Celebrating 10 Years of Identifying and Eliminating Disparities in Health Care Quality

Massachusetts General Hospital

ANNUAL REPORT ON EQUITY IN HEALTH CARE QUALITY **2018–2019**

MASSACHUSETTS GENERAL HOSPITAL

MASSACHUSETTS GENERAL PHYSICIANS ORGANIZATION

MASSACHUSETTS GENERAL HOSPITAL DISPARITIES SOLUTIONS CENTER

Joseph R. Betancourt, MD, MPH · Aswita Tan-McGrory, MBA, MSPH · Karey S. Kenst, MPH

MGH/MGPO EDWARD P. LAWRENCE CENTER FOR QUALITY AND SAFETY

Elizabeth Mort, MD, MPH · Syrene Reilly, MBA · Andrea T. Tull, PHD · Stephanie Oddleifson, MPH

Acknowledgements

The MGH/MGPO wishes to acknowledge and thank the following individuals for their contributions to the development of this report:

Judy Clark, RN, Nurse Manager for Stroke Quality, Department of Neurology

Allison Bryant Mantha, MD, MPH, Department of Obstetrics and Gynecology

Jeffrey Ecker, MD, Department of Obstetrics and Gynecology

Wei He, MS, Senior Systems Analyst, General Medicine

Chris Kirwan, Clinical Director, MGH Interpreter Services

Kirk Larsen, Project Specialist, Patient Experience, Center for Quality & Safety

Oluwagbotemi Olafunmiloye, Research Assistant, Disparities Solutions Center

Joan Quinlan, MPA, Vice President for Community Health

ALL PHOTOS BY SARAH BASTILLE, EXCEPT PAGE 5: JEFFREY ANDREE; BACK COVER: DOUG HAIGHT.

Table of Contents

Our goal is to have great outcomes for all patients, regardless of the sociodemographic characteristics. Different patients have different needs and our job is to identify and meet those needs, so that everyone has an equal shot at the best outcome. Stratifying our measures of quality and safety has been an essential first step and has allowed us to work with colleagues and caregivers to design new approaches.

Elizabeth A. Mort, MD, MPH

SECTION 1

Executive Summary

This tenth edition of the MGH Annual Report on Equity in Health Care Quality (AREHQ) monitors quality of care by race, ethnicity, and language to identify disparities among racial and ethnic minorities and patients with limited English proficiency. It was developed in response to the Institute of Medicine (IOM)[i] Report, *Crossing the Quality Chasm*, which identifies equity—the principle that quality of care should not vary by race, ethnicity, or gender—as one of six pillars of quality.[1]

Massachusetts General Hospital (Mass General) embraces the recommendations of the Chasm report, as well as another important IOM report entitled *Unequal Treatment*, which highlighted that minorities—even those with health insurance—often receive lower quality care than their white counterparts. *Unequal Treatment* defines disparities as "racial or ethnic differences in the quality of healthcare that are not due to access-related factors or clinical needs, preferences, and appropriateness of intervention."[2]

Evidence of disparities at the national level motivates efforts to monitor equity of care at Mass General. The Agency for Healthcare Research and Quality's annual *National Healthcare Quality and Disparities Report* assesses the performance of the U.S. healthcare system and identifies disparities in access to and the quality of healthcare. The report examines several priority areas, including person-centered care, patient safety, healthy living, effective treatment, care coordination, and care affordability.[3] The 2017 report revealed the following national trends:

- Quality of healthcare has improved overall, but the pace of improvement for measures related to care coordination, effective treatment, and care affordability has been slower compared to measures in other priority areas.
- Despite evidence of overall improvement in disparities from 2000–2015, differences persist across all priority areas for all minority racial/ethnic groups.
- Most measures related to healthcare access have not improved over time, although un-insurance rates have decreased from 2008 to 2015.[3]

These disturbing national trends, along with broader social and economic forces contributing to persistent racism and poverty, are leading many in the healthcare industry to think more broadly about improving health equity. In addition to eliminating disparities in the quality of care, organizations are beginning to tackle issues of provider and workforce diversity,[4] improving the patient experience of care, and integrating healthcare and social services to better serve communities in need.

This report provides an analysis of measures of quality (process of care, outcomes, and patient experience) stratified by patient race, ethnicity, and language. It also identifies areas for quality improvement and reports on the progress of initiatives that are addressing current disparities at Mass

i Now the National Academy of Medicine.

General. White and English-speaking populations are used as the reference groups for statistical analyses throughout the report.[ii] In some cases, it can be challenging to tease out the root causes of differences identified in the data. For example, some differences may be due to variation in clinical appropriateness or cultural preference, while others may reflect a true disparity in the quality of care provided due to structural factors, the cultural competency of providers, communication barriers, or a host of other factors.

Not only does this report allow us to measure the equity of the care we provide, but given that it was the first of its kind, it establishes Mass General as a national leader in monitoring and addressing disparities, as well as promoting high quality healthcare for all patients, regardless of race, ethnicity, culture, socioeconomic status, and language proficiency. Several hospitals around the country have followed Mass General's efforts in this arena and have gained expertise through Mass General's Disparities Leadership Program to develop similar reports for their organizations (mghdisparitiessolutions.org/the-dlp).

What's New?

Measures of quality and safety are constantly evolving, and this year's report includes several new areas of exploration. It includes a broader view of our patient demographics, analyzing payer mix, age, and gender in addition to race and language, and a new category of National Hospital Quality Measures (NHQMs): Emergency Department Throughput. Many of the NHQM measures from prior reports have been retired by oversight organizations as hospitals nationwide have reached uniform high quality. Therefore, we believe public reporting of clinical process measures remains an important avenue for eliminating disparities in care.

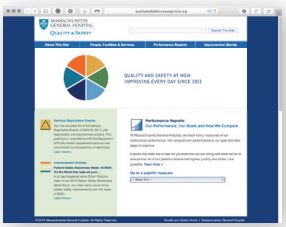
Last year, we conducted a multivariate analysis of readmissions which suggested that neither race nor language were significant, independent predictors of 30-day readmission at Mass General. This year, we repeated our bivariate analysis of hospital-wide readmission rates by race and language and explored the seven condition- and procedure-specific readmission measures publicly reported by the Centers for Medicare & Medicaid Services (CMS).

This year, we worked with colleagues in the Departments of Obstetrics/Gynecology (OB/GYN) and Neurology to report new quality measures specific to these service-lines. This report includes a new analysis of OB/GYN readmission rates, as well as a new measure of door-to-needle time for ischemic stroke patients.

The collection of patient demographic data, including race, ethnicity, and language, continues to evolve along with our electronic health record infrastructure. Mass General transitioned to a new electronic health record in 2016, which changed the way we collect and store patient demographic data. This resulted in more patients identifying as Multiracial or "Other" race than we have seen in past reports.

Mass General is committed to sharing this important work and publicizing our data. The report can be found on both the Disparities Solutions Center and Mass General Quality and Safety websites:

mghdisparitiessolutions.org/the-annual-report-on-equity-in-healthcare-quality



qualityandsafety.massgeneral.org/measures/equitable.aspx?id=4

ii Significance testing is based on chi-square tests for discrete data and t-tests for continuous data, 95% confidence intervals.

Background: Demographic Profile of Mass General Patients

- In calendar year 2017, as in previous years, the racial, ethnic, and linguistic composition of Mass General's patient population roughly mirrored the catchment area of eastern Massachusetts, although its patients were slightly more likely to speak English as their primary language.
- The non-white population in eastern Massachusetts is steadily climbing, while the diversity of Mass General's inpatient and outpatient populations has grown at a slower pace.
- A greater proportion of African American and Hispanic patients are seen in the Emergency Department, compared to inpatient services. There is also variation in the distribution among racial and ethnic minority patients within inpatient services.
- Pediatrics, Burns, Psychiatry, and OB/GYN Departments see a larger proportion of minority patients than other inpatient services due to their larger Hispanic and/or Black populations.
- Mass General's health centers see a relatively larger proportion of minority patients, compared to outpatient specialty care practices. Hispanic representation is higher in health centers than in any other area of the hospital system (25% in health centers vs. 4% at Mass General main campus and satellite practices).
- About half of white inpatients are insured by Medicare, compared to a third of Blacks, a quarter of Asians, and a fifth of Hispanics. Medicaid is the primary payer for roughly half of the Hispanic inpatient population, compared to a third of Blacks, and a tenth of whites.

Highlights of Findings

Inpatient Patient Experience: Adult HCAHPS

- Asians had significantly lower patient experience scores than non-Hispanic whites for five of ten HCAHPS measures.
- A qualitative review of survey comments by Asian patients revealed opportunities for improvement in communication and care coordination.
- Asians, Hispanics, and Multiracial patients had lower patient experience scores than non-Hispanic whites on the Care Transitions composite, which assesses patients' experience with care coordination and discharge from the hospital. Non-English-speaking patients also had lower scores on this composite, compared to English-speaking patients.
- In addition to closing gaps between groups, we recognize the opportunity to improve across all patient populations and have launched an interdisciplinary team to define an improvement plan in fiscal year 2019.

Outpatient Patient Experience: Adult and Pediatric CG-CAHPS

- Asian respondents had significantly lower patient experience scores on all seven ambulatory patient experience composite measures.
- All racial/ethnic minority groups had significantly lower patient experience scores on Care Coordination, Provider Communication, and Provider Rating, compared to whites.
- A qualitative review of survey comments by Asian patients suggested opportunities for improvement in our communication of test results, referrals to specialists, and possibly, use of interpreter services.
- Non-English-speaking adult patients had significantly higher patient experience scores for Saw Provider within 15 Minutes of Appointment and Willingness to Recommend their outpatient provider. However, scores on the Overall Provider Rating question continue to be lower for non-English-speaking patients, compared to patients with English as their primary language.

- Among pediatric patients, Asian respondents had significantly lower patient experience scores on all seven composite measures. Black, Asian, and patients of Other races all had significantly lower patient experience scores on Provider Communication. Non-English-speaking respondents had significantly higher patient experience scores on Willingness to Recommend, but lower scores on Provider Communication.
- We see an opportunity to improve patients' experience in ambulatory settings across all groups and have institution-wide initiatives directed at that goal, while focusing on closing the gaps between patient groups.

Readmissions

- We found no evidence of disparities in hospital-wide readmission rates between non-white and white patients or between patients with English as their primary language and those speaking other languages.
- We found no evidence of disparities by race/ethnicity or by language in the readmission rates for any of the seven conditions or procedures reported by CMS.
- Limited English proficiency (LEP) patients who received an interpreter had readmission rates a full percentage point lower than LEP patients who did not receive interpreter services (11.5% with interpreter vs. 12.6% without), although this finding was not statistically significant.

Obstetrics/Gynecology

- Consistent with national trends, we found disparities in NTSV Cesarean rates, with Black women having Cesarean deliveries at a rate higher than white women. The Obstetrics department is exploring whether clinical indications contribute to the difference in rates. Since 2016, the department has launched a campaign to increase awareness of inequities in outcomes and care among providers and has introduced trainings in unconscious bias, among other interventions.
- We found no evidence of disparities between English and non-English-speaking patients for Cesarean section rates.
- We found no evidence of disparities in readmission rates by race or language for Obstetrics, Gynecology, or Gynecologic Oncology patients.

Neurology

- We found no evidence of disparities by race or language in the measure assessing the length of time to receive tPA among qualifying stroke patients arriving at Mass General.

National Hospital Quality Measures (NHQM)

- Rates of evidence-based clinical care for inpatients were equitable across racial and ethnic groups for the measures we evaluated: Emergency Department Throughput, Endoscopy for Polyp Surveillance, and Influenza Vaccination.
- We found no evidence of disparities between English and non-English-speaking patients in any of the NHQM measures reported.

The Disparities Reporting Committee (L–R): Syrene Reilly, MBA; Joan Quinlan, MPA; Elizabeth Mort, MD, MPH; Andrea Tull, PhD; Joseph Betancourt, MD, MPH; Karey Kenst, MPH; Aswita Tan-McGrory, MBA, MSPH; and Stephanie Oddleifson, MPH.

Outpatient Quality Indicators: Primary Care Linkage and HEDIS Measures

- Mass General primary care patients may be linked to a specific primary care physician or practice. We believe this linkage provides the opportunity for more continuity and coordination, and is therefore an important marker of quality. Overall, only 5% of patients are not linked to a provider or practice, and there is no significant gap between racial and ethnic groups.
- No disparities were present among racial and ethnic minorities in the areas of breast cancer screening, diabetes care, or coronary artery disease. Previously identified disparities in breast cancer screening were not found this year.
- Racial disparities were found in the areas of cervical, colorectal, and prostate cancer screenings for Asian patients compared to white patients. We found evidence of disparities in colorectal cancer screenings for Black patients and prostate cancer screenings for Hispanic patients.
- Improvement strategies include working with our Population Health and Community Health Center teams to improve chronic disease management and cancer screenings for all patients, with a targeted focus on patients with language or cultural barriers to care.

Growing up in Puerto Rico, I experienced the loss of close relatives and personally witnessed the devastating effects of inadequate access to healthcare due to inadequate resources. As a radiologist at MGH, I still see many patients that don't receive timely care because they have difficulties navigating the system. It is our duty as clinicians at MGH to offer the best possible medical care to every single patient and ensure that everyone has fair access to the care we offer.

