AI technology, such as KATE improves triage accuracy for patients with varying levels of acuity regardless of race, by as much as 93%.

The benefits of standardizing patient care with technology include:

- Streamline the medical decision-making process by breaking a full decision down to its component parts
- Eliminate the need to rely on judgment calls using limited patient history as a deciding factor
- Separate the patient from potential habitual bias a provider may have
- Allow treatment to be centered solely on specific risk factors
- Reduce the amount of human judgment used when deciding whether the presence of a condition is likely

Studies have reinforced the importance of standardizing all patient care, as researchers have found that care based on clinical guidelines and evidence-based practices, as well as the use of artificial intelligence mitigates biases and improves health care outcomes.^{26,27,28}



Health inequity and bias in the delivery of emergency care can have detrimental effects on not only patients who are members of diverse communities, but also healthcare providers. Although addressing these issues can be challenging, effectively tackling bias and inequity can go a long way toward improving the outcomes of underserved patients, as well as the reputation of healthcare providers in a community.

LEARN HOW KATE MITIGATES BIAS

clinical.sales@mednition.com

1. Sullivan, D. Health Equity 101. Advisory Board. <https://www.advisory.com/en/topics/classic/2019/06/health-equity-101> 2. Social Determinants of Health. Centers for Disease Control and Prevention. <https://www.cdc.gov/socialdeterminants/about.html> 3. Hinson, J., Martinez, D., Schmitz, P., Toerper, M., Banerjee, S., Radu, D., Scheulen, J., Stewart de Ramirez, S. & Levin, S. (2018). Accuracy of emergency department triage using the Emergency Severity Index and independent predictors of under-triage and over-triage in Brazil: a retrospective cohort analysis. *International Journal of Emergency Medicine*, 11(3). doi:10.1186/s12245-017-0161-8 4. López, L., Wilper, A., Cervantes, M., Betancourt, J., & Green, A. (2010). Racial and Sex Differences in Emergency Department Triage Assessment and Test Ordering for Chest Pain, 1997–2006. *Academic Emergency Medicine*, 17(8), 801-808. doi:10.1111/j.1553-2712.2010.00823.x 5. Schrader, C., & Lewis, L. (2012). Racial Disparity in Emergency Department Triage. *Emergency Medicine*, 44(2), 511-518. doi:10.1016/j.jemermed.2012.05.010 6. Puumala, S., Burgess, K., Kharbanda, A., Zook, H., Castille, D., Pickner, W. & Payne, N. (2016). The Role of Bias by Emergency Department Providers in Care for American Indian Children. *Medical Care*, 54(6), 562-569. doi:10.1111/acem.12901 7. Zook, H., Kharbanda, A., Flood, A., Harmon, B., Puumala, S. & Payne, N. (2016). Racial Differences in Pediatric Emergency Department Triage Scores. *The Journal of Emergency Medicine*, 50(5), 720-727. doi:10.1016/j.jemermed.2015.02.056 8. Grossmann, F., Zumbrunn, T., Ciprian, S., Stephan, F., Woy, N., Bingisser, R. & Nickel, C. (2014). Undertriage in Older Emergency Department Patients – Tilting against Windmills? *PLOS One*, 9(8). doi:10.1371/journal.pone.0106203 9. Arslanian-Engoren, C. (2004). Do emergency nurses' triage decisions predict differences in admission or discharge diagnoses for acute coronary syndromes? *Journal of Cardiovascular Nursing*, 19(4), 280-286. doi:10.1097/00005082-200407000-00008 10. Zhang, L., Reynolds Losin, E., Ashar, Y., Koban, L. & Wager, T. (2021). Gender Biases in Estimation of Others' Pain. *The Journal of Pain*. 