

Hospitals and health systems are looking at ways to use data to leverage new capabilities to improve health outcomes for patients and their communities

Using Data to Reduce Health Disparities and Improve Health Equity



Executive Summary

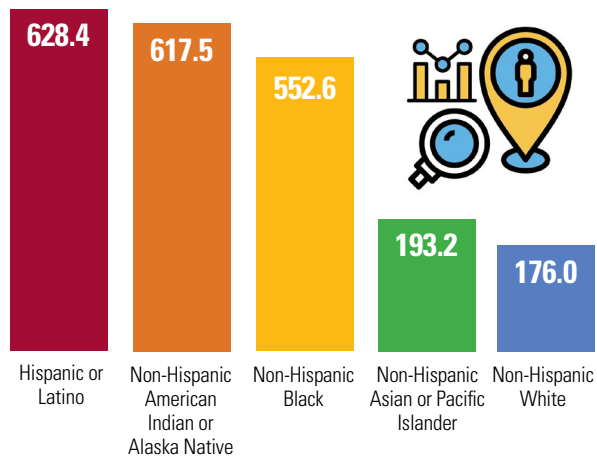
Using Data to Reduce Health Disparities & Improve Health Equity

The COVID-19 outbreak in the U.S. has shown the country what all hospital and health systems leaders have known for years: Serious gaps exist in access, cost and quality for patients based on their race, ethnicity, gender and gender identity, age, sexual orientation or other demographic and socio-economic factors. Hospitals and health systems have the opportunity to use data to identify disparities in outcomes which are the result of inequities and societal factors that influence health. Explore [AHA's Societal Factors that Influence Health: A Framework for Hospitals](#) for insights into how hospitals can address social needs, social determinants and the systemic causes of health inequities.

COVID-19 hospitalization by race/ethnicity

This graphic shows the rate of laboratory-confirmed COVID-19-associated hospitalizations in the US from March 1 to December 28, 2020. A systemic review examining the role of race in hospitalization and death due to COVID-19 in the Annals of Internal Medicine (Dec. 2020) suggests that differences in health care access and exposure risk may underlie COVID-19-related disparities more than susceptibility (that is, comorbid conditions).

Rate of hospitalizations per 100,000 population



Source: CDC and Statista, 2021

Hospitals and health systems can apply the data they have to drive their strategy to advance health equity. They can also use insights culled from data to identify health care disparities, find the root causes and craft targeted interventions to reduce them, and improve health.

This Market Insights report from the American Hospital Association's Center for Health Innovation offers hospital and health system leaders practical guidance and examples on how to use data to take three steps: identify, investigate and intervene. This report is a companion piece to a more in-depth [Market Insights report](#) from the Center on how hospitals and health systems can leverage data for health innovation.

This report is based on information and insights from interviews with board members of the AHA Institute for Diversity and Health Equity (IFDHE) and other hospital and health system leaders who are identified on Page 7. The report also reflects reviews of published health care reports, surveys, articles and research on health care disparities, data and innovation. A complete list of these source materials appears on Page 8.

The AHA Center for Health Innovation thanks everyone who contributed to this report, the full report and other data-related resources available to hospital and health system leaders through the center. ●

AHA CENTER FOR HEALTH

INNOVATION

How hospitals and health systems can transform themselves into data-driven organizations to create more value for their patients and communities

Leveraging Data for Health Innovation

INNOVATION MARKET INSIGHTS

Data-related resources available from the AHA Center for Health Innovation and IFDHE

- [Leveraging Data for Health Care Innovation](#)
- [Data-driven Health Care Organization Maturity Framework](#)
- [Discussion Guide: Developing Data-driven Health Care Organizations](#)
- [Health Equity Snapshot: A Toolkit for Action](#)
- [Addressing Health Care Disparities through Race, Ethnicity and Language \(REaL\) Data](#)
- [Framework for Stratifying Race, Ethnicity & Language Data](#)



Identify Health Disparities in Patients and Communities

Identify health disparities by branching out from the usual data sets

The root causes of health disparities typically occur outside the four walls of a hospital or health system. Yet, some hospitals and health systems limit their quest to understanding health disparities to clinical data that exists within their own electronic health record (EHR) systems. That may be a good place to start, but it really is just the start.

