CENTER FOR HEALTH INFORMATION AND ANALYSIS

Primary Care in Massachusetts

Technical Appendix
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Primary Care Dashboard

TECHNICAL APPENDIX

Table of Contents

Context Measures

Adult Male Life Expectancy

Male Years of Life Remaining[1] by Race, Hispanic Ethnicity[2], and Gender, Massachusetts				
Year	**White, non-Hispanic Males**	**Black, non-Hispanic Males**	**Hispanic Males**	**All Males**
2019	78.1	77.9	81.5	78.5
2020	77.0	72.8	76.0	76.7

1. **Date:** 11/1/2022
2. **Data/Measurement and submission years:** Data was collected up to the year 2020 and was submitted in February 2022.
3. **Description of metric:** Male life expectancy at birth in years in Massachusetts.
    a. **Numerator & exclusions:** Life expectancy was calculated using the Greville Abridged Life Table Method. Parameters are estimated in each equation used to account for sex. An average probability of resident death for any given age group was estimated for the years of life remaining calculation by using the Piecewise Cubic Hermite Interpolating Polynomial (PCHIP) method. The formula used includes values indicating age, probability of dying, number surviving, number dying, person years lived, total number of person-years lived, and expectation of life.
    b. **Denominator & exclusions:** Population estimates gathered from census data with the 2019 bridged population file, MARS (Modified Age, Race/Ethnicity, and Sex) file.
    c. **Stratifier:** State (Massachusetts), Race and Hispanic Ethnicity, and Gender
    d. **Imputation method:** N/A
    e. **Weighting Scheme:** N/A
    f. **Risk Adjusted:** N/A
4. **Data source & status:** The Registry of Vital Records and Statistics, Massachusetts Department of Public Health, 2022. Table 3, 2019.
5. **Data cost:** Publicly available.
6. **Data release:** Data was collected up to the year 2020 and was submitted in February 2022.
7. **Validator & source:** The 2020 life expectancy for males at birth in Massachusetts is 76.4 years while life expectancy for males in Massachusetts at age 65 is 17.6 years. Source: National Vital Statistics Reports. U.S. State Life Tables, 2020 Volume 71, Number 2. Tables A and B.

[1]Years of life remaining were calculated by using the Greville Abridged Life Table Method.
[2]The population estimates used to stratify by race and Hispanic ethnicity were from the 2019 bridged population file, MARS (Modified Age, Race/Ethnicity, and Sex) file.

Note: Asian/Pacific Islander is not included on this table due to the instability of small numbers in these calculations

Adult Female Life Expectancy

Female Years of Life Remaining[1] by Race, Hispanic Ethnicity[2], and Gender, Massachusetts				
Year	**White, non-Hispanic Females**	**Black, non-Hispanic Females**	**Hispanic Females**	**All Females**
2019	83.2	84.4	88.2	83.5
2020	81.8	79.4	84.1	81.9

1. **Date:** 11/1/2022
2. **Data/Measurement and submission years:** Data was collected up to the year 2020 and was submitted in February 2022.
3. **Description of metric:** Female life expectancy at birth in years in Massachusetts.
    a. **Numerator & exclusions:** Life expectancy was calculated using the Greville Abridged Life Table Method. Parameters are estimated in each equation used to account for sex. An average probability of resident death for any given age group was estimated for the years of life remaining calculation by using the Piecewise Cubic Hermite Interpolating Polynomial (PCHIP) method. The formula used includes values indicating age, probability of dying, number surviving, number dying, person years lived, total number of person-years lived, and expectation of life.
    b. **Denominator & exclusions:** Population estimates gathered from census data with the 2019 bridged population file, MARS (Modified Age, Race/Ethnicity, and Sex) file.
    c. **Stratifier:** State (Massachusetts), Race and Hispanic Ethnicity, and Gender
    d. **Imputation method:** N/A
    e. **Weighting Scheme:** N/A
    f. **Risk Adjusted:** N/A
4. **Data source & status:** The Registry of Vital Records and Statistics, Massachusetts Department of Public Health, 2022. Table 3, 2019.
5. **Data cost:** Publicly available.
6. **Data release:** Data was collected up to the year 2020 and was submitted in February 2022.
7. **Validator & source:** The 2020 life expectancy for females at birth in Massachusetts is 81.5 years while life expectancy for females in Massachusetts at age 65 is 20.1 years. Source: National Vital Statistics Reports. U.S. State Life Tables, 2020 Volume 71, Number 2. Tables A and B.

[1]Years of life remaining were calculated by using the Greville Abridged Life Table Method.
[2]The population estimates used to stratify by race and Hispanic ethnicity were from the 2019 bridged population file, MARS (Modified Age, Race/Ethnicity, and Sex) file.

Note: Asian/Pacific Islander is not included on this table due to the instability of small numbers in these calculations

Infant Mortality

Year and Race/Ethnicity	Number of Infant Deaths	Mortality Rate[3]
2019 State Total[1]	**255**	**3.7**
White, non-Hispanic	108	2.7
Black, non-Hispanic	4	6.6
Hispanic	67	4.7
Asian, non-Hispanic	15	2.3
Other[2]	7	8.3
2020 State Total[1]	**263**	**4.0**
White, non-Hispanic	111	2.9
Black, non-Hispanic	51	7.3
Hispanic	61	4.3
Asian, non-Hispanic	13	2.0
Other[2]	12	15.3

1. **Date:** 11/1/2022
2. **Data/Measurement and submission years:** Data was collected from 2009 to 2020 and was submitted in February 2022.
3. **Description of metric:** Trends in Infant Mortality (less than one year of age) per 1,000 live births by Race and Hispanic Ethnicity, Massachusetts: 2009-2019
    a. **Numerator & exclusions:** Massachusetts resident newborn deaths under one year of age acquired from vital statistics.
    b. **Denominator & exclusions:** Population estimates of births gathered from census data with the 2019 and 2020 bridged population file, MARS (Modified Age, Race/Ethnicity, and Sex) file.
    c. **Stratifier:** Data stratified by state (Massachusetts) and race/ethnicity.
    d. **Imputation method:** N/A
    e. **Weighting Scheme**: N/A
    f. **Risk Adjusted:** N/A
4. **Data source & status:** The Registry of Vital Records and Statistics, Massachusetts Department of Public Health, 2022. Table 30, 2019.
5. **Data cost:** Publicly available.
6. **Data release:** Data was collected from 2009 to 2020 and was submitted in February 2022.
7. **Validator & Source:** March of Dimes reported 2017-2019 infant mortality average rates by race/ethnicity in Massachusetts. Hispanic: 5.0 per 1,000 live births, White: 2.8 per 1,000 births, Black: 7.4 per 1,000 births, Asian/Pacific Islander: 3.9 per 1,000 live births.

[1] Infant deaths with unknown race are included for total calculations.
[2] "Other" category includes American Indian and Other Races.
[3] All rates are expressed as per 1,000 live births.

Child Mortality

	Age Group 1-8	
Year	**# Deaths**	**Rate**
2019 Statewide Age Totals	**60**	**10.3**
White, non-Hispanic	33	9.7
Black, non-Hispanic	8	15.1
Hispanic	10	8.6
Asian/Pacific Islander, non-Hispanic	7	14.8
2020 Statewide Age Totals	**39**	**6.7**
White, non-Hispanic	15	4.7
Black, non-Hispanic	7	14.3
Hispanic	12	10.0
Asian/Pacific Islander non-Hispanic	3	*

1. **Date:** 11/8/2022
2. **Data/Measurement and submission years:** 2019 and 2020 data collection and submitted in 2022.
3. **Description of metric:** Number of deaths and age-specific mortality rates (per 100,000 residents) by race group and age group for Massachusetts and residents ages 1 to 8, Massachusetts residents, 2019 and 2020.
    a. **Numerator & exclusions:** Total deaths in each age group by race/ethnicity.
    b. **Denominator & exclusions:** Total population of Massachusetts residents by age group and race/ethnicity.
    c. **Stratifier:** Age group, race/ethnicity, and year.
    d. **Imputation method:** Complied by the Massachusetts Department of Health Registry of Vital Records and Statistics.
    e. **Weighting Scheme:** N/A
    f. **Risk Adjusted:** N/A
4. **Data source & status:** The Registry of Vital Records and Statistics, Massachusetts Department of Public Health, 2022.
5. **Data cost:** N/A
6. **Data release:** N/A
7. **Validator & source:** America's Health Rankings reported that the rate of child mortality from 2018-2020 in Massachusetts for ages 1 to 19 years old was 14.3 per 100,000 children.