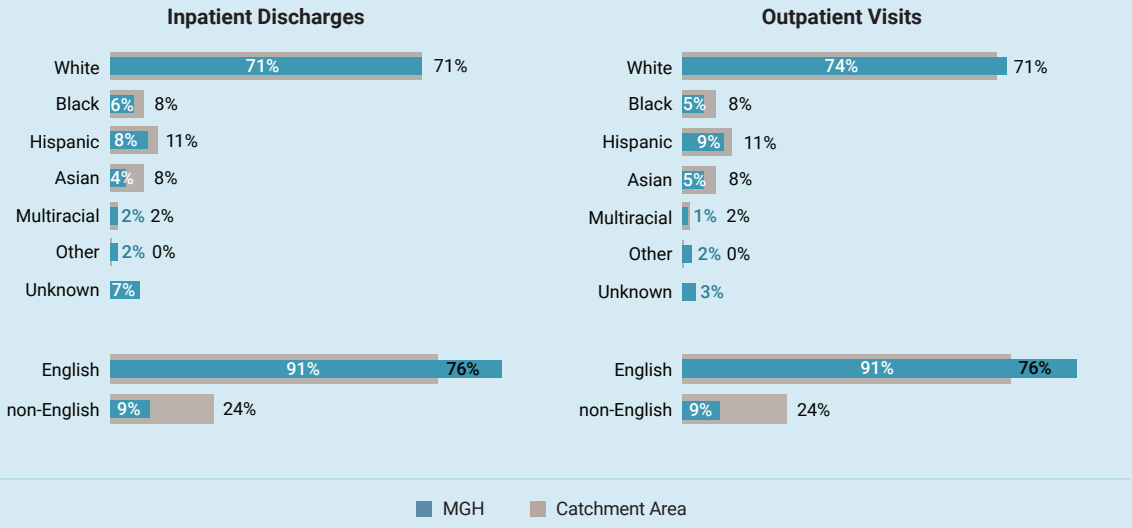
Efren J. Flores, MD

SECTION 2

Demographic Profile of Mass General Patients

This section provides a graphical overview of the racial, ethnic, and linguistic diversity of patients receiving care at Mass General during calendar year 2017, compared with the diversity of Mass General's catchment area (nine counties in Eastern Massachusetts[iii]). When compared to the demographic profiles of the surrounding communities, Mass General's inpatients are more likely to be English-speaking; and its outpatients are more likely to be white and English-speaking. The percentage of inpatients reporting "Unknown" race increased to 7% in 2017, which makes trending challenging. This increase may be due to the ongoing transition to the Epic electronic health record at most Partners HealthCare sites (the corporate entity that includes Mass General and its sister hospitals), which introduced a new workflow to collect and document patient race. Partners HealthCare recently made changes to this process to improve demographic information in the future.

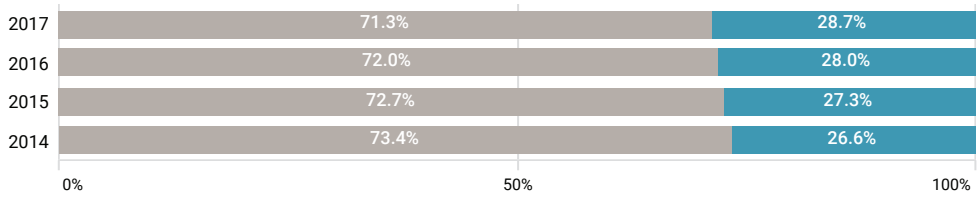
MGH Patients vs. Population Estimate of Catchment Area by Race and Language (2017)



iii The nine counties that comprise the eastern Massachusetts catchment area include: Barnstable, Bristol, Dukes, Essex, Middlesex, Nantucket, Norfolk, Plymouth, and Suffolk.

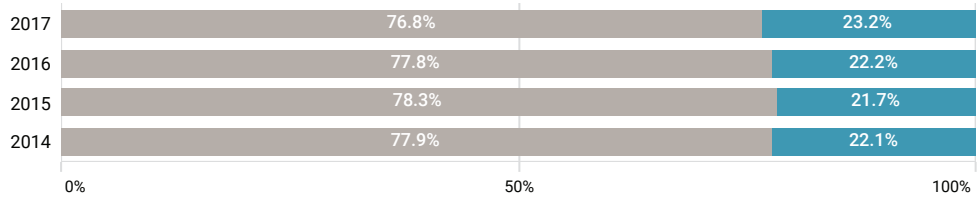
The non-white population in eastern Massachusetts is growing. The figure below shows a 2.1% increase in the non-white population between 2014 and 2017. The percentage of non-white inpatients at Mass General also increased during this time, albeit at a slower pace (1.1% increase).

Trends in MGH Catchment Area Population by White vs. Non-white*



** Source: American Community Survey Data, annual estimates based on 2010 U.S. Census.*

Trends in MGH Inpatient Discharges by White vs. Non-white



As the following table shows, the racial and ethnic profile of Mass General patients varies by setting. A higher percentage of minority patients are seen in the Emergency Department and Health Centers than are admitted to the inpatient setting. Non-white patients are under-represented in outpatient on-campus/satellite practices and specialty clinics.

Patient Distribution by Setting in 2017 (%)

	White	Black	Hispanic	Asian	Multiracial	Other	Unknown
Inpatient Care							
Inpatient Discharges	71.3	5.7	8.4	3.7	1.7	2.1	7.1
Emergency Department							
Emergency Department Visits	65.0	9.9	14.3	4.4	0.9	3.6	2.0
Outpatient Primary Care							
All Locations	67.1	6.3	11.3	6.5	1.6	3.1	4.1
Health Centers*	53.1	5.9	24.7	5.4	1.5	5.2	4.2
On-Campus and Satellite Practices	74.8	6.5	3.9	7.1	1.7	2.0	4.0
Outpatient Specialty Care							
Specialty Care Visits	78.5	4.2	6.7	4.7	1.3	1.9	2.8

** Health Centers include Back Bay, Charlestown, Chelsea, Everett, North End, and Revere.*

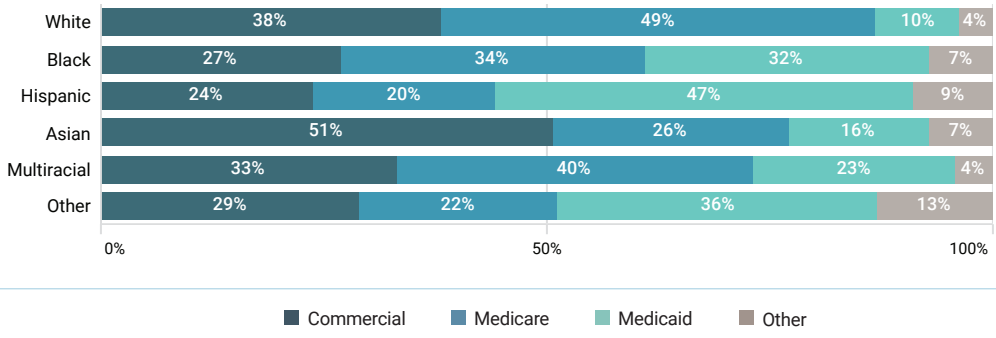
There is considerable variation in the distribution of racial and ethnic minority patients within inpatient services. Burns, OB/GYN, Pediatrics, and Psychiatry see a larger proportion of minority patients than other inpatient services due to their larger Hispanic and/or Black populations.

Patient Distribution among Mass General Inpatient Services in 2017 (%)

	White	Black	Hispanic	Asian	Multiracial	Other	Unknown
Burns	62.4	6.3	17.0	2.2	0.7	2.6	8.9
Medicine	77.5	6.6	6.9	3.4	1.7	1.8	2.1
Neurology	76.9	6.2	5.4	3.5	1.8	1.5	4.7
Neurosurgery	83.2	3.8	4.5	2.7	1.2	1.3	3.3
OB/GYN	60.4	7.5	16.7	9.0	1.3	2.7	2.4
Oral Maxillofacial	67.6	7.0	11.9	8.1	1.1	1.1	3.2
Orthopedics	84.3	3.3	4.6	1.9	1.9	1.8	2.3
Pediatrics	54.6	8.2	21.5	4.5	3.5	4.2	5.4
Psychiatry	71.3	10.6	9.5	2.6	1.7	2.6	1.7
Surgery	79.0	4.5	6.6	2.9	1.5	1.8	3.7
Urology	85.0	3.6	3.4	2.1	1.2	1.3	3.5

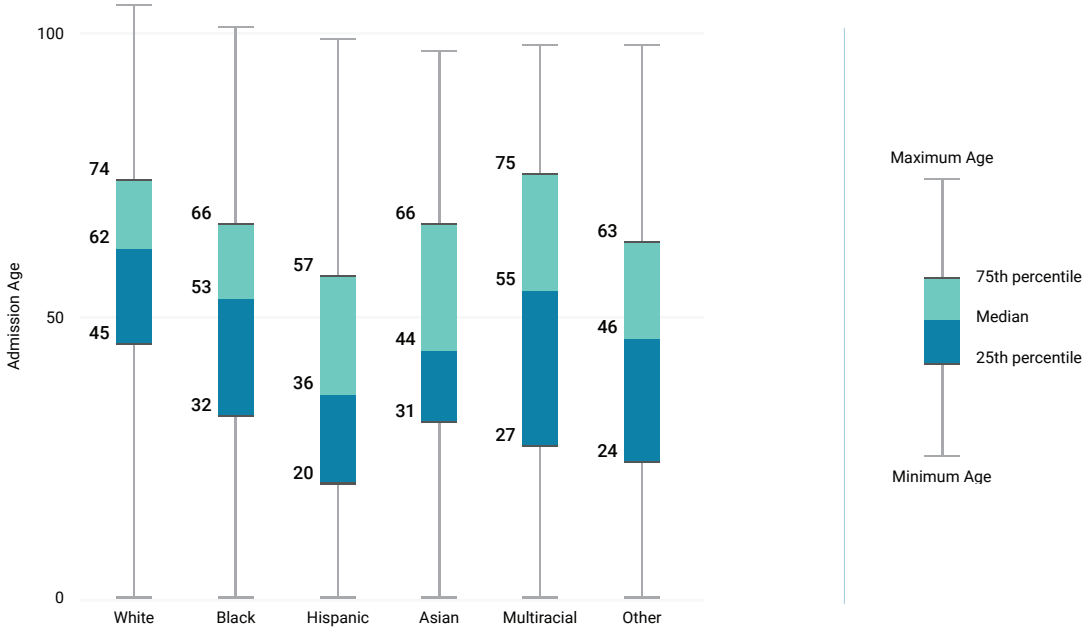
Insurance coverage is a principal driver of access to care. This year, we stratified the Mass General inpatient population by primary payer to quantify differences in insurance coverage by race/ethnicity. Overall, Medicare represents the largest payer among Mass General inpatients, followed by commercial insurance and Medicaid. However, when we stratify by race, we find that Medicare is the predominant payer for white patients, followed by commercial insurance (white inpatients tend to be older than patients from other racial/ethnic groups and are therefore more likely to have Medicare as their primary payer). Compared to whites, Black and Hispanic inpatients are more likely to have Medicaid as their primary payer, and less likely to have commercial insurance. Commercial insurance is the main payer among Asian inpatients. Commercial and Medicaid ACO plans often include disincentives to deter patients from accessing care at higher cost academic medical centers, unless those hospitals are in network. This may partially explain the variation in the racial/ethnic profile of patients seen at Mass General.

MGH Inpatient Discharges by Payer (2017)



Patients from diverse backgrounds are much younger than their white counterparts, which may explain the variation in the racial/ethnic composition of inpatients by service. The median age of white inpatients in 2017 was 62, compared to 53 for Blacks, 44 for Asians, and 36 for Hispanics. Therefore, it is not surprising to see greater racial/ethnic diversity in the Obstetrics service versus the Orthopedics service, which serves a large volume of older patients.

MGH Discharges, Age Distribution by Race (2017)



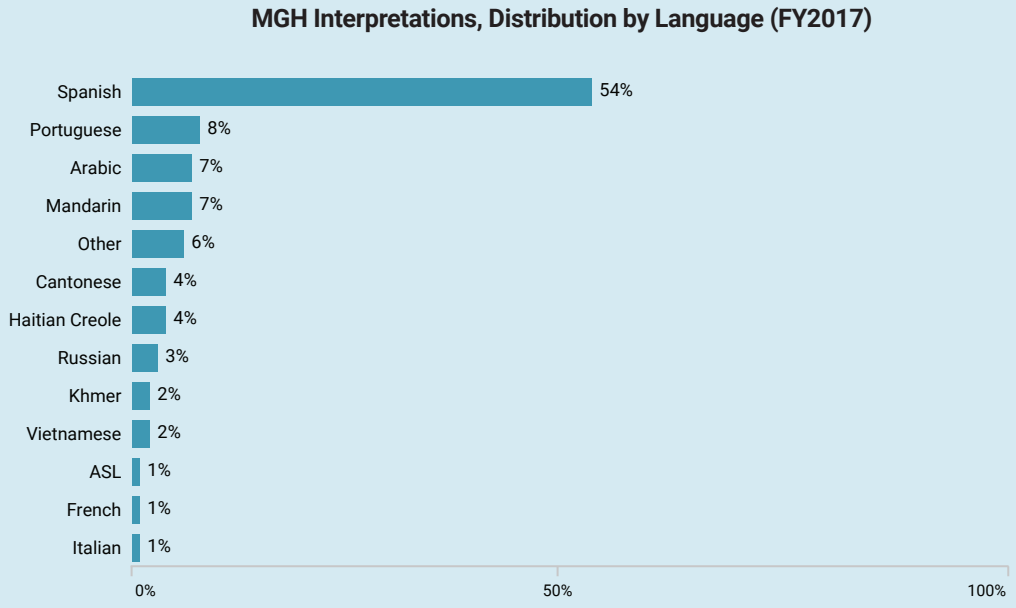

Devon R. Quasha

SECTION 3

Improvement Initiatives: Patients with Limited English Proficiency

Communicating with Our Patients

In fiscal year 2017 (October 2016–September 2017), Mass General Interpreter Services provided a total of 166,892 interpretations in 127 languages, including American Sign Language (ASL), across all sites of care. The following chart shows the distribution of interpretations by language.