To build a comprehensive profile of a given patient population and each individual patient and community health needs, hospitals and health systems must add layers of additional data sets to be able to connect all the dots. The additional data sets should include, but are not limited to:

- Race, ethnicity and language (REaL) data.
- Clinical data from all affiliated providers, including social needs data.
- Clinical data from unaffiliated providers, including social needs data.
- ICD-10-CM Z codes on factors influencing health status and contact with health services.
- Community health needs assessment.
- Medical claims data from payers.
- Drug claims data from payers.
- Medication adherence data from pharmacies.
- Self-reported experience and outcomes data from patients.
- Screening data for patients' social needs and community-based services.
- Patient-generated health data from remote monitoring, smartphones, mobile applications and wearable devices.
- Demographic and socio-economic data from federal, state and local governments, such as CDC's social vulnerability index.
- Social needs data from public health agencies, social welfare groups and community health organizations.

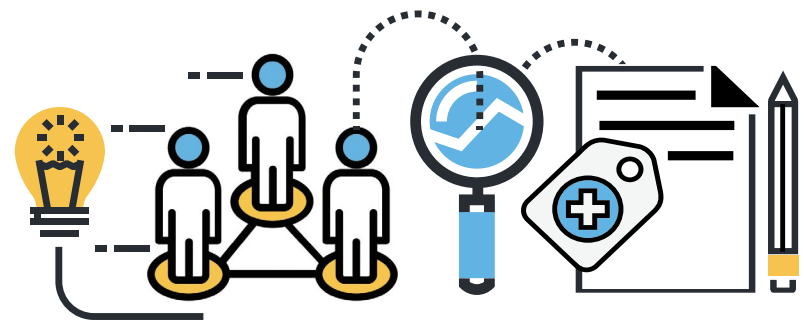
To successfully collaborate on health equity strategies, hospitals and health systems must build relationships with other stakeholders who share the same vision of eliminating health disparities for the benefit of the entire community. They may serve as a convener of cross-sector partnerships to share sources of data and analysis to improve outcomes by developing novel ways of defining the challenges and working together effectively.

Consult additional AHA resources [A Playbook for Fostering Hospital-Community Partnerships to Build a Culture of Health](#) and [Community Health Assessment Toolkit](#).

After those bridges are built, hospitals and health systems need access to the right technologies and technology capabilities. The technology must be interoperable so it can collect clinical, financial and social data from disparate technologies used by other providers, payers, pharmacies, patients, public health agencies, governments, and social and community groups and organizations.

The technologies must be able to clean the data, integrate the data into a single database and make the data easily available and usable by researchers in accordance with the data governance policies of the hospital or health system.

While health systems may develop their own technological capabilities, many organizations participate in one or more electronic health information exchanges (HIEs). The value of electronically exchanging through an HIE is the standardization of data. Once standardized, the data transferred can seamlessly integrate into the EHR, further improving patient care. ●



Investigate Patterns in Health Disparities

Investigate patterns in health disparities with queries

Discussions about health disparities and possible remedies need data to be credible. The data objectively display patterns in health disparities and point leaders toward a solution. Absent the data, an individual clinician, department or setting could incorrectly dismiss a single incident as an anomaly not worthy of attention or worse believe that they are doing everything right on behalf of their patients and miss uncovering a larger or systemic issue. A lot of providers are surprised by what they learn when they look at the data. AHA's IFDHE has created a dashboard to provide health care leaders with a list of potential measures to use to identify potential disparities. [Health Equity, Diversity & Inclusion Measures for Hospitals and Health System Dashboards](#)

Hospitals and health systems can identify disparities by querying data sets to see how processes or outcomes differ by demographics or geography. One of the most basic inquiries a health care organization can make is to stratify a process or outcome by race, ethnicity and language, sexual orientation and gender identity, religion, age, gender, disability, employment, education, socio-economic status, insurance status, geographic location, ZIP code or another demographic or socio-economic variable. Mapping data shows inequities at the community level by overlaying health data onto maps and seeing which neighborhoods have a higher prevalence of certain diseases to figure out what populations may be at additional risk.