Note: Rate is suppressed due to small numbers

Low Birth Weight

Year and Race/Ethnicity	Number of Babies with LBW[1]	Percent of Births[2]
2019 State Total	**5273**	**7.7**
White, non-Hispanic	2535	6.2
Black, non-Hispanic	800	11.2
Hispanic	1199	8.5
Asian, non-Hispanic	542	8.4
Other	71	8.6
Unknown	126	12.4
2020 State Total	**4897**	**7.4**
White, non-Hispanic	2374	5.8
Black, non-Hispanic	698	10.1
Hispanic	1148	8.2
Asian, non-Hispanic	518	8.6
Other	50	7.3
Unknown	109	10.6

1. **Date:** 11/1/2022
2. **Data/Measurement and submission years:** Data was collected up to 2020 and was submitted in February 2022.
3. **Description of metric:** Percentage of Massachusetts resident low birthweight newborns (<2500 grams) by race/ethnicity.
    a. **Numerator & exclusions:** Massachusetts resident births to newborns weighing less than 2,500 grams. Total percentages for LBW were calculated with only known birthweights.
    b. **Denominator & exclusions:** Population estimates were derived from calculations completed by the UMASS Donahue Institute (UMDI) and controlled to annual county level Census population estimates.
    c. **Stratifier:** Massachusetts, low birthweight newborns (<2500 grams), and race/ethnicity.
    d. **Imputation method:** N/A
    e. **Weighting Scheme:** N/A
    f. **Risk Adjusted:** N/A
4. **Data source & status:** The Registry of Vital Records and Statistics, Massachusetts Department of Public Health, 2022. Table 8, 2019.
5. **Data cost:** Publicly available.
6. **Data release:** Data released annually.
7. **Validator & source:** 7.4% of all live births in Massachusetts were to low birthweight infants in 2020 (Source: March of Dimes). According to America's Health Rankings 2019 Report on stratifying low birth weight by race, 6.6% of White non-Hispanic newborns had low birth weight, 11.9% of Black non-Hispanic newborns had low birth weight, 8.5% of Hispanic newborns had low birth weight, 8.4% of Asian newborns had low birth weight, and 8.2% of Multiracial newborns had low birth weight.

[1]LBW refers to Low Birth Weight or a birthweight <2,500 grams [2]Percentages are based on the table's column totals.

Note: Percentages for detailed birthweight rows ("<500" through "Unknown birthweight") are calculated based on births including those with unknown birthweight. Percentages for VLBW and LBW rows are calculated based on births with known birthweight only. Singleton and multiple births are included in all table totals.

Finance Measures

Primary Care Spending over All Medical Spending

2019
Commercial Full Claims (Behavioral Health: 6.1%; Primary Care: 7.9%; Behavioral Health & Primary Care: 14.0%; All Other Spending: 86.0%)
Medicaid (MCO/ACO-A) (Behavioral Health: 19.6%; Primary Care: 6.7%; Behavioral Health & Primary Care: 26.2%; All Other Spending: 73.8%)
Medicare Advantage (Behavioral Health: 1.8%; Primary Care: 5.2%; Behavioral Health & Primary Care: 7.0%; All Other Spending: 93.0%)

2020
Commercial Full Claims (Behavioral Health: 7.0%; Primary Care: 7.3%; Behavioral Health & Primary Care: 14.3%; All Other Spending: 85.7%)
Medicaid (MCO/ACO-A) (Behavioral Health: 20.8%; Primary Care: 6.5%; Behavioral Health & Primary Care: 27.4%; All Other Spending: 72.6%)
Medicare Advantage (Behavioral Health: 1.9%; Primary Care: 4.6%; Behavioral Health & Primary Care: 6.5%; All Other Spending: 93.5%)

Insurance Category	Year	Primary Care	
		Total Expenditures	% of Total Expenditures
Commercial Full Claim	2019	$1,084,473,782.67	7.9%
	2020	$957,221,198.97	7.3%
Medicaid MCO/ACO-A	2019	$270,180,913.46	6.7%
	2020	$272,243,187.08	6.5%
Medicare Advantage	2019	$152,758,642.14	5.2%
	2020	$135,673,326.06	4.6%

1. **Date:** 9/27/2022
2. **Data/Measurement and submission years:** Fiscal Year (FY) 2019 and FY 2020, data collected 2021.
3. **Description of metric:** Percentage of primary care spending over all medical spending by insurance category. Primary Care spending as a proportion of total spending is calculated using the Center for Health Information and Analysis's (CHIA) Primary Care and Behavioral Health (PCBH) data, which is collected by CHIA through submissions from payers. Insurance categories include Commercial Full, Medicaid (MCO/ACO-A) and Medicare Advantage.

In this data, Primary Care is defined by Current Procedural Terminology (CPT) codes, along with provider codes. Using these, Primary Care services were defined as:

- Care provided in any setting by a primary care provider in an outpatient or telehealth setting, or in a patient's home or nursing care setting;
- Payments made for preventative medicine services like exams, screenings, and counseling by a primary care provider;
- Payments made for professional services including Medicare enrollment visits, annual wellness visits and chronic disease care delivered by a primary care provider;
- Payments made for the administration injections, infusions and vaccines delivered by primary care providers;

- Payments made for routine obstetric care including OB/GYN evaluation and management services; and
- Non-Claims payments made for incentive programs, capitation, risk settlements, care management related to the provision of primary care services.

Primary Care spending is counted after Behavioral Health in order to prevent double-counting. If behavioral health services are provided by primary care providers or in a primary care setting, they were counted toward Behavioral Health expenditures and not primary care expenditures. Data from the 2020 PCBH data collection is provided below, broken out by insurance category.

a. **Numerator & exclusions:** Primary Care Expenditures.
b. **Denominator & exclusions:** Total Expenditures.
c. **Stratifier:** Insurance category.
d. **Imputation method:** N/A
e. **Weighting Scheme:** N/A
f. **Risk Adjusted:** N/A

4. **Data source & status:** CHIA.
5. **Data cost:** Publicly available.
6. **Data release:** 2019 data released in 2021 and 2020 data released in 2022.
7. **Validator & source:** The Primary Care Collaborative (PCC) released a state-level analysis on investment in Primary Care in 2019, that measured primary care investment in 29 states by narrow and broad definitions of Primary Care (as defined by the Robert Graham Center for Policy Studies in Family Medicine and Primary Care). Parameters for these two definitions along with other organizations' definitions of primary care are below:
   - **Robert Graham Center (narrow):** Family Medicine, General Medicine, Internal Medicine, Pediatrics, and Geriatrics
   - **Robert Graham Center (broad):** Family Medicine, General Medicine, Internal Medicine, Pediatrics, Geriatrics, Obstetrics & Gynecology, Nurse Practitioners/Physician Assistants, and Behavioral Health Services

The PCC utilized 2011-2016 data from the Medical Expenditure Panel Survey (MEPS), compiled by the Robert Graham Center. Data is available segmented by insurance types (commercial, Medicare, Medicaid/SCHIP, dual eligible, and uninsured).
Below are the results of the PCC's study listed by insurance category of the Primary Care investment rate for the narrow and broad definitions of Primary Care:

- **Narrow:** Private (5.7%); Public (3.4%); Uninsured (10.3%): Medicaid (5.2%); Medicare (3.4%); Dual (2.3%)
- **Broad:** Private (8.8%); Public (8.0%); Uninsured (19.6%): Medicaid (10.0%%); Medicare (5.7%); Dual (7.5%)

In addition to the PCC, the New England States Consortium Systems Organization (NESCSO) published a report in 2020 on Primary Care Payments. NESCSO compiled data from six states' (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont) All-Payer Claims Databases (APCD) and defined specifications for APCD data. A notable limitation of APCD data is that it does not include the self-insured market. These parameters were as shown in the table below. Non-claims payments were collected directly from payers. Total medical payments excluded retail pharmacy. Further, NESCSO used a narrow and broad definitions for primary care that were differentiated as follows; the narrow definition included Primary Care physicians but only included selected services, while the broad definition included Primary Care physicians and included all services.