Of the 166,892 interpretations, 31% (n=51,714) were face-to-face, 65% (n=108,298) were telephonic, and 4% (n=6,880) were video interpretations. Video interpretations saw a slight decrease from the previous year. Based on the technological initiatives put in place the prior year, the goal was to provide Mass General interpreters to as many of our patient/provider encounters as possible. We were able to increase face-to-face interpretations by 39% and telephonic interpretations by 18%. Technology allowed for greater access to Mass General interpreters over various modalities. This resulted in the Department's ability to provide Mass General interpreters via telephone more than 58% of the time. Not only have these efforts created efficiencies, reduced costs, and increased productivity, but patients and providers are offered timelier, more highly qualified, and experienced professional medical interpreters.

Improving Care for Patients with Limited English Proficiency

There is a strong relationship between the presence of patient-provider language barriers and the occurrence of adverse events. Research suggests that adverse events affect patients with limited English proficiency (LEP) to a greater degree and result in greater harm, compared to English-speaking patients.[5] Language barriers can also lead to longer lengths of stay and higher readmission rates.[6] To address this, the Joint Commission developed a set of standards for patient-centered communication that emphasize the importance of language, cultural competence, and patient-centered care, and hospitals seeking accreditation have been expected to comply with these recommendations since 2012.

To further develop strategies and systems to prevent medical errors and address linguistic disparities in care, the following initiatives are being undertaken at Mass General:

Training for Mass General Clinicians on Providing Safe Care for Patients with LEP

The Disparities Solutions Center, in collaboration with the MGH Institute of Health Professions and supported by Josiah Macy Jr. Foundation, developed the interprofessional curriculum, Providing Safe, Effective Care for Patients with Limited English Proficiency. The program consists of three e-learning modules that address the evidence of disparities and high rate of medical errors for patients with LEP, provide training on concrete skills for working with professional interpreters as integral members of the care team, and explore how systems of care can be improved for patients with LEP. Following a successful pilot with physicians and midwives in the Department of Obstetrics in 2014, the module on working with interpreters was rolled out as part of the Mass General Physicians Organization's mandatory training requirements in fiscal years 2016 and 2017 for physicians, researchers, trainees, physician assistants, nurse practitioners, and ambulatory nurses. A total of 6,914 Mass General employees had been trained as of October 2018. In 2017, all three modules were adapted for broader roll-out throughout the Partners HealthCare system. Modules will be assigned to providers, frontline staff, and non-patient facing employees based on the content that is most relevant to their roles.

Clinical Process Improvement Leadership Program (CPIP) on the Pediatric Floors

An interdisciplinary group comprised of nurses, residents, hospitalists, and support staff on the pediatric inpatient floors (Ellison 17 and 18) was formed through the CPIP program to identify and address the needs of patients with LEP and their families. Feedback from a staff survey identified certain barriers to care: the time required to locate and connect IPOPs/VPOPs (Interpreter Phones on a Pole and Video Phones on a Pole) and for an in-person interpreter to arrive on the floor. During 2017, dual handset Bluephones replaced patient bedside phones, giving providers direct access to interpreters by pushing two buttons. Education was provided to nurses, residents, and pediatric hospitalists regarding accessing interpreter services and indications for placement of phones. Through a series of PDSA cycles (Plan, Do, Study, Act), a trend toward an increased number of interpretations per day was identified. Based on these efforts, the program was expanded to include the Pediatric Intensive Care Unit (PICU GRB 6) and the Pediatric Emergency Room to identify and address similar disparities.

Study with the Department of Neurology

Interpreter Services, along with the Department of Neurology, published an article in the Journal of the American Heart Association entitled, "Professional Medical Interpreters Influence the Quality of Acute Ischemic Stroke Care for Patients Who Speak Languages Other than English." This study, which took place over a two-year period, identified significant disparities in LEP ischemic stroke patients who did not have interpreters at each stage of their care. The study found that there were poorer outcomes for those patients due to a lack of compliance with the plan of care, as compared to LEP patients who had professional medical interpreters for each stage of their care. The department then included specific training for Neurology residents when caring for patients with LEP.


Ob/
Gyn
Everyone Is
Valued

SECTION 4

Focus Area: Patient Experience

Analysis of HCAHPS and CG-CAHPS

Mass General has collected patient experience data with the inpatient HCAHPS survey since 2007 and with the ambulatory CG-CAHPS survey since 2008. Surveys are administered by telephone in English and Spanish. This report reflects three years of responses, from January 2015 through December 2017. Results are presented as a percentage: the number of patients who provided the most positive response to a given question (i.e. the top-box response), divided by the number of patients who answered the question.

Differences among certain racial and ethnic groups should be interpreted with caution. There may be cultural barriers or norms at play, as well as perceptions of bias and discrimination that impact how different groups perceive their care experiences and the healthcare system more broadly.[7,8]

Overall, survey results are consistent with research in the field that demonstrates variations in patient-reported experiences by characteristics such as race, ethnicity, and culture.[9] However, it is important not to generalize or stereotype entire populations based on these findings, given the heterogeneity within these groups. Additional exploration of the root causes of differences is necessary to determine appropriate improvement strategies. To that end, we conducted a qualitative review of survey comments and are exploring other strategies to help put these scores into context and identify improvement strategies.

Inpatient (HCAHPS)

Results for inpatient HCAHPS measures are consistent with prior findings[iv], with Asian respondents generally reporting lower satisfaction than whites, and Hispanic patients generally reporting higher satisfaction than whites. The results for 2015–2017 suggest differences by race, ethnicity, and language in the following areas:

- Asian patients had significantly lower patient experience scores than non-Hispanic whites for five of ten measures. Conversely, for one measure (Quiet at Night), patients who identified themselves as Asian had higher patient experience scores than non-Hispanic whites.
- Respondents identifying as Multiracial had significantly lower patient experience scores than non-Hispanic whites on five of ten measures.
- Hispanics had significantly higher patient experiences scores than non-Hispanic whites for eight of ten measures. The Care Transitions composite is the only measure where Hispanics reported significantly less positive experiences.
- For the Quiet at Night measure, almost all racial and ethnic groups had higher patient experience scores than the non-Hispanic white reference group.

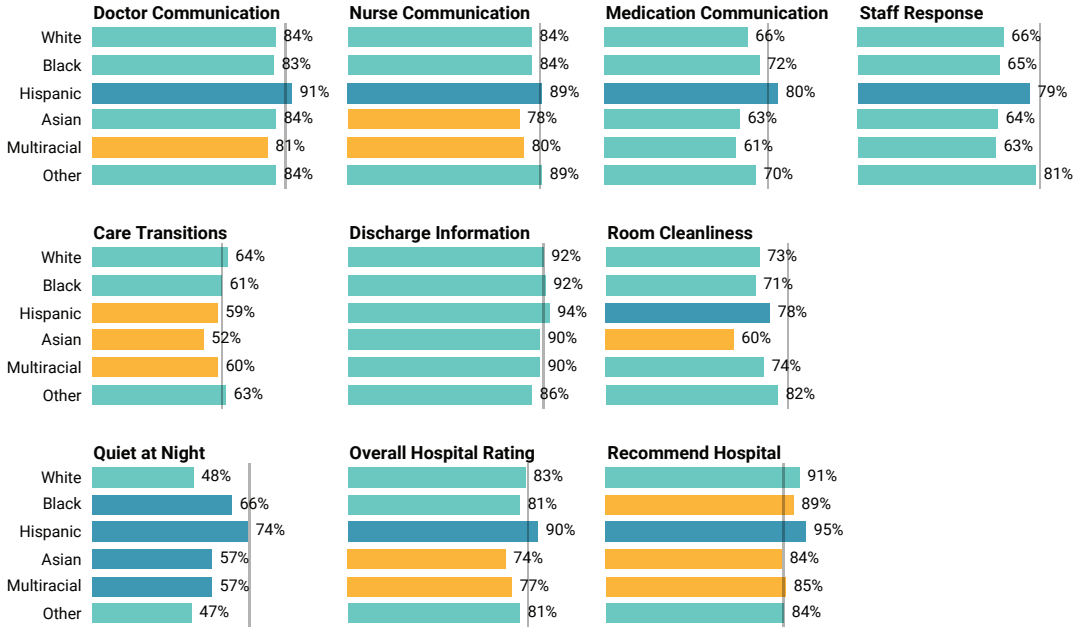
---

iv We are no longer reporting results for the HCAHPS Pain Management composite since these questions were retired from the HCAHPS survey.

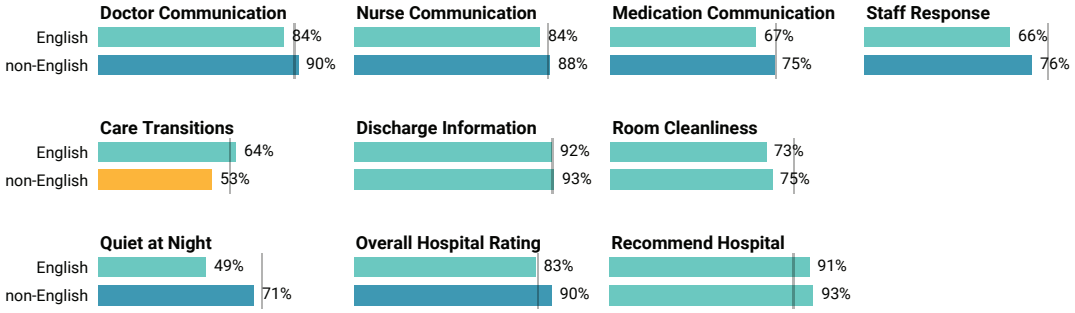
- The Care Transitions composite continues to be an area where we see disparities by race and ethnicity, although there was some modest improvement in scores in the most recent year (2017). These questions address patients' understanding of their self-care role after leaving the hospital, medication management, and recognition of their preferences in the care plan. Hispanic, Asian, and Multiracial patients reported significantly poorer experiences on Care Transitions than non-Hispanic whites. It is notable that the response options for the Care Transitions questions differ from the other survey domains (Strongly Disagree, Disagree, Agree, Strongly Agree for Care Transitions, versus Never, Sometimes, Usually, Always for all other questions). This structural difference may be driving some of the lower scores. Furthermore, there is evidence that the inclination to select the "Strongly Agree" vs. "Agree" response on any question may differ by race/ethnicity.[10–12] The national 90th percentile for the Care Transitions composite measure is relatively low at 61%,[v] suggesting that providers nationwide have some distance to go to achieve uniform high quality on these measures.
- Non-English-speaking respondents had significantly higher patient experience scores compared to the English-speaking cohort for six of the ten inpatient measures. Non-English-speaking respondents had significantly lower patient experience scores than English-speaking respondents for the Care Transitions measure.

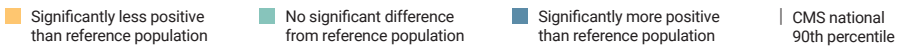
v Source: http:www.hcahpsonline.org, CMS, Baltimore, MD. October 2, 2017

HCAHPS Adult Patient Experience: Composites by Race (2015–2017)



HCAHPS Adult Patient Experience: Composites by Language (2015–2017)



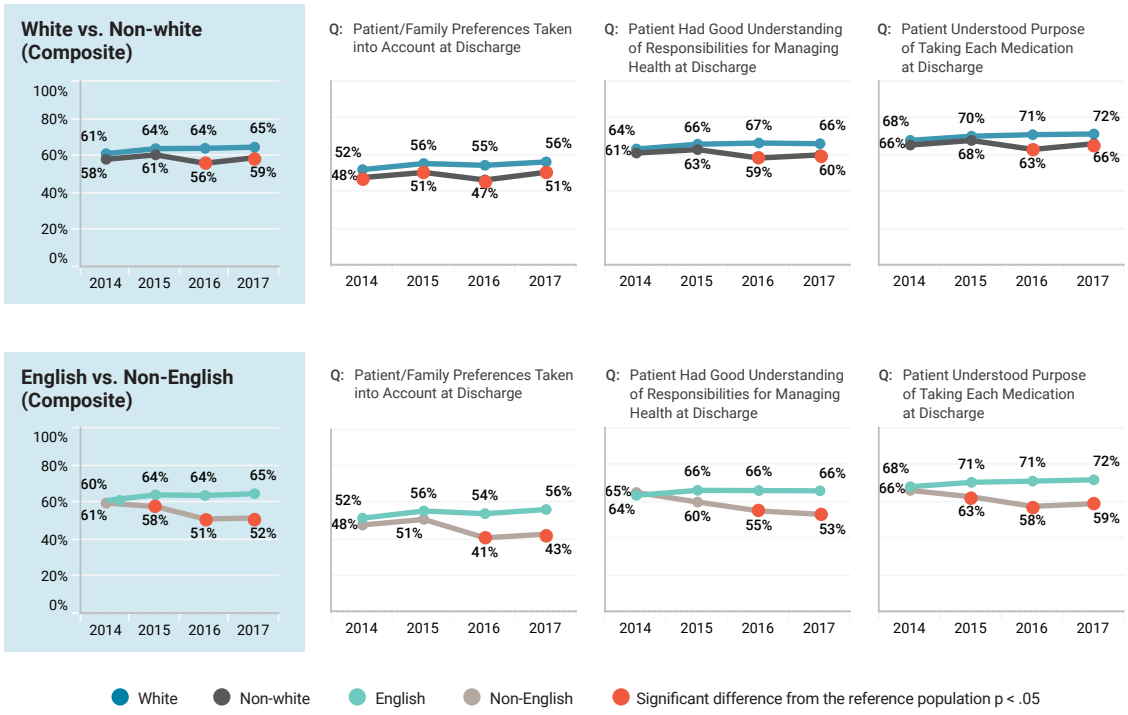


Focus on Care Transitions

In last year's AREHQ, we reported on differences by race and language in the HCAHPS Care Transitions composite. These differences have persisted into 2017. The results suggest disparities in patient perceptions of the quality of their transition from Mass General to the community, and therefore represent a continued important concern. We are currently exploring the concerns of our patients so that we can both close the gap and improve patients' experience during this important transition.