10.1016/j.jpain.2021.03.001 11. Sabin, J. (2020). How we fail black patients in pain. *Association of American Medical Colleges*. <https://www.aamc.org/news-insights/how-we-fail-black-patients-pain> 12. Kushel, M. *Implicit Bias in Pain Management: A Very Brief*. San Francisco Health Plan. http://www.sfhph.org/files/providers/Best_Practices/MargotKushelPresentation.pdf 13. Hanchate, A., Paasche-Orlow, M., Baker, W., Lin, M., Banerjee, S. & Feldman, J. (2019). Association of Race/Ethnicity With Emergency Department Destination of Emergency Medical Services Transport. *JAMA Network Open*. doi:10.1001/jamanetworkopen.2019.10816 14. Sullivan, O. (2020). Beyond the ER: The Road to LGBTQ+ Health Equity. *Gender Policy Report*. <https://genderpolicyreport.umn.edu/beyond-the-er-the-road-to-lgbtq-health-equity/> 15. Jalali, S., and Sauer, L. (2015). Improving Care for Lesbian, Gay, Bisexual, and Transgender Patients in the Emergency Department. *Annals of Emergency Medicine* 66(4). doi: 10.1016/j.annemergmed.2015.02.004 16. Johnson, T., Hickey, R., Switzer, G., Miller, E., Winger, D., Nguyen, M., Saladino, R., & Hausmann, L. (2016). The Impact of Cognitive Stressors in the Emergency Department on Physician Implicit Racial Bias. *Academic Emergency Medicine*, 23(3), 297-305. doi:10.1111/acem.12901 17. Smith, T. (2021). 4 widespread cognitive biases and how doctors can overcome them. *American Medical Association*. <https://www.ama-assn.org/delivering-care/ethics/4-widespread-cognitive-biases-and-how-doctors-can-overcome-them> 18. McGee, D. (2018). Cognitive Errors in Clinical Decision Making. *The Merck Manuals*. <https://www.merckmanuals.com/professional/special-subjects/clinical-decision-making/cognitive-errors-in-clinical-decision-making> 19. Croskerry, P. 50 Cognitive and Affective Biases in Medicine. *Saint John Regional Hospital Emergency Medicine*. <http://sjrhem.ca/wp-content/uploads/2015/11/CriticalThinking-Listof50-biases.pdf> 20. Morgenstern, J. (2015). Cognitive errors in medicine: The common errors. *First10EM*. <https://first10em.com/cognitive-errors/> 21. Cognitive biases in health care. *Health Psychology*. The Joint Commission. https://www.jointcommission.org/-/media/department-of-medical-services/2017/01/11/quick_safety_issue_28_oct_2016pdf.pdf 22. Bailey, Z., Feldman, J. & Bassett, M. (2021). How Structural Racism Works — Racist Policies as a Root Cause of U.S. Racial Health Inequities. *The New England Journal of Medicine*. doi:10.1056/NEJMms2025396 23. Gee, G., & Ford, C. (2011). Structural Racism and Health Inequities Old Issues, New Directions. *Du Bois Review*, 8(1), 115-132. doi:10.1017%2FS1742058X11000130 24. Al-Agba, N. (2020). How Structural Racism Affects Healthcare — Only by first acknowledging the effects can we work toward transformative changes. *MedPage Today*. <https://www.medpagetoday.com/blogs/kevinmd/84362> 25. Whitmarsh, K. (2021). How Rush Incorporated SDOH into Patient Care. *Advisory Board*. <https://www.advisory.com/topics/nursing-professional-development/2021/02/rush-rns-discuss-sdoh-with-patients> 26. *Advisory Board*. (2017). Want to eliminate gender bias? There's a standard for that. *Advisory.com*. <https://www.advisory.com/blog/2017/01/gender-bias> 27. Nordell, J. (2017). A Fix for Gender Bias in Health Care? Check. *The New York Times*. <https://www.nytimes.com/2017/01/11/opinion/a-fix-for-gender-bias-in-health-care-check.html> 28. Ivanov, O., Wolf, L., Brecher, D., Dunne, R., Klauer, K. & Reilly, C. (2020). Improving ED Emergency Severity Index Acuity Assignment Using Machine Learning and Clinical Natural Language Processing. *Journal of Emergency Nursing*, 47(2), 265-278. doi:10.1016/j.jen.2020.11.001