Table 1. Providers & Service Definitions Included

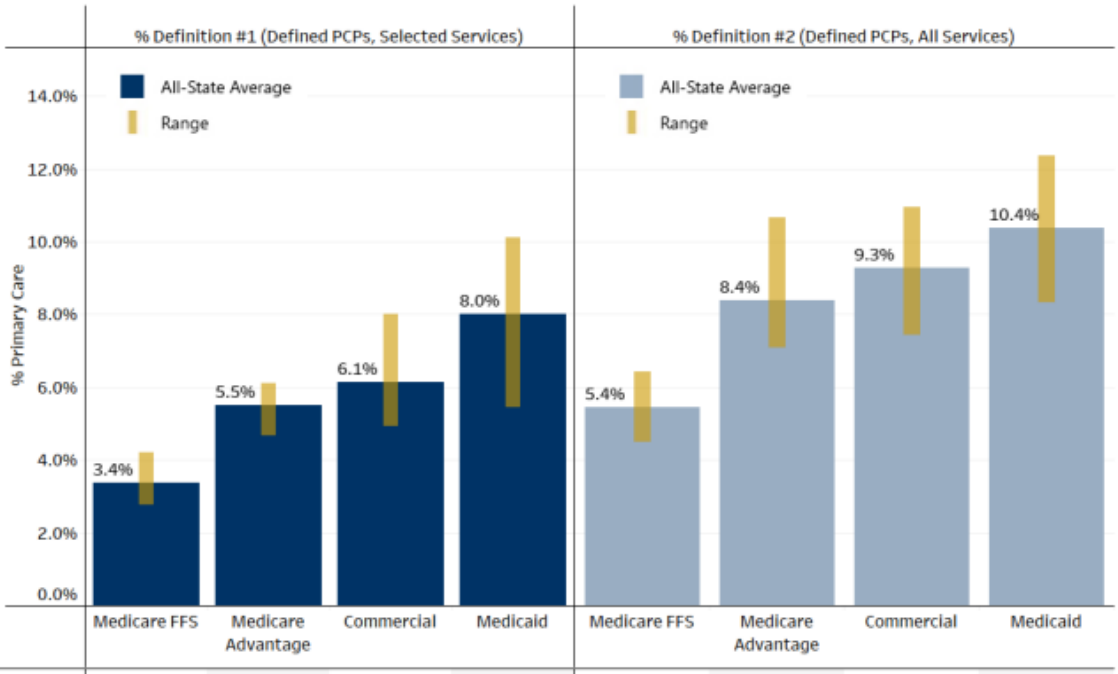
Definition	Description

Defined PCPs, Selected Services	• Selected claims payments for general practice, family medicine, pediatrics, internal medicine, nurse practitioner, physician assistant* • Excludes OB/GYN services • Definition #1 is narrower and service based
Defined PCPs, All Services	• All claims payments for general practice, family medicine, pediatrics, internal medicine, nurse practitioner, physician assistant* • Excludes OB/GYN services • Definition #2 is a broader measure that does not restrict on service codes
OB/GYNs, Selected OB/GYN Services	• All OB/GYN services payments for OB/GYN practitioners • Excludes all services provided by PCPs • Payments reported in Definition #3 can be added to definitions #1 or #2 as desired
Defined PCPs, Selected OB/GYN Services	• Selected OB/GYN services payments for general practice, family medicine, pediatrics, internal medicine, nurse practitioner, physician assistant* • Excludes all primary-care services and services provided by OB/GYNs • Payments reported in Definition #4 can be added to definitions #1 or #2 as desired

*Primary care also included taxonomy codes for Federally Qualified Health Centers, Rural Health Centers, clinics, Critical Access Hospitals, and rural hospitals. For these taxonomy codes, restrictions were always applied using revenue and procedure codes.

Below are the results from NESCSO assessment of the claims data submitted by states according to the 2020 report:

Figure 1. Primary Care Percentage of Total Medical Payments by Payer Type, 2018 *



	Medicare FFS	Medicare Advantage	Commercial	Medicaid	Medicare FFS	Medicare Advantage	Commercial	Medicaid
All-State Average	3.4%	5.5%	6.1%	8.0%	5.4%	8.4%	9.3%	10.4%
Lowest Value	2.8%	4.7%	4.9%	5.4%	4.5%	7.1%	7.4%	8.3%
Highest Value	4.2%	6.1%	8.0%	10.1%	6.4%	10.7%	11.0%	12.4%

* Massachusetts data for 2018 were not available. Commercial results for Massachusetts were for 2017, and Medicaid results were for 2016. Massachusetts did not report Medicare FFS or Medicare Advantage data. Connecticut's Medicaid APCD data was not sufficiently complete for inclusion in the analysis.

Managed Member Months Under and Alternative Payment Model (APM)

Summary: APM % of Spend by Insurance Category			
Insurance Category	**2018**	**2019**	**2020**
Commercial (Full+Partial)	41.8%	40.9%	40.8%
Medicaid (e.g., ACO, MCO)	67.4%	84.5%	87.8%
Medicare, Medicare Advantage	50.8%	50.4%	50.8%

1. **Date:** 8/30/2022
2. **Data/Measurement and submission years:** Data for each calendar year is collected 5-9 months after the end of the year, all data was published in March 2022.
3. **Description of metric:** The share of Massachusetts resident member months associated with a primary care provider whose care is paid for under an Alternative Payment Method (APM), including global contracts, limited budgets, bundled payments, or other non-fee for service-based payment arrangements. This measure captures the payment arrangement method for all care for members, not just primary care services. Additionally, this measure reflects the transaction of payments from a payer to a provider group.
    a. **Numerator & exclusions:** Sum of member months under an APM arrangement.
    b. **Denominator & exclusions:** Sum of all member months in the stratified population.
    c. **Stratifier:** Data can be stratified by insurance category (e.g., commercial, Medicare Advantage) and product type (e.g., Health Maintenance Organization (HMO), Preferred Provider Organization (PPO).
    d. **Imputation method:** N/A
    e. **Weighting Scheme:** N/A
    f. **Risk Adjusted:** N/A
4. **Data source & status:** The Center for Health Information and Analysis' (CHIA) Annual Report on the Performance of the Massachusetts Health Care System
5. **Data cost:** Publicly available.
6. **Data release:** Data is reported to CHIA annually in September for the most recent calendar year. Data is published as part of CHIA's Annual Report each spring.
7. **Validator & source:** N/A

Capacity Measures

Percentage of Primary Care Physicians

2018: 30.4%
2019-2020: 29.8%

1. Date: 8.23.2022
2. Data/Measurement and submission years: 2019-2020. Data is updated every two years. Data accessed 8/23/2022.
3. Description of metric: Percentage of Massachusetts-based adult primary care physicians.
    a. Numerator & exclusions: Total active primary care physicians. Physicians are counted as primary care physicians if their self-designated primary specialty is one of the following: family medicine/general practice, internal medicine, preventive medicine, internal medicine/pediatrics, pediatrics, or geriatric medicine.
    b. Denominator & exclusions: Total active physicians
    c. Stratifier: Massachusetts
    d. Imputation method: N/A
    e. Weighting Scheme: N/A
    f. Risk Adjusted: N/A
4. Data source & status: Massachusetts Physician Workforce Profile
5. Data release: Data is updated every two years.
6. Data cost: Publicly available.
7. Validator & source: N/A