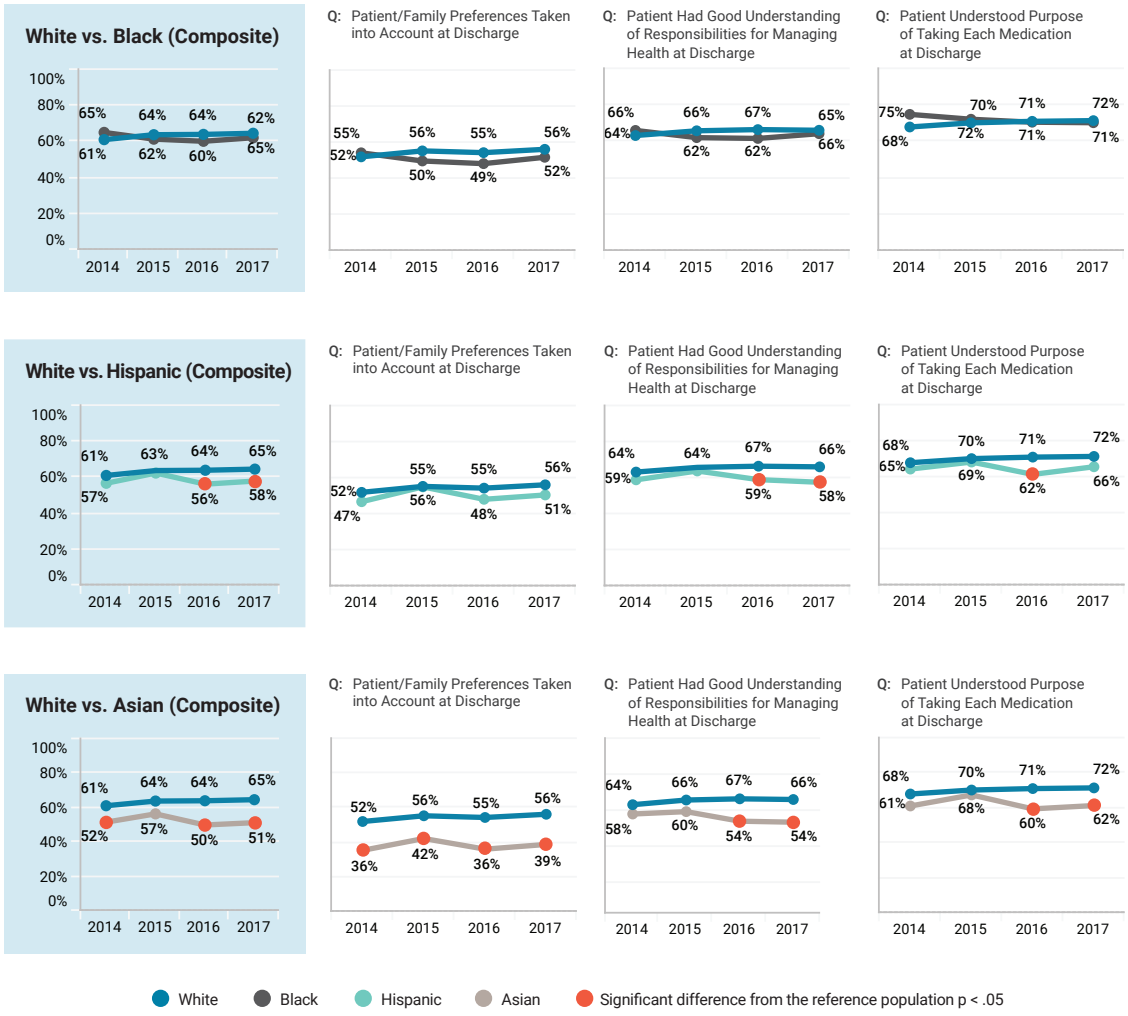
The figures below show results for the composite measure and individual items trended over four years. The first shows the Care Transitions composite measure and its constituent questions stratified by white/non-white and English/non-English comparison groups. The results show a widening gap by race and language in the composite measure, as well as each of the individual items. The widening gap is striking among non-English patients, particularly for the question referring to the patient's understanding of responsibilities for managing health at discharge, where top-box scores have declined by eleven percentage points over the past four years.

HCAHPS Composite: Care Transitions by Race and Language, 2014–2017



The second figure shows the results for Black, Hispanic, and Asian patients, compared to non-Hispanic whites. These results show a widening disparity in perceptions of care transitions within the Asian and Hispanic populations. Hispanic patients were significantly less likely to strongly agree that they had a good understanding of their responsibilities for taking care of themselves after discharge. Asian patients were significantly less likely to strongly agree on all three components of the Care Transitions measure: that their preferences were considered at discharge, they understood their responsibilities for taking care of themselves after discharge, and that they understood the purpose of each medication prescribed at discharge.

HCAHPS Composite: Care Transitions Compared by Race, 2014–2017



These quantitative trends suggest room for improvement in how transitions from Mass General to the community are handled for our diverse patients, particularly Asian and non-English-speaking patients. This year we continued to explore opportunities for improvement in the Care Transitions measures by reviewing survey comments for insights leading to actionable improvement strategies. We chose to focus on Asian respondents because this population had the lowest scores on the Care Transitions composite. Of the 474 surveys completed by self-identified Asian patients, 355 surveys included at least one comment (for a total of 655 individual comments). Respondents could answer up to five open-ended questions at the end of the survey.

- Open-ended survey questions:
  - Did you experience any good surprises during the time you were hospitalized? Do you recall any very positive experiences that you can tell me about?
  - Did you experience any bad surprises during the time you were hospitalized? Do you recall any very negative experiences that you can tell me about?
  - Please tell us what the hospital could do, in general, to improve the care and services in the ICU.
  - We understand that you reported having a disability. Please tell us what the hospital could do to improve the services for patients with disabilities.
  - Please comment on your experience with how often staff checked on you to see how you were doing.

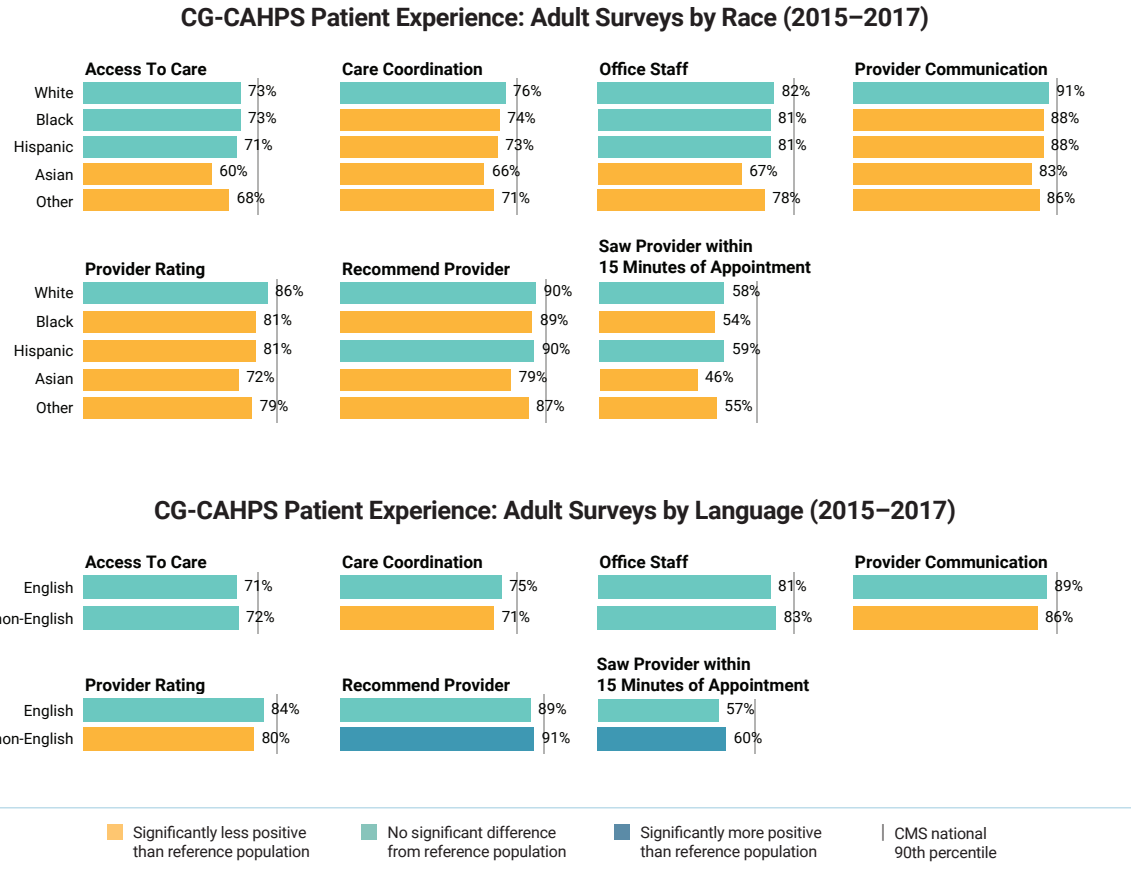
- There were no mentions of language barriers or cultural differences in the HCAHPS survey comments; however, several issues that are well known to Mass General were described: room noise, sharing rooms, discharge processes, and the desire for better care coordination and communication by staff.
- Of the 655 comments, about 5% addressed improved care coordination and communication by staff.
- Themes from care coordination comments included:
  - Concerns about the frequency and quality of the communication between physicians and nurses.
  - Concerns about the number of providers on the care team, and patients reporting difficulty understanding the roles of each member.
  - Patients feeling overwhelmed and confused, not understanding what was happening and why.
- Themes from communication comments included:
  - Desire for more information from the care team about what was happening, when, and why.
  - Concerns that providers were not listening to the patient, understanding the patient's concerns, and providing enough information to help the patient understand.
  - Concerns that test results were not communicated promptly.
- It is not clear why we did not see any comments regarding language or cultural differences. Several possible explanations include:
  - Perhaps cultural issues make these patients less inclined to voice their displeasure in a verbatim comment but feel more comfortable responding to survey questions.
  - It is possible that although some respondents did want to comment, a language barrier prevented them from doing so effectively. Verbatim questions are likely harder to respond to for a person who is not proficient in English. Surveys are only available in English and Spanish.
  - We did not compare these comments (and distribution of comment codes) against the comments left by patients of other races. Perhaps there are differences in the distribution of comments by race that would lead to actionable improvement opportunities.

Although these comments reveal opportunities for improvement, they lack the specificity required to identify concrete strategies for enhancing diverse patients' experience of the discharge process. As a next step, we convened a multidisciplinary team to define and implement an improvement plan for fiscal year 2019. This process will involve further statistical analysis of the Care Transitions measures, along with interviews and/or focus groups with Asian patients to better understand the specific issues and opportunities. Once this work is completed, the group will define and implement specific improvement plans, which we will report in the 2019 AREHQ. We recognize that we have opportunities to improve across all patients, in addition to closing gaps in performance between groups.

Outpatient (CG-CAHPS)

Past AREHQ reports addressed two measures of ambulatory patient experience: a patient's overall rating of their provider and their willingness to recommend that provider. This year, we explored all CG-CAHPS composites and found significant differences by race and language in several areas.

- Asians and patients of "Other" race reported significantly lower patient experience scores for all seven CG-CAHPS measures.
- Respondents who identified as Black reported significantly lower patient experiences scores in five of seven measures (Care Coordination, Provider Communication, Overall Provider Rating, Willingness to Recommend Provider, and Saw Provider within 15 Minutes of Appointment Time).
- Respondents who identified as Hispanic reported significantly lower patient experience scores in three areas: Care Coordination, Provider Communication, and Provider Rating.
- Non-English-speaking patients were significantly more likely to recommend their provider than English-speaking patients, but reported significantly lower patient experience scores in the areas of Care Coordination, Provider Communication, and Provider Rating.
- Overall, we see an opportunity to improve our patients' experience of their ambulatory visits across all groups and have institution-wide initiatives directed at that goal, while focusing on closing gaps across patient groups.



We extended our qualitative review of survey comments by Asian patients to the ambulatory surveys, since we continue to see significantly lower scores on CG-CAHPS questions within this population (n=1,421). The CG-CAHPS survey includes three open-ended questions:

- Please tell us how this provider's office could have improved the care and services you received in the last six months.
- Please describe something about this provider or healthcare provider that delighted or disappointed you.
- Please describe something about the staff at this office—the receptionists or nurses—that delighted or disappointed you.