Example of using data to identify inequities

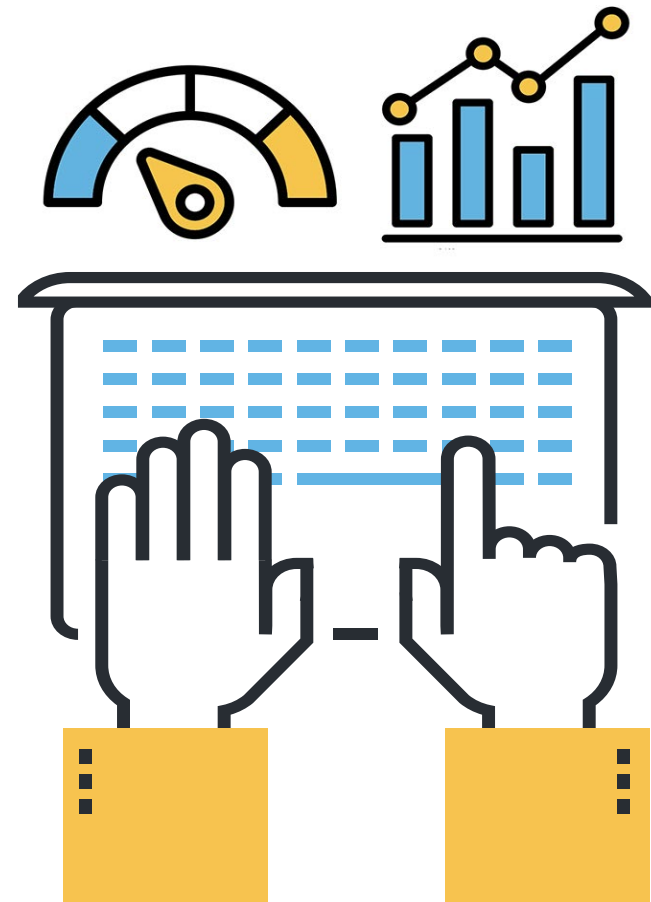
PROCESS query examples (treatment, procedure, encounter)

- Percentage breakdown by race of female patients who were screened for breast cancer.
- Percentage of male patients who had a colonoscopy, by ethnicity.
- Percentage of patients with chronic health conditions who filled prescriptions, by ZIP code.

OUTCOME query examples

- Breakdown of readmitted patients by insurance status.
- Ethnicity breakdown of patients who suffered a fall during an inpatient stay.
- Breakdown of Hispanic patients hospitalized for COVID-19, by English-speaking and non-English-speaking.

Ideally, hospitals and health systems will create internal benchmarks to identify variances in their own practices that contribute to disparate health outcomes, and supplement their own stratifications of patient data with regional or national benchmark data from their peers. Benchmarking will tell a story that will send researchers looking for an answer and the appropriate intervention. ●



Intervene Using Data to Address Health Disparities

Intervene with education and by setting goals and measuring progress

After a hospital or health system identifies and investigates a pattern of disparate outcomes in its patient population, the next step is tailoring interventions to drive improvements in patient care and outcomes. And having data about your community enables you to customize your approach.

INSIGHT

It's not about shaming anyone. It's about **letting the data tell a story** and letting the care team's natural curiosity take over. It becomes a learning experience that changes behaviors forever.

For example, stratifying emergency department (ED) visits by ZIP code could reveal that some communities in a hospital's service area may lack primary care providers. Improving access to community-based, health-related services may be a viable intervention to reduce a disparity.

More challenging to deal with is unconscious, or implicit, bias by health care staff — everyone from the front desk staff to the care team — and its impact on quality of care and health outcomes. Cultural competency and unconscious bias training enhances the ability of providers and organizations to effectively deliver health care

services that meet the social, cultural, and linguistic needs of patients. This, perhaps, is where data can help the most to understand health disparities and improve health equity as part of education, discussion and awareness of implicit bias and an organization wide commitment that everyone will work to reduce/eliminate disparities.