Percentage of Primary Care Physicians Aged 60 or Older

2018: 31.8%
2019-2020: 33.7%

1. Date: 8/18/2022
2. Data/Measurement and submission years: 2019-2020. Data is updated every two years. Data accessed 8/18/2022.
3. Description of metric: Percentage of Massachusetts-based physicians who practice in primary care aged 60 or older.
    a. Numerator & exclusions: Total active primary care physicians aged 60 or older. Physicians are counted as primary care physicians if their self-designated primary specialty is one of the following: family medicine/general practice, internal medicine, preventive medicine, internal medicine/pediatrics, pediatrics, or geriatric medicine.
    b. Denominator & exclusions: Total active primary care physicians.
    c. Stratifier: Massachusetts
    d. Imputation method: N/A
    e. Weighting Scheme: N/A
    f. Risk Adjusted: N/A
4. Data source & status: Massachusetts Physician Workforce Profile
5. Data release: Data is updated every two years.
6. Data cost: Publicly available.
7. Validator & source: N/A

Percentage of Primary Care Physicians Leaving Primary Care

2018: Massachusetts: 3.0%; United States and Territories: 2.7%
2020: Massachusetts: 3.6%; United States and Territories: 3.3%

1. Date: 10/26/2022
2. Data/Measurement and submission years: 2018 and 2020. Data is updated every year. Data accessed 10/26/2022.
3. Description of metric: Percentage of primary care physicians leaving primary care in Massachusetts, displayed compared with the national rates.
    a. Numerator & exclusions: Total count of primary care physicians (PCPs) who have exited primary care. Primary care is defined as physicians with a specialty in family medicine, internal medicine, pediatrics, general practice, geriatrics and internal medicine-pediatrics. For each year, the AMA Masterfile was merged with the CMS file. Physicians with a primary care specialist who were hospitalists were reclassified as non-primary care. PCP includes those who in the previous year were a) in direct patient care and b) 75 years old or younger. An "Exit" from primary care is possible in three different ways: a) a transition from direct patient care to retired in the subsequent year, b) dropped from the AMA Masterfile in the subsequent year, or c) a transition from PCP to non-PCP in subsequent year (this mainly consists of hospitalist as well as PCPs who further specialize.
    b. Denominator & exclusions: Total count of PCPs.
    c. Stratifier: Massachusetts
    d. Imputation method: N/A
    e. Weighting Scheme: N/A
    f. Risk Adjusted: N/A
4. Data source & status: The Robert Graham Center derived this data from the AMA Masterfile 2012-2020; CMS Physicians and Other Suppliers, 2012-2020, to identify hospitalists.
5. Data release: Data is updated every year.
6. Data cost: N/A
7. Validator & source: N/A

Percentage of Primary Care Physicians per Population

2018: 114.6
2019-2020: 115.3

1. Date: 8/29/2022
2. Data/Measurement and submission years: 2019-2020. Data is updated every two years. Data accessed 8/29/2022.
3. Description of metric: Active Massachusetts-based primary care physicians per 100,000 Massachusetts residents.
    a. Numerator & exclusions: Active primary care physicians in Massachusetts.
    b. Denominator & exclusions: State population of Massachusetts (per 100,000).
    c. Stratifier: Massachusetts
    d. Imputation method: N/A
    e. Weighting Scheme: N/A
    f. Risk Adjusted: N/A
4. Data source & status: Massachusetts Physician Workforce Profile.
5. Data release: Data is updated every two years.
6. Data cost: Publicly available.
7. Validator & source: Area Health Resources Files. 2018-2019: 133 (numerator = primary care MDs in all counties; denominator = sum of population per county) = 9,143/6,902,149 = 133/100,000. Massachusetts Health Quality Partners' (MHQP) Massachusetts Provider Database (MPD) 2020 primary care provider providers = 6,396/6,892,503 = 93/100,000

Primary Care Nurse Practitioners per Population

2019: 45.2

1. Date: 11/14/2022
2. Data/Measurement and submission years: 2019; published May 6, 2020. Data accessed 11/14/2022.
3. Description of metric: Professionally active Nurse Practitioners (NPs) who practice as primary care practitioners (PCPs) per 100,000 Massachusetts residents.
    a. Numerator & exclusions: NPs who were professionally active in Massachusetts as of 2019 (6,200), divided in half (approximately half of NPs practice as PCPs) = 3,100.
    b. Denominator & exclusions: State population of Massachusetts in 2019 (per 100,000) = 6,863,560.
    c. Stratifier: Massachusetts
    d. Imputation method: N/A
    e. Weighting Scheme: N/A
    f. Risk Adjusted: N/A
4. Data source & status: Health Policy Commission (HPC) Policy Brief: Nurse Practitioner Workforce and Its Role in the Massachusetts Health Care Delivery System; MacroTrends for population data
5. Data release: 2019.
6. Data cost: Publicly available.
7. Validator & source: The HPC policy brief, Nurse Practitioner Workforce and Its Role in the Massachusetts Health Care Delivery System shared that there were 2,625 NPs who billed for any primary care service in 2017 and that this number is growing. AHRQ's report, The Number of Nurse Practitioners and Physician Assistants Practicing Primary Care in the United States also stated that approximately half of NPs practiced as PCPs in 2010.

Primary Care Physician Assistants per Population

2019: 9.2
2020: 9.5

1. Date: 8/29/2022
2. Data/Measurement and submission years: 2020. Data is updated annually. Data accessed 8/29/2022.
3. Description of metric: Physician Assistants who reside in Massachusetts and work in primary care per 100,000 Massachusetts residents.
    a. Numerator & exclusions: Certified physician assistants who reside in Massachusetts and work in primary care. Primary care includes Family Medicine/General Practice, Internal Medicine-General and Pediatrics-General.
    b. Denominator & exclusions: State population of Massachusetts (per 100,000).
    c. Stratifier: Massachusetts
    d. Imputation method: N/A
    e. Weighting Scheme: N/A
    f. Risk Adjusted: N/A
4. Data source & status: National Commission on Certification of Physician Assistants – Statistical Profile of Certified PAs by State; MacroTrends for population data
5. Data release: Data is updated annually.
6. Data cost: Publicly available.
7. Validator & source: N/A

Percentage of Massachusetts Medical School Graduates Entering Primary Care

2022: 23.6%

1. Date: 10/19/2022
2. Data/Measurement and submission years: 2022. Data is updated every year. Data accessed 10/19/2022.
3. Description of metric: Percentage of students graduating from Massachusetts medical schools who reported intent to go into primary care.
    a. Numerator & exclusions: Total count of students graduating from Massachusetts medical students (students from Harvard Medical School, Boston University Medical School, Tufts University School of Medicine, and UMass Chan Medical School) entering Primary Care. Primary care includes Pediatrics, Internal Medicine, Family Practice, Medicine-Primary, and Medicine-Pediatrics. Based on the article Contributions of US Medical Schools to Primary Care (2003-2014): Determining and Predicting Who Really Goes Into Primary Care only 30.3% of graduates from Internal Medicine, 61.1% of Medicine-Pediatrics, and 29.5% of Medicine-Primary end up practicing in primary care, and these predictive rates were used in our calculations. Note that not all students will be practicing in Massachusetts after graduation.
    b. Denominator & exclusions: Total count of students graduating from Massachusetts medical students (students from Harvard Medical School, Boston University Medical School, Tufts University School of Medicine, and UMass Chan Medical School).
    c. Stratifier: N/A
    d. Imputation method: N/A
    e. Weighting Scheme: N/A
    f. Risk Adjusted: N/A
4. Data source & status: Data was pulled from the medical school websites (Harvard Medical School, Boston University Medical School, Tufts University School of Medicine, and UMass Chan Medical School).
5. Data release: Data is updated every year.
6. Data cost: Publicly available.
7. Validator & source: Contributions of US Medical Schools to Primary Care (2003-2014): Determining and Predicting Who Really Goes Into Primary Care: national primary care output rate = 22.3%