Common themes among Asian patients included issues with waiting times, appointment scheduling, care coordination, not receiving test results, and not having messages returned. Additionally, there were four responses that specifically mentioned language.

- One patient had a particularly good experience with the provider and the staff, highlighting that the provider made the patient feel comfortable, empathized, and created trust. This patient also noted that the nurse in the office spoke the patient's language, which helped the patient feel well cared for.
- Three patients expressed difficultly understanding their providers due to English being a second language.

Similar to the HCAHPS comments, care coordination and communication were common themes, which accounted for approximately 9% of the 638 CG-CAHPS comments analyzed. Themes from these comments included:

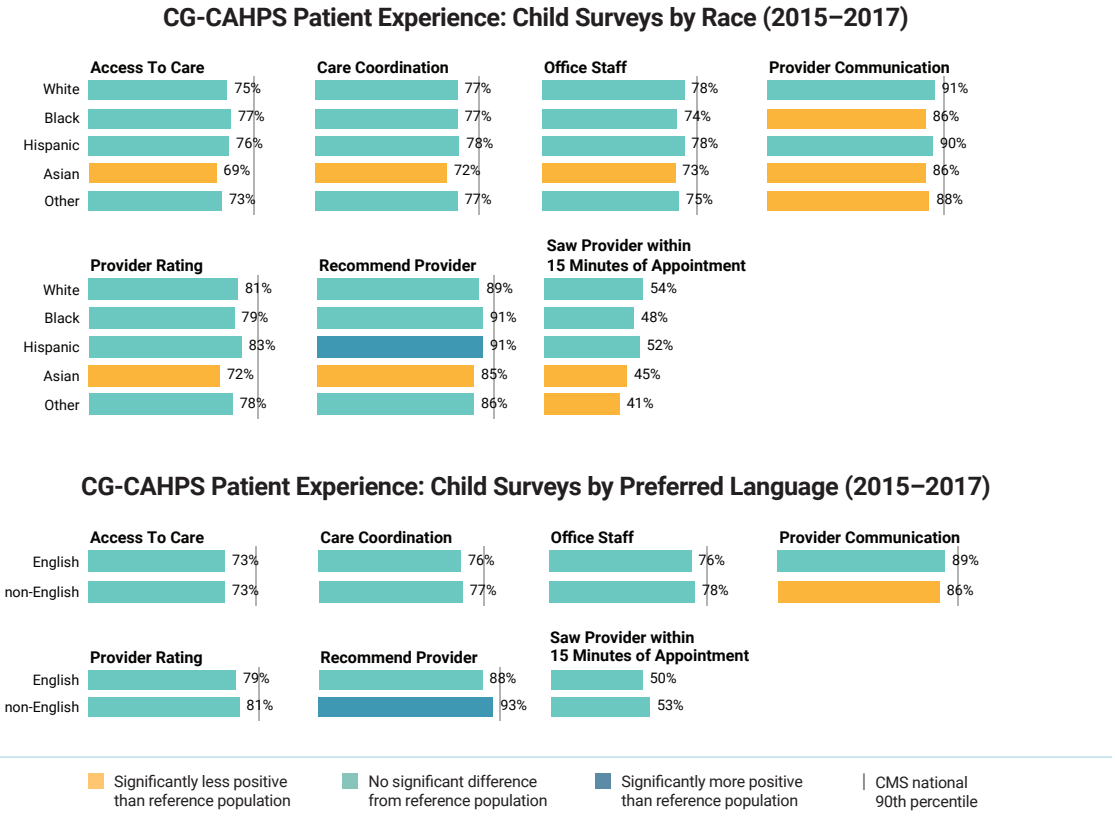
- Frustration with the process for getting referrals to a specialist, as well as poor communication about test results. Specific concerns centered around wait times for diagnostic exams, such as imaging, and lack of follow-up from providers regarding test results.
- Several patients mentioned that although they could see their test results on Patient Gateway (Mass General's patient portal), they expected communication from their provider to interpret these results and discuss next steps.

Pediatric Patient Experience

Outpatient pediatric patient experience results by race and primary language were also examined (CG-CAHPS data, January 2015–December 2017). Ratings reflect responses provided by the child's caregiver. Again, we expanded the analysis to include all CG-CAHPS composite measures.

- Asian respondents reported significantly lower patient experiences scores on all seven composite measures.
- Black, Asian, and patients of Other races reported significantly lower patient experience scores on provider communication.
- Non-English-speaking respondents reported significantly higher patient experience scores on Recommend Provider, but less positive experiences on Provider Communication.

These results show fewer disparities than the overall HCAHPS and CG-CAHPS results. This is consistent with a large national study that found that the care provided to children is generally perceived more positively than care provided to adults. Research is limited on disparities in pediatric CG-CAHPS results.[13]



Reducing Disparities in Patient Experience

As discussed earlier in the report, we have seen lower patient experience scores among Mass General's Asian population in the period 2015–2017. It is important to note these results are based on internal data that have not been adjusted. HCAHPS survey results are adjusted for patient mix and survey mode prior to public reporting to ensure objective and meaningful comparisons across hospitals. This adjustment considers patient gender and service-line (Medical, Surgical, and Maternity), with the underlying assumption that patient expectations differ within these groups. HCAHPS surveys are not adjusted for race/ethnicity or language. Some of the differences in Asian patient experience at Mass General may be explained by variation in case mix; but, regardless, there is clearly an opportunity to better understand and improve the experiences of our Asian patients.

Toward that end, we have launched an improvement strategy for 2019. Reducing the disparities associated with Care Transitions measures is a 2019 Quality and Safety Goal for Mass General, and an interdisciplinary team has convened to develop concrete improvement plans. Next steps include additional exploration of the patient experience data to identify targeted improvement opportunities (such as within certain departments or units). The team will also conduct interviews or focus groups with Asian patients to learn more about how Mass General can better meet their expectations in care transitions and other areas. These findings will be reported in the 2019 AREHQ.

This year's AREHQ once again moves the needle forward, assuring that we are executing on our goal of high quality care for all by measuring our performance and holding ourselves accountable for improvement.

Joseph R. Betancourt, MD, MPH

SECTION 5

Outcome Measures: Readmission

5.1 Background on Disparities in Readmission Rates

Readmission rates, typically within 30 days of hospital discharge, continue to be a principal measure of efficiency and value, with CMS and other payers assessing financial penalties on providers with "excess" readmissions. Hospital-wide readmission rates, as well as those for select medical conditions and procedures, have been publicly reported on Hospital Compare for several years, raising awareness of readmissions and transitions in care as key measures of quality and safety. While some readmissions are preventable—the result of factors such as inadequate outpatient follow-up and the development of complications—not all readmissions are avoidable. The challenge for hospitals nationwide is to provide a safe transition to the patient's discharge destination and coordinate follow-up care to prevent unnecessary readmissions.[14]

A readmission occurs when a patient returns to the hospital for a subsequent inpatient stay within 30 days of discharge, for any diagnosis.[vi] Emergency Department visits or observation stays are not considered readmissions. Some planned readmissions are excluded (for example, chemotherapy, childbirth, radiation, dialysis, and some instances of follow-up care for heart attack and pneumonia patients).[vii] This approach is consistent with how CMS and other payers define a readmission event.

Multiple efforts are underway at Mass General to reduce unnecessary returns to the hospital, including improving the way we manage discharge transitions, calculating the risk of readmission for each individual patient and providing special supportive services to high risk patients, providing more specific and user-friendly discharge instructions to patients, and closely monitoring readmission rates within each department and service.[viii] Mass General also engages Interpreter Services to support the communication needs of our patients at discharge. Despite these efforts, readmission rates have been relatively stable for several years between 12–12.5%.

---

vi Readmission rates include returns to Mass General (discharging hospital) only.

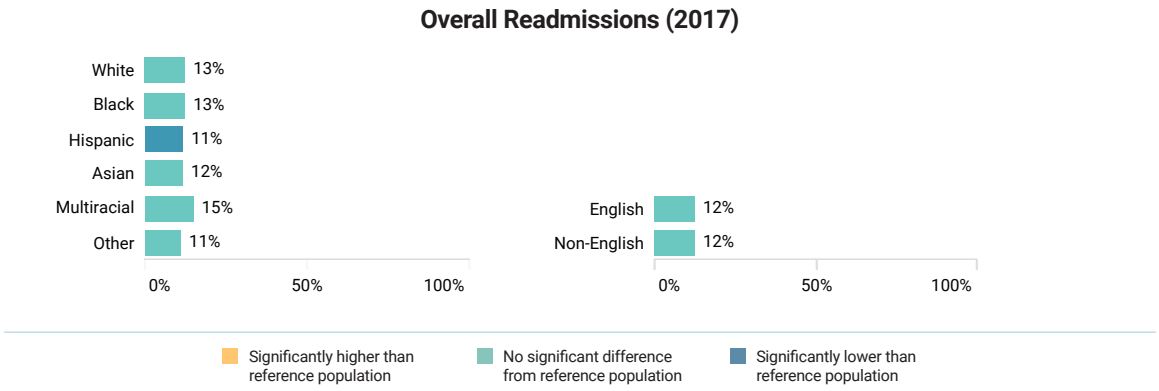
vii Other exclusions to the readmission rate are: patients with a discharge status of deceased, left against medical advice, transferred to another short-term acute facility, transferred to a psychiatric hospital, or transferred within the same hospital (for psychiatry, rehabilitation, or hospice) during the index admission.

viii To learn more about approaches to reducing disparities in readmission rates, see the *CMS Guide to Reducing Disparities in Readmission* at https://www.cms.gov/About-CMS/Agency-Information/OMH/Downloads/OMH_Readmissions_Guide.pdf

5.2 Trends in Mass General Hospital-Wide Readmission Rates

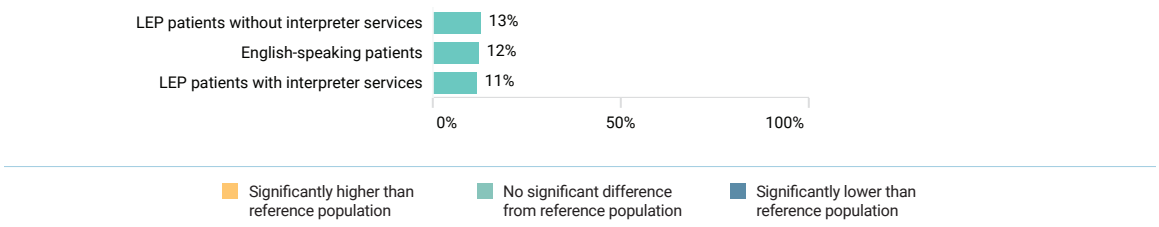
Last year we examined our readmission rates by race and language, with the hypothesis that non-English-speaking patients would be at higher risk for readmission. Although we did not find evidence of a disparity (non-English-speaking patients had lower readmission rates compared to their English-speaking counterparts), we continue to monitor to ensure that this trend continues.

We examined our internal hospital-wide readmission rate for calendar year 2017 and found no disparities by race or language. Preliminary analysis for the first half of calendar year 2018 suggests these trends will remain stable, although we will continue to monitor them.



There is evidence in the literature suggesting that lack of access to interpreter services is a predictor of readmission for non-English-speaking patients. In a natural experiment that provided interpreters to limited English proficiency (LEP) patients, the rates of readmission among LEP patients decreased from 17.8% to 13.4% over an eight-month period. This decrease was statistically significant.[15]

We collaborated with our Interpreter Services Department to obtain data on LEP patients and their use of interpreters at discharge. We used four years of data (July 2014–June 2018) to examine readmission rates stratified by interpreter use. LEP patients who received an interpreter had readmission rates a full percentage point lower than LEP patients who did not receive interpreter services, although this finding was not statistically significant. We will continue to collaborate with our Interpreter Services team to monitor interpreter use and its impact on readmission rates for LEP patients.



5.3 Analysis of CMS Condition-Specific Readmission Rates

CMS collects and publicly reports readmission data for seven conditions and procedures: chronic obstructive pulmonary disease, coronary bypass graft procedures, heart attack, heart failure, hip and knee replacement procedures, pneumonia, and stroke. There is a large body of literature suggesting that disparities in readmission rates exist within these populations. Evidence suggests that Black Medicare beneficiaries have higher readmission rates compared to whites for COPD, heart attack, congestive heart failure, pneumonia, and stroke.[16–19] Research also suggests that Hispanic Medicare beneficiaries have higher rates of readmission compared to whites for heart attack and heart failure.[17,20] Racial disparities also exist in readmission rates for common procedures, such as total joint replacement.[21]

Sociodemographic factors and barriers to care—such as poor social support, living in low-resourced or socioeconomically disadvantaged communities, lack of a usual source of care, limited English proficiency, poor health literacy, numeracy and general literacy, as well as issues of mistrust and discomfort with self-engagement—can contribute to higher readmission rates.[22] Among socioeconomic factors, such as race/ethnicity, income, marital status, and education level, race/ethnicity was found to be most associated with the risk of readmission for heart attack (AMI) and heart failure.[23]

We explored 30-day readmission rates for the seven CMS conditions and procedures, with the hypothesis that disparities may appear within these smaller, discrete cohorts. We used a two-year interval of data to provide enough statistical power to detect a disparity. No evidence of a disparity was found by race or language. We will continue to monitor the hospital-wide readmission rate, as well as the CMS condition/procedure cohorts for evidence of disparities. Meanwhile, efforts continue in our work to reduce the overall readmission rate by focusing on safe transitions from Mass General to the community.