Rather than pointing the finger at individuals, a more effective method is using the data in a series of educational steps (See chart below).

Clinicians, by nature, respect and follow the scientific process. The successful path to changing their practice can be facilitated by telling a story with data. Depending on their culture and past practices, organizations may start with blinded data to get clinicians familiar with the methodology, and then move to unblinded data. Organizations find that unblinding the data makes all the difference. It's not about shaming, but rather about leaning into the competitive nature of clinicians. No one wants to be at the bottom of the list. They are also able to pair low-performers with higher performers to encourage learning and drive overall improvements in patient outcomes. ●

Using data to gain clinician buy-in and change behavior



STEP 1 | The goal is raising awareness of the issue in a credible, scientific and nonthreatening manner. Present the blind data to the department's clinicians as a group and make sure the presentation details the sources of data and the methodology of the analysis.

STEP 2 | Provide clinicians' results to the department head to share unblinded data to pair low-performers with high-performers to mentor best practices, or for specific individual interventions in one-on-one educational sessions.

STEP 3 | Collaborate with clinicians to identify the causes of variation. The causes could be systemic, like difficulties in accessing services; or internal, like clinician-patient communication.

STEP 4 | Co-create action plans with clinical teams to reduce the disparities with achievable goals, a methodology to measure progress toward goals and timetables to reach goals.

STEP 5 | Measure and report progress to the clinicians and department head.



Align Priorities with Identified Community Needs

Odds are, any hospital or health system can query its database on any patient care process or outcome and find a statistically significant difference between patients based on their race, ethnicity, gender and gender-identity, age, sexual orientation or other demographic and socio-economic factor. But hospitals and health systems don't have unlimited resources to simultaneously

identify, investigate and remedy each health disparity that they find as they deliver care to their communities. The challenge, then, is where to start.

A good place to start is with the hospital's Community Health Needs Assessment to learn about the community's most pressing



CASE STUDY | PARKLAND HEALTH & HOSPITAL SYSTEM, DALLAS, TEXAS

Using SDOH Data to Reduce Incidence of Breast Cancer

Parkland Hospital & Health System uses social determinants of health data to guide its prevention and clinical efforts to reduce incidence of breast cancer. For example, data from its EHR, a cancer registry and its community health needs assessments led the system to revamp its outreach campaigns to target neighborhoods where patients with the most need live ([see full report](#)).

IMPACT: Parkland provides information to case managers, nurses and clinicians on which patients may need food pantry vouchers, housing referrals or transportation assistance to supplement clinical and pharmacological interventions. Geographically pinpointing where patients with the most need live led Parkland to revamp its community outreach campaigns.

For example, it sends its mobile mammography units to neighborhoods and community based organizations in six zip codes where the impact is likely to have the greatest impact. The current phase of the project is focused on increasing community demand through education, patient reminders, and media, while increasing community access by deploying a mobile unit to expand the number of alternative screening sites in the target ZIP codes.

The second intervention focuses on strengthening the breast cancer continuum of care to ensure patients remain in care until clear or treatment is completed. Parkland has embedded the project into their Community Health Needs Assessment Implementation Plan. ●



health needs and understand the health behaviors, risk factors and social determinants that impact their community's health. Digging deeper with process and outcome queries by demographics or geography can show differences for subgroups in health outcomes and health factors to inform community efforts and target resources where they are most needed.

Additionally, the experts interviewed for this brief suggest two places: the ED and service lines that operate at a loss.

Why? The ED is a reflection of what is happening to the community's most vulnerable patients. For example, high numbers of Black and Latino Americans and economically disadvantaged patients older than age 50 with pneumonia could be a symptom of housing or utility issues or limited primary care access for pneumonia vaccines. Culturally appropriate interventions have been shown to raise pneumonia vaccination rates from 48 percent to 81 percent in patients aged 65 and older at inner-city health centers.

If you look to those service lines where acuity is high and costs are not being covered by revenue, you may discover patient populations not receiving recommended screening and preventive care such as Black males with colon cancer who suffer from late-stage colon cancer.