Primary Care Physician Salary

Average Pediatrician salary: $197,800
Average Family Medicine Physician salary: $259,460
Range of Average Physician salaries (all): $183,500 to $351,310

1. Date: 10/18/2022
2. Data/Measurement and submission years: May 2021. Data accessed 10/18/2022.
3. Description of metric: Estimated average salary per year for a Family Medicine physician and Pediatrician in Massachusetts, displayed on the range of average physician salaries for all physicians (lowest average (General Internal Medicine: $183,500) and highest average (Radiologist: $351,310)).
    a. Numerator & exclusions: N/A
    b. Denominator & exclusions: N/A
    c. Stratifier: Massachusetts
    d. Imputation method: N/A
    e. Weighting Scheme: N/A
    f. Risk Adjusted: N/A
4. Data source & status: U.S. Bureau of Labor Statistics. May 2021 State Occupational Employment and Wage Estimates, MA, Healthcare practitioners. These occupational employment and wage estimates are calculated with data collected from employers in all industry sectors in metropolitan and nonmetropolitan areas in Massachusetts.
5. Data release: Data is updated annually.
6. Data cost: Publicly available.
7. Validator & source: Glassdoor is an American website where current and former employees anonymously review companies, and users submit salary information. Salary.com
    a. Glassdoor: How much does an Internal Medicine make in Massachusetts? – $212,364
    b. U.S. Bureau of Labor Statistics: General Internal Medicine salary: $183,500
    c. Glassdoor.com: How much does a Primary Care Provider make in Massachusetts? $207,755
    d. Glassdoor.com: How much does a Pediatrician make in Massachusetts? – $223,133
    e. U.S. Bureau of Labor Statistics: Radiologist salary: $351,310
    f. Salary.com: Radiologist Salary in the United States – $438,790

Performance - Access Measures

Primary Care Access (Adult, Commercial)

2019: 86.6 CI_Low= 86.4 ; CI_High= 86.9
2021: 83.2 CI_Low= 82.8 ; CI_High=83.7

1. **Date:** 12/19/2022
2. **Data/Measurement and submission years:** 2018 (2019); 2020 (2021)
3. **Description of metric:** The Primary Care Access Composite score (also known as the Organizational Access composite score) is a validated composite score on a 0-100 scale. It captures patient experiences of access to primary care services. Higher scores denote better access.

   The **2019 MHQP Patient Experience Survey was based on the CG-CAHPS 3.0** survey developed by the National Committee for Quality Assurance (NCQA) and the Agency for Healthcare Research and Quality (AHRQ). The 2019 adult Patient Experience Surveys (PES) had 39 items. The survey was fielded in the spring of 2019 and sampled 192,625 adult patients from 771 adult primary care practices statewide. Physicians with a primary specialty designation of Internal Medicine, Pediatrics, Family Medicine or General Medicine and practicing as primary care providers, and nurse practitioners and physician assistants practicing as primary care providers, were eligible for the survey. Providers also had to have a panel size of at least 20 eligible patients across participating health plans. Practices having at least three providers meeting these eligibility criteria were included the statewide survey. Using health plan claims visit data, each provider was classified as either "adult" or "child," based on the age of the majority of his or her patients in the sample pool (child=ages 0-17; adult=ages 18 and older). To ensure that only active patients of a provider were included, the survey instrument included initial questions that served to confirm that the patient considered the provider named on the survey to be their primary care provider; and the patient had at least one visit with that provider in the previous 6 months. Sample sizes were designed to provide information at the practice-site level. The survey pull was a standard random sampling of all eligible patients.

   To be eligible for the survey, patients met the following criteria: were currently enrolled in one of the participating commercial health plans; was a commercial member in an HMO, POS, or PPO health plan product; was age 18 and older to receive an adult survey; and was a patient of a Massachusetts primary care providers.

   Survey invitations were sent to patients by email, if a patient had a valid email address, that had links to online surveys in English, Chinese, Portuguese, Russian and Spanish. Non-respondents were sent mailings of a survey invitation with an English paper survey and an URL to access online surveys. The response rate for the 2019 adult survey was 21.8% and for the 2019 child survey was 15.6%.

   Survey item responses were coded to a 0 to 100 scale (Never=0; Sometimes=33.33; Usually=66.67; Always= 100.00) at the respondent level and composites scores were calculated as a simple average of the response values for each of the component questions. If fewer than half of the questions had valid responses for a given respondent, then the composite was considered missing. Respondent composite scores were averaged at the state level to calculate the state-level composite score. State-level composite scores were not case-mix adjusted.

2019 Organizational Access composite items	In the last 12 months, when you called this provider's office to get an appointment for **care you needed right away**, how often did you get an appointment as soon as you needed?
	In the last 12 months, when you made an appointment for a **check-up or routine care** with this provider, how often did you get an appointment as soon as you needed?
	In the last 12 months, when you called this provider's office during regular office hours, how often did you get an answer to your medical question that same day?

The 2021 MHQP Patient Experience Survey was based on the Clinician & Group Visit Survey 4.0 (beta) (CG-CAHPS Visit Survey) for adults and addressed multiple visit modes, including telehealth. The CG-CAHPS Visit Survey asked patients about their experiences with care at their most recent visit with an ambulatory care provider. It was used for synchronous visits – i.e., care that was delivered and received at the same time, in person, by phone, or by video. It was not used for care delivered through asynchronous methods, such as email or portal messages. The "beta" designation means that the instrument had not yet been field tested by the CAHPS Consortium or approved as a CAHPS survey. For the child PES instrument, MHQP adapted the adult 2021 PES instrument to a child version. MHQP maintained survey composites and items that were not included in the CG-CAHPS Visit Survey to maintain consistency across survey years. The 2021 adult and child PES instruments had 58 items and 72 items, respectively.

In previous years, MHQP used a sample frame of patients who had a primary care visit that occurred within a 12-month period. In 2021, they changed criteria. The 2021 sample frame included patients who had at least one primary care visit that occurred between September 1, 2020 through February 28, 2021. In addition, the lookback period was changed from a 12-month to 6-month. The survey was fielded from mid-June through mid-September 2021 and sampled 151,979 adult patients from 610 adult primary care practices statewide. Physicians with a primary specialty designation of Internal Medicine, Pediatrics, Family Medicine or General Medicine and practicing as primary care providers, and nurse practitioners and physician assistants practicing as primary care providers, were eligible for the survey. Providers must also have had a panel size of at least 20 eligible patients across the participating health plans. Practices having at least three providers meeting these criteria were included. Using health plan claims visit data, each provider was classified as either "adult" or "child," based on the age of the majority of his or her patients in the sample pool (child=ages 0-17; adult=ages 18 and older). To ensure that only active patients of a provider were included, the survey instrument included initial questions that served to confirm that the patient considered the provider named on the survey to be their primary care provider; and the patient had at least one visit with that provider in the previous 6 months. Sample sizes were designed to provide information at the practice-site level. The survey pull was a standard random sampling of all eligible patients.

To be eligible for the survey, patients met the following criteria: were currently enrolled in one of the participating commercial health plans; was a commercial member in an HMO, POS, or PPO health plan product; was age 18 and older to receive an adult survey; and was a patient of a Massachusetts primary care providers.

Survey invitations were sent to patients by email, if a patient had a valid email, that had links to online surveys in English, Chinese, Portuguese, Russian and Spanish. Non-respondents were sent mailings of a survey invitation with an English paper survey and an URL to access online surveys. The response rate to the 2021 adult survey was 17.0% and for the 2021 child survey was 13.5%.