Readmission Rates among CMS Populations (July 2016 – June 2018)

	AMI	Arthroplasty	CABG	COPD	Heart Failure	Pneumonia	Stroke
White	12%	3%	7%	19%	19%	15%	10%
Non-white	11%	3%	12%	21%	18%	15%	10%

	AMI	Arthroplasty	CABG	COPD	Heart Failure	Pneumonia	Stroke
English	12%	3%	8%	19%	19%	15%	10%
Non-English	14%	4%	10%	20%	17%	18%	10%

Significantly higher than reference population

No significant difference from reference population

Significantly lower than reference population

The integration of health equity into my role as Quality and Safety Chair in Ob/Gyn is, to me, entirely intuitive: I firmly believe that we cannot claim to provide quality care if we are not providing equitable care. Whether in our cesarean delivery rates, fertility outcomes, or access to cancer care, we are committed to ensuring optimal outcomes for all the patients we serve.

Allison S. Bryant Mantha, MD, MPH

SECTION 6

Department-Specific Quality Measures

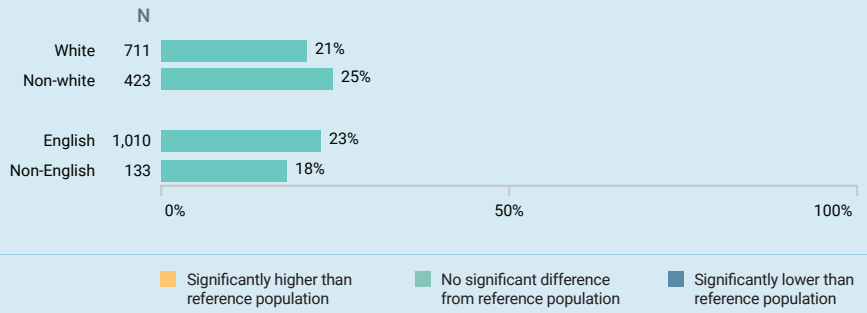
Obstetrics: NTSV Cesarean Deliveries

The Cesarean delivery rate in the U.S. has been steadily rising over the last two decades, reaching its highest rate of 32.9% in 2009.[24] These deliveries—though often indicated for maternal and fetal conditions—are associated with increased maternal morbidity, a longer recovery period, and future pregnancy complications.

Approximately 60% of all Cesarean deliveries are first Cesarean deliveries. Nationally, fewer than one in ten women with a prior Cesarean delivery will have a vaginal birth in a later pregnancy.[25] For this reason, efforts to reduce the Cesarean delivery rate have focused on women who are at "low risk" to require a first Cesarean delivery, namely those who are nulliparous (first-time mothers) and at term (greater or equal to 37 weeks) carrying a singleton and vertex-presenting (head down) fetus, or "NTSV." Since 2009, several national organizations have issued objectives to track Cesarean deliveries among women with NTSV pregnancies, including the U.S. Department of Health and Human Services, the Joint Commission, and the American College of Obstetricians and Gynecologists. Research using national data, including work from MGH faculty, demonstrates that in the U.S., Black women have consistently higher rates of primary cesarean deliveries,[24,26] a finding not entirely explainable by differences in other measurable characteristics such as obesity, medical co-morbidities, obstetrical risk factors or labor management practices.[27,28]

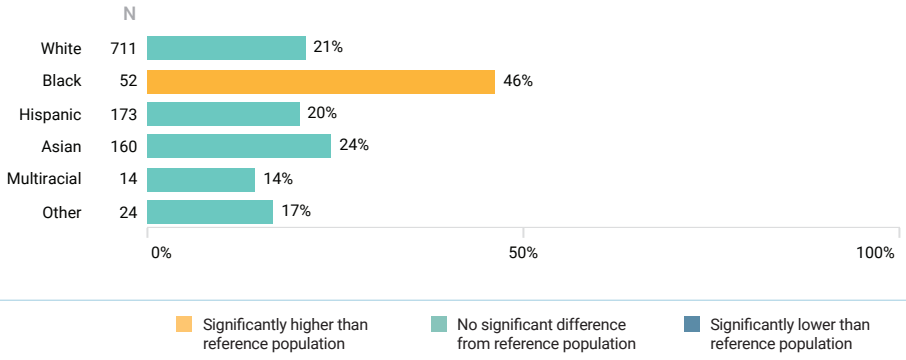
Mass General has submitted data to the Joint Commission on NTSV Cesarean section rates since 2013. Although required submissions and analyses do not stratify by race, we separately explored NTSV Cesarean delivery rates among white/non-white and English/non-English speaking patients. No evidence of a disparity was present for either group at this level.

NHQM NTSV C-Section Measure by Race and Language (2015–2017)



When we further stratified the data by individual racial and ethnic categories we found, consistent with national trends, that Black women were delivered by Cesarean section more frequently than white women (46.2% for Black women, compared to 21.2% for white women in the sample examined).

NHQM NTSV C-Section Measure by Race (2015–2017)



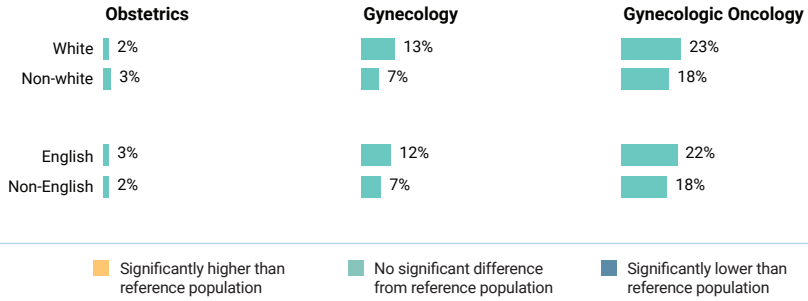
Of note, the Joint Commission results are based on a sample of our patients. When we examined the entire census of MGH deliveries from 2016 through 2018 and adjusted for other risk factors which may differ between racial and ethnic groups, such as maternal age and obesity, we still noted a statistically meaningful and higher risk of NTSV cesarean deliveries among Black women (adjusted odds ratio 1.85, 95% CI [1.29, 2.66]). This difference, however, was most notable in the earlier years we studied (2016–2017) and rates did not statistically differ in 2018. We are currently working with our colleagues in the Obstetrics Department to better understand these differences and temporal trends. Since 2016, the department has launched a campaign to increase awareness of inequities in outcomes and care among providers and has introduced trainings in unconscious bias, among other interventions. In an effort to understand where best to target future efforts, we are eager to understand whether indications for cesarean differ by race/ethnicity in our population, as research by MGH faculty and others has shown elsewhere,[29,30] and the role of variation in patient-provider communication.

Obstetrics & Gynecology: Readmission Rates

The OB/GYN Department is very involved in readmission reduction work at Mass General. Although it has a very low rate of readmission overall, we were interested in whether we could detect differences by race and language within the three distinct patient populations served by the Department: Obstetrics, Benign Gynecology, and Gynecologic Oncology. We worked with department colleagues to attribute inpatient stays to the appropriate division, and then stratified by race and language. This analysis is based on two years of data from July 2016 to June 2018.

Not surprisingly, Gynecologic Oncology had the highest overall rate of readmission, while readmission rates for Obstetrics were quite low. We found no evidence of any disparities by race or language.

OB/GYN Readmissions by Race and Language (July 2016 – June 2018)



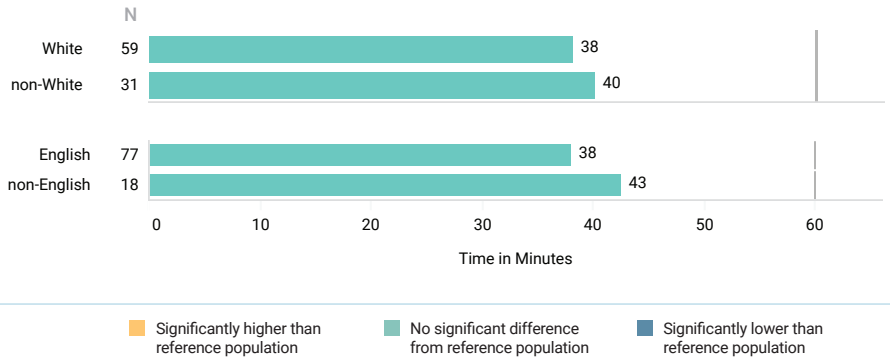
Neurology: tPA for Stroke Patients

Mass General is certified as a Comprehensive Stroke Center by the Joint Commission and participates in the Get with the Guidelines stroke quality reporting program. One of the most important quality measures for patients with ischemic stroke is Time to Receiving Tissue Plasminogen Activator (tPA), a clot-busting drug that can reduce the disabling effects of stroke if given soon after the onset of symptoms. As the American Heart Association public awareness campaign states, "Time is brain." If provided within three hours of the onset of stroke symptoms, tPA medication can greatly improve a patient's chances of recovery.

There is evidence in the literature of disparities in the tPA measure among racial minorities, with differences in awareness of stroke symptoms, as well as access to care. On average, Black and Hispanic individuals arrive three hours later to the emergency department as compared to whites after the onset of a stroke.[31] Blacks and Hispanics tend to be less informed than whites about stroke symptoms. For example, Blacks and Hispanics are less likely to know that a stroke occurs in the brain and that pain is not a symptom. This discrepancy in knowledge may partially explain the delay in hospital arrival among minority groups.[32]

We looked for disparities by race and language in the median time to receiving tPA, with the hypothesis that language barriers and/or differing degrees of awareness about the disease may affect the time to treatment. We examined three years of data and found no evidence of a disparity by race or language.

Door-to-Needle Median Time: Stroke Patients (2015–2017)



SECTION 7

Racial and Ethnic Disparities: Standard Reporting Measures

7.1 Inpatient Clinical Quality Indicators

National Hospital Quality Measures

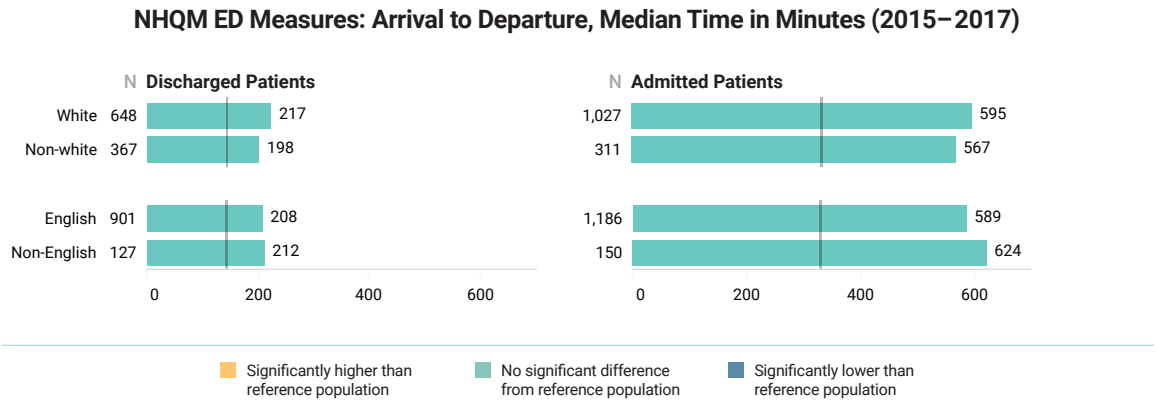
Mass General tracks several National Hospital Quality Measures (NHQMs) related to emergency department throughput, sepsis treatment, endoscopy surveillance for colon polyps, and Influenza immunization. These measures are reported to CMS and the Joint Commission as part of nationally mandated public quality reporting on clinical processes of care. The NHQMs are analyzed and reported by race (for white and Other), and primary language (for English and non-English). We analyzed three years of data to ensure a large enough sample size to detect disparities by race and language.

Mass General has analyzed the NHQMs since the inception of this report, as they provide an opportunity to explore potential disparities in key clinical processes. However, many of the NHQMs reported in prior editions were recently discontinued by CMS and the Joint Commission as compliance approached 100% nationwide. Evidence of disparities lessens as providers attain uniform high quality on publicly reported measures, which is why public reporting of quality measures is an important intervention for reducing disparities.

ED Throughput

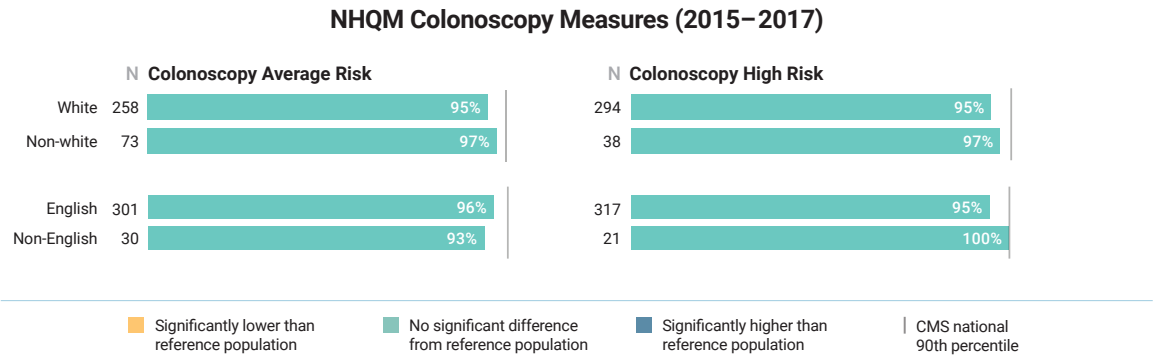
Access to care is an important facet of health equity. Massachusetts healthcare reforms providing universal insurance coverage have reduced inappropriate use of the ED.[33] However, ED capacity challenges persist at Mass General due to the high volume of visits, combined with inpatient areas that are consistently at full capacity. Our ED throughput times are well above the national benchmark for high volume emergency departments. Addressing the capacity challenge in the ED is one of Mass General's quality and safety goals, and although there are many efforts underway to improve overall throughput, we were concerned there may be disparities by race or language.