Conclusion

"What gets measured gets improved," an adage by management thinker Peter Drucker, certainly applies to health disparities and health equity. Measurement starts with data. Hospitals and health systems can leverage insights from their data to ensure that all patients in their communities have equitable access to the highest quality health care.

Data collection, stratification and use are essential to developing initiatives to eliminate disparities in health outcomes. By collecting, stratifying and using REaL patient data along with other data points such as sexual orientation, gender identity, geographic location, veteran status and disability status, hospitals and health systems can better identify and address disparities in patient populations.

COVID-19 raised public awareness of racial and ethnic disparities in health and health care to a new and uncomfortable level. Leading hospitals and health systems are using data to rectify long-standing problems in their communities. ●

Expert Panel

The AHA Center for Health Innovation thanks the following people, organizations and sources for the time and insights that made this Market Insights report possible:



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Reports, Surveys, Articles and Resources

AHA Resources

- A Playbook for Fostering Hospital-Community Partnerships to Build a Culture of Health. <https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/A-playbook-for-fostering-hospitalcommunity-partnerships.pdf>
- Approaches to Population Health in 2018: A National Survey of Hospitals. <https://www.aha.org/system/files/media/file/2019/11/AHA-pop-health-survey-111419.pdf>
- Community Health Assessment Toolkit. <https://www.healthycommunities.org/resources/community-health-assessment-toolkit>
- Connecting the Dots: Value and Health Equity. <https://www.aha.org/system/files/2018-11/value-initiative-issue-brief-3-equity.pdf>
- Creating Effective Hospital-Community Partnerships to Build a Culture of Health. <https://www.aha.org/system/files/hpoe/Reports-HPOE/2016/creating-effective-hospital-community-partnerships.pdf>
- Equity of Care: A Toolkit for Eliminating Health Care Disparities. <https://www.aha.org/ahahret-guides/2015-01-29-equity-care-toolkit-eliminating-health-care-disparities>
- ICD-10-CM Coding for Social Determinants of Health. <https://www.aha.org/system/files/2018-04/value-initiative-icd-10-code-social-determinants-of-health.pdf>
- Screening for Social Needs: Guiding Care Teams to Engage Patients. <https://www.aha.org/toolkitsmethodology/2019-06-05-screening-social-needs-guiding-care-teams-engage-patients>
- Social Determinants of Health Curriculum for Clinicians. <https://www.aha.org/physicians/SDOH-Main>
- Social Determinants of Health Guides. <https://www.aha.org/social-determinants-health>
- Societal Factors that Influence Health: A Framework for Hospitals. <https://www.aha.org/societal-factors>

Additional Resources

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- “Implicit Bias: Recognizing the Unconscious Barriers to Quality Care and Diversity in Medicine.” Cardiology Magazine, Jan. 24, 2020. <https://www.acc.org/latest-in-cardiology/articles/2020/01/01/24/42/cover-story-implicit-bias-recognizing-the-unconscious-barriers-to-quality-care-and-diversity-in-medicine>
- “Johns Hopkins, IBM Offer Health Equity Metric to Reduce Disparities.” Health IT Analytics, Aug. 14, 2020. <https://healthitanalytics.com/news/johns-hopkins-ibm-offer-health-equity-metric-to-reduce-disparities>
- “ONC Projects Aim to Standardize SDOH Data for Precision Medicine.” Health IT Analytics, April 15, 2020. <https://healthitanalytics.com/news/onc-projects-aim-to-standardize-sdoh-data-for-precision-medicine>
- “Precision Population Health: Joining Forces to Reduce Disparities.” Precision Medicine at UCSF, August 2020. <https://precisionmedicine.ucsf.edu/precision-population-health-joining-forces-reduce-disparities>
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- “Social determinants of health data can be difficult to collect and share, but it’s imperative to success.” Healthcare Finance, July 1, 2019. <http://www.healthcarefinancenews.com/news/social-determinants-health-data-can-be-difficult-collect-and-share-its-imperative-success>
- Z Codes Utilization among Medicare Fee-for-Service (FFS) Beneficiaries in 2017. Centers for Medicare & Medicaid Services, January 2020. <https://www.cms.gov/files/document/cms-omh-january2020-zcode-data-highlightpdf.pdf>



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