Survey item responses were coded to a 0 to 100 scale (Never=0; Sometimes=33.33; Usually=66.67; Always= 100.00) at the respondent level and composites scores were calculated as a simple average of the

response values for each of the component questions. If fewer than half of the questions had valid responses for a given respondent, then the composite was considered missing. Respondent composite scores were averaged at the state level to calculate the state-level composite score. State-level composite scores were not case-mix adjusted.

2021 Organizational Access composite items	When you called this provider's office to get an appointment for **care you needed right away**, how often did you get an appointment as soon as you needed?
	When you made an appointment for a **check-up or routine care** with this provider, how often did you get an appointment as soon as you needed?
	When you called this provider's office during regular office hours, how often did you get an answer to your medical question that same day?

   a. **Numerator & exclusions:** N/A
   b. **Denominator & exclusions:** N/A
   c. **Stratifier:** N/A
   d. **Imputation method:** N/A
   e. **Weighting Scheme:** N/A
   f. **Risk Adjusted:** N/A

4. **Data source & status:** The data sources for the Primary Care Access composite (also known as the Organizational Access composite) are the 2019 and 2021 MHQP Massachusetts Patient Experience Surveys of commercially insured patients.
5. **Data cost:** No cost.
6. **Data release:** Data is collected annually and released annually, usually in the fall.
7. **Validator & source:** N/A

Primary Care Access (Child, Commercial)

2019: 93.4 CI_Low= 93.2 ; CI_High= 93.6
2021: 92.3 CI_Low= 91.9 ; CI_High= 92.6

1. **Date:** 12/19/2022
2. **Data/Measurement and submission years:**
    a. 2018 (2019)
    b. 2020 (2021)
3. **Description of metric:** The Primary Care Access Composite score (also known as the Organizational Access composite score) is a validated composite score on a 0-100 scale. It captures patient experiences of access to primary care services. Higher scores denote better access.

    The **2019 MHQP Patient Experience Survey was based on the CG-CAHPS 3.0** survey developed by the National Committee for Quality Assurance (NCQA) and the Agency for Healthcare Research and Quality (AHRQ). The 2019 child Patient Experience Surveys (PES) had 54 items. The survey was fielded in the spring of 2019 and sampled 116,223 pediatric patients from 315 pediatric primary care practices statewide. Physicians with a primary specialty designation of Internal Medicine, Pediatrics, Family Medicine or General Medicine and practicing as primary care providers, and nurse practitioners and physician assistants practicing as primary care providers, were eligible for the survey. Providers also had to have a panel size of at least 20 eligible patients across participating health plans. Practices having at least three providers meeting these eligibility criteria were included the statewide survey. Using health plan claims visit data, each provider was classified as either "adult" or "child," based on the age of the majority of his or her patients in the sample pool (child=ages 0-17; adult=ages 18 and older). To ensure that only active patients of a provider were included, the survey instrument included initial questions that served to confirm that the patient considered the provider named on the survey to be their child's primary provider (pediatric survey); and the patient had at least one visit with that provider in the previous 6 months. Sample sizes were designed to provide information at the practice-site level. The survey pull was a standard random sampling of all eligible patients.

    To be eligible for the survey, patients met the following criteria: were currently enrolled in one of the participating commercial health plans; was a commercial member in an HMO, POS, or PPO health plan product; was age 17 or younger to receive a pediatric survey; and was a patient of a Massachusetts primary care providers.

    Survey invitations were sent to patients by email, if a patient had a valid email address, that had links to online surveys in English, Chinese, Portuguese, Russian and Spanish. Non-respondents were sent mailings of a survey invitation with an English paper survey and an URL to access online surveys. The response rate for the 2019 child survey was 15.6%.

    Survey item responses were coded to a 0 to 100 scale (Never=0; Sometimes=33.33; Usually=66.67; Always= 100.00) at the respondent level and composites scores were calculated as a simple average of the response values for each of the component questions. If fewer than half of the questions had valid responses for a given respondent, then the composite was considered missing. Respondent composite scores were averaged at the state level to calculate the state-level composite score. State-level composite scores were not case-mix adjusted.

2019 Organizational Access composite items	In the last 12 months, when you called this provider's office for an appointment for care your child **needed right away**, how often did you get an appointment as soon as your child needed?

	In the last 12 months, when you made an appointment for a **check-up or routine care** for your child with this provider, how often did you get an appointment as soon as your child needed?
	In the last 12 months, when you called this provider's office during regular office hours, how often did you get an answer to your medical question that same day?

The 2021 MHQP Patient Experience Survey was based on the Clinician & Group Visit Survey 4.0 (beta) (CG-CAHPS Visit Survey) for adults and addressed multiple visit modes, including telehealth. The CG-CAHPS Visit Survey asked patients about their experiences with care at their most recent visit with an ambulatory care provider. It was used for synchronous visits – i.e., care that was delivered and received at the same time, in person, by phone, or by video. It was not used for care delivered through asynchronous methods, such as email or portal messages. The "beta" designation means that the instrument had not yet been field tested by the CAHPS Consortium or approved as a CAHPS survey. For the child PES instrument, MHQP adapted the adult 2021 PES instrument to a child version. MHQP maintained survey composites and items that were not included in the CG-CAHPS Visit Survey to maintain consistency across survey years. The 2021 child PES instruments had 72 items, respectively.

In previous years, MHQP used a sample frame of patients who had a primary care visit that occurred within a 12-month period. In 2021, they changed criteria. The 2021 sample frame included patients who had at least one primary care visit that occurred between September 1, 2020 through February 28, 2021. In addition, the lookback period was changed from a 12-month to 6-month. The survey was fielded from mid-June through mid-September 2021 and sampled 90,083 pediatric patients from 225 pediatric primary care practices statewide. Physicians with a primary specialty designation of Internal Medicine, Pediatrics, Family Medicine or General Medicine and practicing as primary care providers, and nurse practitioners and physician assistants practicing as primary care providers, were eligible for the survey. Providers must also have had a panel size of at least 20 eligible patients across the participating health plans. Practices having at least three providers meeting these criteria were included. Using health plan claims visit data, each provider was classified as either "adult" or "child," based on the age of the majority of his or her patients in the sample pool (child=ages 0-17; adult=ages 18 and older). To ensure that only active patients of a provider were included, the survey instrument included initial questions that served to confirm that the patient considered the provider named on the survey to be their child's primary provider (pediatric survey); and the patient had at least one visit with that provider in the previous 6 months. Sample sizes were designed to provide information at the practice-site level. The survey pull was a standard random sampling of all eligible patients.

To be eligible for the survey, patients met the following criteria: were currently enrolled in one of the participating commercial health plans; was a commercial member in an HMO, POS, or PPO health plan product; was age 17 or younger to receive a pediatric survey; and was a patient of a Massachusetts primary care providers.

Survey invitations were sent to patients by email, if a patient had a valid email, that had links to online surveys in English, Chinese, Portuguese, Russian and Spanish. Non-respondents were sent mailings of a survey invitation with an English paper survey and an URL to access online surveys. The response rate to the 2021 child survey was 13.5%.

Survey item responses were coded to a 0 to 100 scale (Never=0; Sometimes=33.33; Usually=66.67; Always= 100.00) at the respondent level and composites scores were calculated as a simple average of the response values for each of the component questions. If fewer than half of the questions had valid responses for a given respondent, then the composite was considered missing. Respondent composite

scores were averaged at the state level to calculate the state-level composite score. State-level composite scores were not case-mix adjusted.