Based on the most recent three-year sample of patients, we did not see any evidence of a disparity by race or language for the ED timeliness measures. Yet, there is clearly work to be done and there are many improvement efforts underway to improve ED throughput for all patients. In 2018, several multidisciplinary teams worked to decrease the time between inpatient beds being cleaned and ready, and the ED patient's arrival on the unit. This pilot project on nine inpatient Medical units reduced the median time from "bed ready" to patient arrival on the unit from 100 minutes (October–November 2016) to 66 minutes (October 2017–June 2018). Further work is underway to decrease the amount of time needed for admitting resources to find a patient bed.



Polyp Surveillance

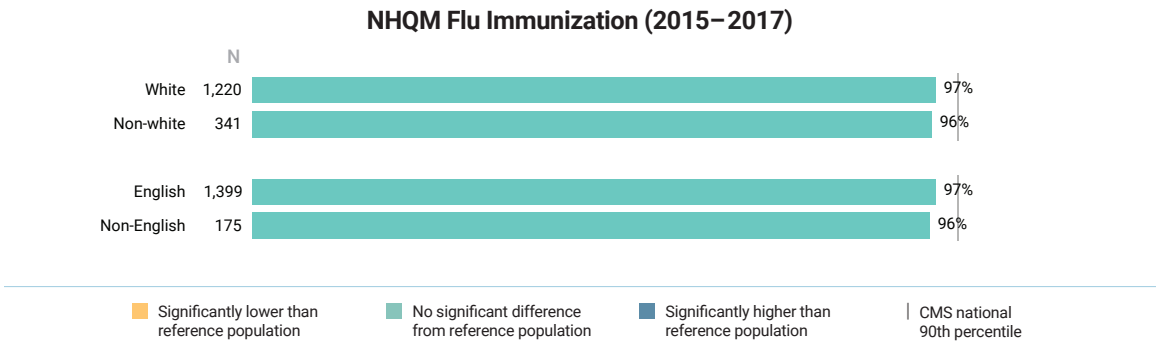
We continue to report on two national measures of outpatient polyp surveillance. These measures assess whether patients received a colonoscopy exam within the recommended follow up intervals, according to their risk status. Average risk patients have no history of polyps, and the recommended interval is 10 years between exams. The testing intervals for high risk patients with a history of precancerous polyps varies by individual. The high risk polyp surveillance measure assesses the number of patients who had a colonoscopy within the recommended time frame. We found no evidence of a disparity by race or language, and Mass General's performance exceeds the national average on both measures (85% for average risk, 90% for high risk), but has room for improvement to reach the national 90th percentile.



Influenza Vaccination

The literature suggests rates of Influenza vaccination among adults aged 18 and older are significantly lower among Hispanics and non-Hispanic Blacks than among non-Hispanic whites.[34] Hispanic patients whose preferred language is Spanish are significantly less likely to receive flu vaccinations compared with those who prefer to speak English.[35,36] Possible explanations for these disparities include language barriers and poor communication between providers and patients, patient knowledge and attitudes toward flu vaccination, and health provider bias.[37,38] Although Influenza vaccination rates for minorities have improved over time, racial/ethnic disparities persist among all age groups. During the 2011–2012 season, only 28–42% of minorities were covered by the flu vaccine.[39]

In 2012, CMS and the Joint Commission added a new measure for Influenza vaccination, which tracks vaccination for all inpatients regardless of diagnosis (previous measures were limited to patients with pneumonia). We now have data for six consecutive Influenza seasons and have not seen any evidence to date of a disparity by race or language. This finding is reassuring given the evidence of lower vaccination rates for these populations in the literature.



7.2 | Ambulatory Clinical Quality Indicators

HEDIS Measures

The outpatient clinical quality indicators show performance measures based on HEDIS (Healthcare Effectiveness Data and Information Set) standards for patients seen between 2014 and 2016. For nearly all comparisons, adherence rates were higher for patients linked to a physician, compared to patients linked only to a practice. These findings indicate an opportunity to evaluate the practice-specific model to identify opportunities for performance improvement. While there are differences in adherence rates for each measure by race, patterns are not consistent across measures and the results are not adjusted for clinical severity.

Disparities in cancer screening rates for Asians are reflected in the national literature. Rates of screening for breast cancer were similar between the Black and white populations, however Blacks with advanced breast cancer were diagnosed less than whites, and this disparity has only gotten worse over time. Screening rates for colorectal cancer were also similar between Black and white individuals. The percentage of those who had received pap smears was lowest amongst Asians.[40]

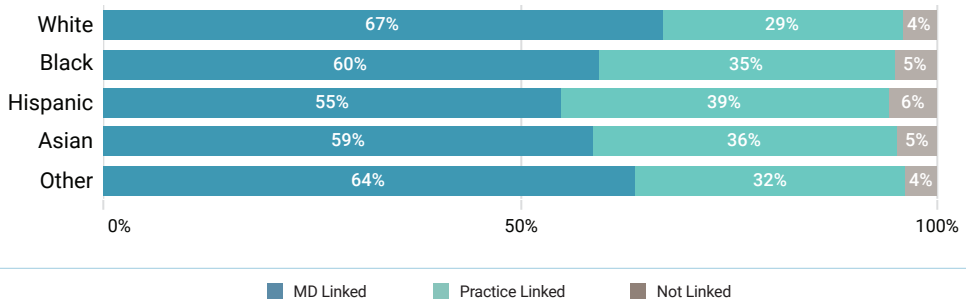
According to the 2015 National Impact Assessment of Quality Measures Report, there were persistent racial disparities in the following Medicare Part C HEDIS measures: breast cancer screening (age 52–59), colorectal cancer screening, glaucoma testing, access to ambulatory services for patients age 65+, osteoporosis management in women who had a fracture, eye exams for diabetics, blood pressure control, and rheumatoid arthritis management. In all of these measures, the evidence suggests that disparities are declining over time.[41]

We analyzed seven HEDIS general health screenings: breast, cervical, colorectal, and prostate cancer screenings, as well as HbA1c testing and cholesterol screening for diabetics and cholesterol screening for patients with coronary artery disease (CAD). Racial and ethnic disparities were found at Mass General in three out of seven measures analyzed: cervical, colorectal, and prostate cancer screening:

- Cervical cancer screening rates were lower for Asians in practice-linked arrangements, compared to whites. There were no significant differences between Asians and whites in physician-linked arrangements.
- Asians (physician- and practice-linked) and Blacks (practice-linked) had lower screening rates for colorectal cancer, while Hispanics (physician-linked) had higher screening rates.
- Hispanics (physician-linked) and Asians (physician- and practice-linked) had lower screening rates for prostate cancer, compared to whites.
- No disparities were evident in breast cancer screening, diabetes care, or cholesterol testing for patients with CAD. In fact, Hispanic patients in physician-linked arrangements had higher breast, cervical, and colorectal cancer screening rates, as well as higher diabetes screening rates compared to whites. Asians (physician-linked) had higher diabetes screening rates compared to whites, and Blacks (physician-linked) had higher prostate screening rates compared to whites.

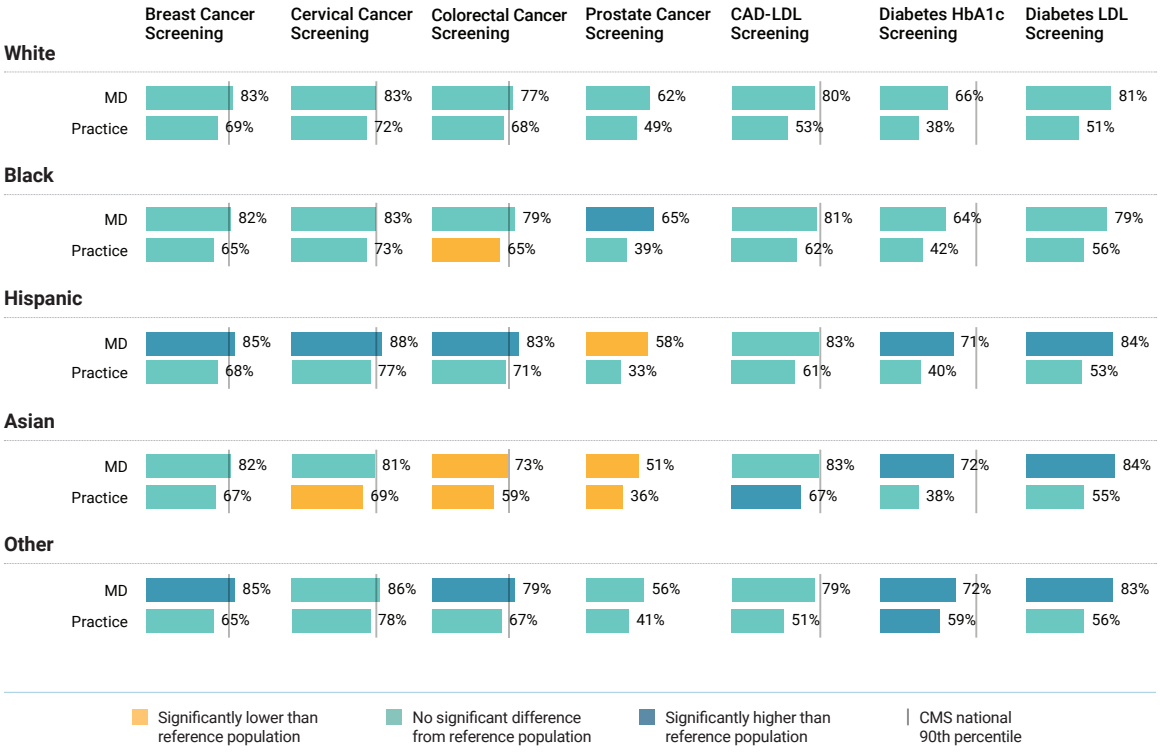
We continue our efforts to improve these outpatient quality of care measures for all Mass General patients, including racial and ethnic minorities. Our population health program targets chronic disease management and cancer prevention. Population health efforts also focus on Mass General community health centers and target individuals who have language or cultural barriers to care.

MGH Patients Linked to a PCP, Practice, or Not Linked (2016)



NOTE: Outpatient clinical quality indicators were supplied by the Primary Care Operations Improvement program. Mass General primary care practices include health center sites (Charlestown, Chelsea, Everett, North End, and Revere) and non-health center sites (Ambulatory Practice of the Future, Back Bay, Beacon Hill, Bulfinch Medical Group, Downtown, Everett, Internal Medicine Associates, Mass General Medical Group, Primary Care Associates, Primary Care Boston, Revere Broadway, Senior Health, Women's Health, and Waltham). Each year's cohort includes all unique patients linked to that primary care practice over the prior three calendar years. Non-Partners data are not completely captured. Data sources vary for each outcome, so one should focus on relative differences rather than absolute differences among measures and physician/practice linkages.

Ambulatory Quality Measures by Race and Linkage Status (2014–2016)



Partners Population Health began a new program in 2017 to measure ambulatory quality across all patient populations (HEDIS was limited to patients with commercial insurance). Leveraging our electronic health record, we can report on ambulatory screening and primary care quality for the entire Mass General population. Future versions of the report will include these comprehensive measures of ambulatory quality in place of the HEDIS measures.

Conclusion

Mass General remains committed to identifying and eliminating disparities in healthcare quality. Since 2003, we have made equity a key focus of our quality efforts, and since the release of our first Disparities Dashboard in 2007, we have expanded our knowledge and action significantly. We continue on our journey of robust measurement as a means of identifying disparities, then aiming to better understand them, and finally, developing strategies to address them. The Disparities Solutions Center, in partnership with the Center for Quality and Safety, is pleased to share this work with hospitals across the nation in the hope that all organizations can better identify disparities, improve quality, and achieve equity.