2021 Organizational Access composite items	When you contacted this provider's office to get an appointment for care your child **needed right away**, how often did you get an appointment as soon as your child needed?
	When you made an appointment for a **check-up or routine care** for your child with this provider, how often did you get an appointment as soon as your child needed?
	When you called this provider's office during regular office hours, how often did you get an answer to your medical question that same day?

   a. **Numerator & exclusions:** N/A
   b. **Denominator & exclusions:** N/A
   c. **Stratifier:** N/A
   d. **Imputation method:** N/A
   e. **Weighting Scheme:** N/A
   f. **Risk Adjusted:** N/A

4. **Data source & status:** The data sources for the Primary Care Access composite (also known as the Organizational Access composite) are the 2019 and 2021 MHQP Massachusetts Patient Experience Surveys of commercially insured patients.
5. **Data cost:** No cost.
6. **Data release:** Data is collected annually and released annually, usually in the fall.
7. **Validator & source:** N/A

Primary Care Access (Adult, MassHealth)

2019: 80.3
2021: 78.1

1. **Date:** 12/21/2022
2. **Data/Measurement and submission years:**
    a. 2018 (2019)
    b. 2020 (2021)
3. **Description of metric:** The Primary Care Access Composite score (also known as the Organizational Access composite score) is a validated composite score on a 0-100 scale. It captures patient experiences of access to primary care services. Higher scores denote better access.

The 2019 and 2021 MassHealth Primary Care Member Experience Surveys for adult members (PC Adult MES) were based on the CG-CAHPS 3.0 survey developed by the National Committee for Quality Assurance (NCQA) and the Agency for Healthcare Research and Quality (AHRQ).

- The 2019 PC Adult MES had 42 items. The survey was fielded in January 2019 and sampled 66,879 adult members.
- The 2021 PC Adult MES had 57 items. The survey was fielded in April 2021 and sampled 85,819 adult members.

The survey sample was randomly selected from a MassHealth sample frame that contained MassHealth adult members (≥ 18 years old) who were eligible to complete the survey. Eligibility requirements were that the member be actively enrolled in MassHealth, be attributed to an ACO that participated in the MassHealth program and have at least one primary care visit in the last year. Sample sizes were designed to yield a minimum of 400 completed surveys at the ACO level. Survey invitations were sent to members by email, if a member had a valid email address on file with MassHealth. Email invitations had links to online surveys in English, Spanish, Portuguese, Chinese, Haitian Creole and Vietnamese for the 2019 surveys. For the 2021 surveys, online surveys were also available in Russian, Khmer and Arabic. Non-respondents were sent mailings of a survey invitation with an English paper survey and an URL to access online surveys. For members who were on file as being Spanish speakers, mailings also contained a Spanish survey. The response rates for the 2019 and 2021 adult surveys were 18.3% and 11.4%, respectively.

Survey item responses were coded to a 0 to 100 scale (Never=0; Sometimes=33.33; Usually=66.67; Always= 100.00) at the respondent level and composites scores were calculated as a simple average of the response values for each of the component questions. Respondent composite scores were averaged at the state level to calculate the state-level composite score. State-level composite scores were not case-mix adjusted.

	Question	Response options
2019 & 2021 Organizational Access composite items	When you called this provider's office for an appointment for care your child needed right away, how often did you get an appointment as soon as your child needed?	Never Sometimes Usually Always
	When you made an appointment for a check up or routine care for your child with this provider how often did you get an appointment as soon as your child needed?	
	When you called this provider's office during regular office hours, how often did you get an answer to your medical question that same day?	

a. **Numerator & exclusions:** N/A
b. **Denominator & exclusions:** N/A
c. **Stratifier:** N/A

    d. **Imputation method:** N/A
    e. **Weighting Scheme:** N/A
    f. **Risk Adjusted:** N/A
4. **Data source & status:** The data sources for the Primary Care Access composite score were the 2019 and 2021 MassHealth Adult Primary Care Member Experience Surveys.
5. **Data cost:** No cost.
6. **Data release:** Data is collected annually and released annually, usually in the fall.
7. **Validator & source:** N/A

Primary Care Access (Child, MassHealth)

2019: 85.8
2021: 84.2

1. **Date:** 12/21/2022
2. **Data/Measurement and submission years:**
    a. 2018 (2019)
    b. 2020 (2021)
3. **Description of metric:** The Primary Care Access composite Score (also known as the Organizational Access composite score) is a validated composite score on a 0-100 scale. It captures patient experiences of access to primary care services. Higher scores denote better access.

The 2019 and 2021 MassHealth Primary Care Member Experience Surveys for adult members (PC Adult MES) were based on the CG-CAHPS 3.0 survey developed by the National Committee for Quality Assurance (NCQA) and the Agency for Healthcare Research and Quality (AHRQ).

- The 2019 PC Adult MES had 42 items. The survey was fielded in January 2019 and sampled 66,879 adult members.
- The 2021 PC Adult MES had 57 items. The survey was fielded in April 2021 and sampled 85,819 adult members.

The survey sample was randomly selected from a MassHealth sample frame that contained MassHealth child members (<18 years old) who were eligible to complete the survey. Eligibility requirements were that the member be actively enrolled in MassHealth, be attributed to an ACO that participated in the MassHealth program and have at least one primary care (pediatric) visit in the last year. Sample sizes were designed to yield a minimum of 400 completed surveys at the ACO level. Survey invitations were sent to the parents or guardians of child members by mail. Mailings contained a survey invitation with an English survey and an URL to access online surveys. In 2019, online surveys were available in English, Spanish, Portuguese, Chinese, Haitian Creole and Vietnamese. For the 2021 surveys, online surveys were also available in Russian, Khmer and Arabic. For child members who were on file as being Spanish speakers, mailings also contained a Spanish survey. The response rates for the 2019 and 2021 adult surveys were 18.3% and 11.4%, respectively.
Survey item responses were coded to a 0 to 100 scale (Never=0; Sometimes=33.33; Usually=66.67; Always= 100.00) at the respondent level and composites scores were calculated as a simple average of the response values for each of the component questions. Respondent composite scores were averaged at the state level to calculate the state-level composite score. State-level composite scores were not case-mix adjusted.

	Question	
2019 & 2021 Organizational Access composite items	When you called this provider's office to get an appointment for care you needed right away, how often did you get an appointment as soon as you needed?	Never SometimesUsually Always
	When you made appointment for a check up or routine care with this provider, how often did you get an appointment as soon as you needed it?	
	When you called this provider's office during regular office hours, how often did you get an answer to your medical questions that same day?	

    a. **Numerator & exclusions:** N/A
    b. **Denominator & exclusions:** N/A
    c. **Stratifier:** N/A
    d. **Imputation method:** N/A
    e. **Weighting Scheme:** N/A
    f. **Risk Adjusted:** N/A
4. **Data source & status:** The data sources for the Primary Care Access composite score were the 2019 and 2021 MassHealth Adult Primary Care Member Experience Surveys.

5. **Data cost:** No cost.
6. **Data release:** Data is collected annually and released annually, usually in the fall.
7. **Validator & source:** N/A

Difficulty Obtaining Necessary Healthcare

2019: All Residents: 32.4%; White, non-Hispanic: 29.9%, Black, non-Hispanic: 36.2%, Asian, non-Hispanic: N/A[1]; Other or Multiple Races, non-Hispanic[1]: 36.8%; Hispanic or Latino: 41.4%
2021: All Residents: 33.9%; White, non-Hispanic: 32.7%, Black, non-Hispanic: 33.1%, Asian, non-Hispanic: 36.2%; Other or Multiple Races, non-Hispanic[1]: 36.3%; Hispanic or Latino: 39.0%