References

1. Institute of Medicine Committee on Quality of Health Care in America. *Crossing the Quality Chasm: A new health system for the 21st century*. National Academies Press; 2001.
2. Smedley BD, Stith AY, Nelson AR. *Unequal Treatment: Confronting racial and ethnic disparities in health care (full printed version)*. National Academies Press; 2002.
3. Quality AfHRa. 2017 National Healthcare Quality and Disparities Report. 2017.
4. Emery CR, Boatright D, Culbreath K. Stat! An Action Plan for Replacing the Broken System of Recruitment and Retention of Underrepresented Minorities in Medicine. *National Academy of Medicine Perspectives* 2018.
5. Divi C, Koss RG, Schmaltz SP, Loeb JM. Language proficiency and adverse events in US hospitals: a pilot study. *International journal for quality in health care : journal of the International Society for Quality in Health Care / ISQua.* 2007;19(2):60–67.
6. Lindholm M, Hargraves JL, Ferguson WJ, Reed G. Professional language interpretation and inpatient length of stay and readmission rates. *J Gen Intern Med.* 2012;27(10):1294–1299.
7. Joint Pew Hispanic Center and Robert Wood Johnson Foundation. *Hispanics and Healthcare in the United States: Access, Information, and Knowledge.* August 2008 2008.
8. Sorkin DH, Ngo-Metzger Q, De Alba I. Racial/ethnic discrimination in health care: impact on perceived quality of care. *J Gen Intern Med.* 2010;25(5):390–396.
9. Elliott MN, Lehrman WG, Goldstein E, Hambarsoomian K, Beckett MK, Giordano LA. Do hospitals rank differently on HCAHPS for different patient subgroups? *Medical Care Research and Review.* 2010;67(1):56–73.
10. Wang R, Hempton B, Dugan JP, Komives SR. Cultural Differences: Why Do Asians Avoid Extreme Responses? *Survey Practice* 2008;1(3).
11. Dolnicar S, Grun B. Cross-cultural differences in survey response patterns. *International Marketing Review.* 2007;24(2):127–143.
12. Weech-Maldonado R, Elliott MN, Oluwole A, Schiller KC, Hays RD. Survey Response Style and Differential Use of CAHPS Rating Scales by Hispanics. *Med Care.* 2008;46(9):963–968.
13. Chen AY, Elliott MN, Spritzer KL, et al. Differences in CAHPS reports and ratings of health care provided to adults and children. *Med Care.* 2012;50 Suppl:S35–39.
14. AHC Media. Readmissions Are Down, Penalties Are Up—What Do You Do Now? *Hospital Case Management.* January 2017;25(1):1–16.
15. Karliner L P-SE, Gregorich S. Convenient Access to Professional Interpreters in the Hospital Decreases Readmission Rates and Estimated Hospital Expenditures for Patients with Limited English Proficiency. *Med Care.* 2017;55(3):199–206.
16. Joynt KE, Orav EJ, Jha AK. Thirty-day readmission rates for Medicare beneficiaries by race and site of care. *JAMA : the journal of the American Medical Association.* 2011;305(7):675–681.
17. Rodriguez F JK, Lopez L, Saldana F, Jha A. Readmission rates for Hispanic Medicare beneficiaries with heart failure and acute myocardial infarction. *American heart journal.* 2011;162(2).
18. Chhatbar P, J. O, Lackland D, et al. Racial Disparity in Post-stroke Readmission—a South Carolina Perspective. *American Heart Association.* 2018;137(1).
19. Elixhauser A AD, Podulk J. Readmissions for Chronic Obstructive Pulmonary Disease, 2008. *Agency for Healthcare Research and Quality.* 2011.

20. Ponce S NJ, Dodendorf D, Martinez M, Cox B, Laskey W. Impact of ethnicity, sex, and socio-economic status on the risk for heart failure readmission: The importance of context. *Ethnicity and Disease.* 2018;28(2):99.
21. Adelani M, Keller M, Barrack R, M O. The Impact of Hospital Volume on Racial Differences in Complications, Readmissions, and Emergency Department Visits Following Total Joint Arthroplasty. *The Journal of Arthroplasty.* 2018;33:309–315.
22. Betancourt JR T-MA, Kenst KS. Guide to Preventing Readmissions among Racially and Ethnically Diverse Medicare Beneficiaries. Prepared by the Disparities Solutions Center, Mongan Institute for Health Policy at Massachusetts General Hospital. Baltimore, MD: Centers for Medicare & Medicaid Services Office of Minority Health. 2015.
23. Damiani G SE, Silvestrini G, Ivanova I, Bojovic L, Iodice L, Ricciardi W. Influence of socioeconomic factors on hospital readmissions for heart failure and acute myocardial infarction in patients 65 years and older: evidence from a systematic review. *Clinical Interventions in Aging.* 2015;10:237–145.
24. Osterman MJ, Martin JA. Trends in low-risk cesarean delivery in the United States, 1990-2013. *National vital statistics reports : from the Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System.* 2014;63(6):1–16.
25. Curtin SC, Gregory KD, Korst LM, Uddin SF. Maternal Morbidity for Vaginal and Cesarean Deliveries, According to Previous Cesarean History: New Data From the Birth Certificate, 2013. *National vital statistics reports: from the Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System.* 2015;64(4):1–13, back cover.
26. Getahun D et al. Racial and ethnic disparities in the trends in primary cesarean delivery based on indications. *American Journal of Obstetrics & Gynecology*. 2009;201(4):422.e1–7.
27. Yee et al. Racial and Ethnic Differences in Utilization of Labor Management Strategies Intended to Reduce Cesarean Delivery Rates. *Obstetrics & Gynecology*. 2017;130(6):1285–1294;
28. Bryant AS et al. Quality and equality in obstetric care: racial and ethnic differences in caesarean section delivery rates. *Paediatric Perinatal Epidemiology*. 2009;23(5):454–62.
29. Washington S, Caughey AB, Cheng YW, Bryant AS. Racial and ethnic differences in indication for primary cesarean delivery at term: Experience at one U.S. Institution. *Birth*. 2012;39(2): 128–134.
30. Edmonds JK, Yehzekel R, Liao X, Simas TAM. Racial and ethnic differences in primary, unscheduled cesarean deliveries among low-risk primiparous woman at an academic medical center: A retrospective cohort study. *BMC Pregnancy & Childbirth*. 2013;13:168.
31. Springer M LD, Hochheiser E. Race-Ethnic Disparities in Hospital Arrival Time after Ischemic Stroke. *Ethnicity and Disease.* 2017;27(2):125–132.
32. Springer M. Understanding race-ethnic disparities in hospital arrival after stroke symptom onset (P3.259). *Neurology.* 2017;88(16 Supplement).
33. Sommers BD, Simon K. Health Insurance and Emergency Department Use—A Complex Relationship. 2017.
34. Seasonal Influenza Vaccination Coverage—United States, 2009–10 and 2010–11. In. *CDC Health Disparities and Inequalities Report—United States, MMWR* Vol 62 (Suppl 3): Centers for Disease Control and Prevention; 2013:65–68.
35. Pearson WS, Zhao G, Ford ES. An Analysis of Language as a Barrier to Receiving Influenza Vaccinations among an Elderly Hispanic Population in the United States. *Advances in preventive medicine.* 2011;2011:298787.
36. DuBard CA, Gizlice Z. Language spoken and differences in health status, access to care, and receipt of preventive services among US Hispanics. *American journal of public health.* 2008;98(11):2021–2028.

37. Fiscella K. Commentary—anatomy of racial disparity in influenza vaccination. *Health services research.* 2005;40(2):539-549.
38. Haviland AM, Elliott MN, Hambarsoomian K, Lurie N. Immunization disparities by Hispanic ethnicity and language preference. *Archives of internal medicine.* 2011;171(2):158–165.
39. Lu P, O'Halloran A, Bryan L, et al. Trends in racial/ethnic disparities in influenza vaccination coverage among adults during the 2007–08 through 2011–12 seasons. *Am J Infect Control.* 2014;42(7):763–769.
40. Agency for Healthcare Research and Quality. 2014 National Healthcare Quality and Disparities Report chartbook on person- and family-centered care. In. Rockville, MD 2015.
41. Fiscella K SM. Racial and ethnic disparities in the quality of health care. *Annu Rev Public Health.* 2016;37:375–394.
42. Health Research and Educational Trust. Reducing health care disparities: Collection and use of race, ethnicity and language data. Chicago: Health Research & Educational Trust, 2013.

APPENDIX A

Methods and Data Collection

The data in this report are drawn from a wide variety of institutional sources (see **APPENDIX B** for a complete list of data sources). The time periods vary depending on the measure and availability of data being presented. In several cases, groups needed to be combined into white and Other and English-speaking and Other groupings to meet minimum sample size requirements. For some measures, multiple years of data have been combined to ensure that sample sizes are adequate to draw meaningful conclusions. White and English-speaking groups are used as the reference group for statistical analyses throughout the report. Finally, the naming conventions for the data elements are based on the nomenclature of the data sources. This explains why in some cases "white" is used, while in other cases "Non-Hispanic white" is used.

Collection of Data on Race, Ethnicity, and Language at Mass General

In July 2014, Mass General transitioned from its existing registration and billing system to Epic as part of the Partners-wide eCare implementation. In doing so, Mass General changed its race and ethnicity data collection slightly. In the past, when patients presented for registration, registrars asked them to identify first their race and then their ethnicity using categories that were standard across the state; whether a patient identified as Hispanic/Latino was included in the question about race. During registration in Epic, registrars now ask patients to first identify their ethnicity, then race, and then answer the Office of Management and Budget (OMB) standard question "Hispanic/Latino: Yes/No."

With the transition to Epic, the category lists for both ethnicity and race remain largely the same, using pre-existing lists as a model. Training surrounding the collection of this data remains the same as well. When a patient asks why Mass General requests this data, registration staff are trained to explain that we collect this information to better serve our diverse patient population. Because self-identification is the gold standard for collecting data on race and ethnicity,[42] registrars are trained never to enter their perception of the patient's race or ethnicity. If a patient does not wish to provide this information, registrars select the value of "Declined." Patients rarely decline to answer these questions; only 3% declined to provide their race in calendar year 2017. If a patient's stated race or ethnicity is not an option available to registrars in the system, the patient is registered with a code of "Other," and additional information is entered in the free-text fields to communicate the person's self-reported race or ethnicity.

Registrars continue to collect data on patients' preferred languages with the question, "In what language do you prefer to discuss health-related concerns?" With the implementation of Epic, registrars now ask an additional question regarding language preferences: "In what language do you prefer to receive written materials?"

Similarly, the data collection around patient disabilities slightly expanded with the implementation of Epic. In addition to pre-existing values (Blind/Visual Impairment, Cognitive, Deaf/Hard of Hearing, Physical/Congenital, Multiple, Declined, None, and Unavailable), Mass General registrars are now able to document Speech Impairments and Special Requests. A free-text comment box accompanies the value entered. As the ambulatory scheduling system and patient placement system (IDX and AllScripts, respectively) moved to Epic as well, this data continues to remain integrated across the front-end to allow for proactive accommodations for inpatients, as well as outpatient practices.

All data collected at the patient's initial Mass General registration, including data on race, ethnicity, language, and disability, are confirmed during subsequent registration updates. The accuracy of these data has increased markedly in the last decade as a result of standardizing the methodology for objectively assessing race.

APPENDIX B

Data Sources and Dates Presented

Data/Measures	Source of Data/Measures	Dates Presented
Catchment Area Demographics	American Community Survey Data (2010 US Census database)	CY 2010, 2011–2016
Patient Population by Setting	EPIC, EPSI (MGH Billing)	CY 2017
Patient Distribution among Inpatient Services	EPIC, EPSI	CY 2017
Readmission Rates—all patients	Internal readmission database in D4Q	CY 2017
Readmission Rates—CMS populations	Internal readmission database in D4Q	7/2016–6/2018
National Hospital Quality Measures	Chart Reviews; D4Q, Quality Net, Vizient	CY 2015–2017
Patient Linkage PCOI Program Measures	Primary Care Operations Improvement Program (PCOI)	CY 2010–2016
HEDIS Quality Measures	PCOI	CY 2014–2016
Patient Experience: HCAHPS & CG-CAHPS	QDM (external system with patient satisfaction data)	CY 2015–2017
Pediatric Patient Experience: CG-CAHPS	QDM	CY 2015–2017
Caring for Patients with Limited English Proficiency	MGH Interpreter Services	FY 2017
Obstetrics/Gynecology Measures	Chart Reviews, D4Q, Vizient	CY 2015–2017
Department of Neurology Measures	Stroke Patient Registry	CY 2015–2017
Readmission Rates for LEP Patients	MGH Interpreter Services	7/2014–6/2018

Mass General Diversity and Inclusion Statement

Diversity is the richness of human differences. Inclusion is when everyone is valued, engaged, and feels connected. At Massachusetts General Hospital, we believe that because of diversity we will excel; through inclusion we will respect; focused on equity we will serve, heal, educate and innovate.

Because of diversity we will excel. We think broadly about diversity and everything that makes us unique. It is core to our mission. Our differences make the MGH a more interesting and distinctive environment in which to work and are an important means of providing the very best care to every one of our patients, regardless of race, ethnicity, gender, gender identity, religion, age, sexual orientation, disability, life experiences, geographic backgrounds, skills and talents among others. We will not excel without recognizing and appreciating everyone's perspectives.

Through inclusion we will respect. Together we work hard to make this hospital a diverse and inclusive place of healing. Encouraging a broad range of opinions, ideas and perspectives drives creativity, innovation and excellence. Our continued engagement in our nationally recognized initiatives and programs highlights our commitment to diversity and inclusion. But this ongoing work will not be complete until every employee, every patient, every family member, every visitor feels safe, respected, welcome, comfortable, supported and accepted within our walls.

Focused on equity we will serve, heal, educate and innovate. Our job is to improve health and save lives, regardless of what our patients or colleagues look like, where they come from, what they believe, or who they love. Issues of equity and justice are not separate but rather intertwined with patient care, education, research, and community health. Targeting inequality enhances the quality of care for all. We believe in treating our patients and each other with the dignity that every human being deserves.

Massachusetts General Hospital—strengthened by diversity, unified through inclusion, committed to equity.

Everyone is appreciated and valued here.

THE DISPARITIES SOLUTIONS CENTER
One Goal – High Quality Care for All

100 Cambridge Street, Suite 1600
Boston, MA 02114
mghdisparitiessolutions.org

MASSACHUSETTS GENERAL HOSPITAL
MASSACHUSETTS GENERAL PHYSICIANS ORGANIZATION

EDWARD P. LAWRENCE CENTER FOR QUALITY & SAFETY

55 Fruit Street
Boston, MA 02114
qualityandsafety.massgeneral.org