1. Date: 10.10.2022
2. Data/Measurement and submission years: 2019 and 2021.
3. Description of metric: Percent of Massachusetts residents who reported that they had difficulties accessing care in the past 12 months, defined in 2019 as the resident reporting any of the following difficulties: unable to get an appointment with doctor's office or clinic as soon as needed; unable to get an appointment with a specialist as soon as needed; doctor's office or clinic not accepting new patients; doctor's office or clinic not accepting insurance type. In 2021, this measure was defined as reporting any of the above difficulties or any of the following additional difficulties: unable to get an appointment due to transportation issues; unable to get an appointment due to a lack of childcare for children at home; and unable to get an appointment due to language barriers or a lack of interpreter services. For more information, please see 2021 Massachusetts Health Insurance Survey (MHIS) Methodology Report.
    a. Numerator & exclusions: Non-Institutionalized Massachusetts residents responding that they had any difficulties accessing care in the past 12 months.
    b. Denominator & exclusions: Non-institutionalized Massachusetts residents.
    c. Imputation Method: Missing values for key demographic variables for the target and target's household members replaced through hot-deck imputation procedures.
    d. Weighting Scheme: The survey data were weighted to adjust for differential sampling probabilities, to reduce biases due to differences between respondents and nonrespondents and to address gaps in coverage in the survey frame. Overall, the procedure executed for this study follows a two-step procedure which is to first correct for any disproportionate probabilities of selection (base weighting), such as oversampling based on targeted household characteristics, and then to balance the sample to match official statistics for persons living in Massachusetts on metrics such as age and gender (post-stratification weighting). In developing weights for the MHIS, the survey data were weighted first at the household level and then at the target-person level.
    e. Imputation Method: Missing values for key demographic variables for the target and target's household members and missing values for analytic variables used in calculation of final metric replaced through hot-deck imputation procedures.
    f. Risk Adjusted: N/A
4. Data source & status: CHIA (July 2022). Findings from the 2021 Massachusetts Health Insurance Survey and Findings from the 2019 Massachusetts Health Insurance Survey.
5. Data release: Data is updated every two years.
6. Data cost: Publicly available.
7. Validator & Source: N/A

[1]This category was not included in the 2019 MHIS survey as a response option. "Other or Multiple Races, non-Hispanic" in 2019 and 2021 are not comparable because this category includes those who identify as "Asian, Non-Hispanic" in 2019 but not 2021.

Performance - Care Measures

Colorectal Cancer Screening

2018: 80.2%
2020: 74.6%

1. Date: 8/18/2022
2. Data/Measurement and submission years: Healthcare Effectiveness Data and Information Set (HEDIS®) measurement years 2018 and 2020.
3. Description of metric: This measure assesses the percentage of members 50–75 years of age who had an appropriate screening for colorectal cancer. Data reflects HEDIS® specifications for colorectal cancer screening in measurement years 2018 and 2020.
    a. Numerator & exclusions: Commercially insured members, 51-75 years of age as of December 31 of the measurement year, enrolled in HMO and Point of Service (excluding Marketplace) products in participating health plans (AllWays Health Partners, Blue Cross Blue Shield of Massachusetts, Fallon Community Health Plan, Harvard Pilgrim Health Care, Health New England, and Tufts Health Plan) who received one or more screenings for colorectal cancer during the measurement year. Members receiving palliative care and members 66 years of age with frailty and advanced illness were excluded from both the numerator and denominator of the measure.
    b. Denominator & exclusions: Commercially insured members, 51-75 years of age as of December 31 of the measurement year, enrolled in HMO and Point of Service (excluding Marketplace) products in participating health plans (AllWays Health Partners, Blue Cross Blue Shield of Massachusetts, Fallon Community Health Plan, Harvard Pilgrim Health Care, Health New England, and Tufts Health Plan).
    c. Stratifier: N/A
    d. Weighting Scheme: NCQA permits health plans to calculate this measure using either administrative data only, or administrative data combined with medical record review (Hybrid Method). If a health plan chose to report eligible measures to NCQA using the Hybrid Method, the health plan reported the rate for their sample population based on Administrative Data Method and the rate based on the Hybrid Method (combination of administrative data and medical record review data) to MHQP. This enabled MHQP to calculate a "chart adjustment factor," which represents the increase in a plan's measured rate after medical record review (i.e., the Hybrid Method rate minus the Administrative Data Method only rate). MHQP adjusted the rates that were obtained for the health plan's entire HEDIS®-eligible population using the Administrative Data Method by applying the respective chart adjustment factors to each affected measure for the provider site, medical group, or physician network.
    e. Imputation method: N/A
    f. Risk Adjusted: N/A
4. Data source & status: CHIA (July 2022). A Focus on Provider Quality: Selected Clinical Measures, 2018 and 2020.
5. Data cost: Publicly available.
6. Data release: Data released biennially.
7. Validator & source: American Cancer Society, Colorectal Cancer Facts and Figures 2020-2022: Massachusetts' Colorectal Cancer Screening rates for adults aged 50-75 were 77% based on Behavioral Risk Factor Surveillance System (BRFSS) data. Screening includes blood stool test, sigmoidoscopy, or colonoscopy in the past 1, 5, and 10 years, respectively.

Breast Cancer Screening

2018: 85.2%
2020: 81.7%

1. Date: 8/22/2022
2. Data/Measurement and submission years: Healthcare Effectiveness Data and Information Set (HEDIS®) measurement years 2018 and 2020
3. Description of metric: This measure assesses the percentage of women 50–74 years of age who had a mammogram to screen for breast cancer. Data reflects HEDIS® specifications for breast cancer screening in measurement years 2018 and 2020.
    a. Numerator & exclusions: Commercially insured women, 52–74 years as of December 31 of the measurement year, enrolled in HMO and Point of Service (excluding Marketplace) products in participating health plans (AllWays Health Partners, Blue Cross Blue Shield of Massachusetts, Fallon Community Health Plan, Harvard Pilgrim Health Care, Health New England, and Tufts Health Plan) that received one or more mammograms to screen for breast cancer any time on or between October 1 two years prior to the measurement year and December 31 of the measurement year. Exclusions include individuals receiving palliative care.
    b. Denominator & exclusions: Commercially insured women, 52–74 years as of December 31 of the measurement year, enrolled in HMO and Point of Service (excluding Marketplace) products in participating health plans (AllWays Health Partners, Blue Cross Blue Shield of Massachusetts, Fallon Community Health Plan, Harvard Pilgrim Health Care, Health New England, and Tufts Health Plan). Exclusions include individuals receiving palliative care.
    c. Stratifier: N/A
    d. Weighting Scheme: N/A
    e. Imputation method: N/A
    f. Risk Adjusted: N/A
4. Data source & status: CHIA (July 2022). A Focus on Provider Quality: Selected Clinical Measures, 2018 and 2020.
5. Data cost: Publicly available.
6. Data release: Data released biennially.
7. Validator & source: Breast Cancer Facts and Figures, American Cancer Society, Tables 5 Screening rates by age (p21, uses NHIS data) and 6 Screening rates by State (p22, uses BRFSS data). For women aged 50-74, 86% received mammograms in 2016.

Cervical Cancer Screening

2018: 86.6%
2020: 85.2%

1. Date: 8/22/2022
2. Data/Measurement and submission years: Healthcare Effectiveness Data and Information Set (HEDIS®) measurement years 2018 and 2020.
3. Description of metric: This measure assesses the percentage of women 21–64 years of age who were screened for cervical cancer. Data reflects HEDIS® specifications for cervical cancer screening in measurement years 2018 and 2020.
    a. Numerator & exclusions: Commercially insured women enrollees, 24–64 years of age as of December 31 of the measurement year, in HMO and Point of Service (excluding Marketplace) products in participating health plans (AllWays Health Partners, Blue Cross Blue Shield of Massachusetts, Fallon Community Health Plan, Harvard Pilgrim Health Care, Health New England, and Tufts Health Plan) who were screened for cervical cancer during the measurement year or two years prior to the measurement year.
    b. Denominator & exclusions: Commercially insured women enrollees, 24–64 years of age as of December 31 of the measurement year, in HMO and Point of Service (excluding Marketplace) products in participating health plans (AllWays Health Partners, Blue Cross Blue Shield of Massachusetts, Fallon Community Health Plan, Harvard Pilgrim Health Care, Health New England, and Tufts Health Plan). Exclusions include individuals receiving hospice care.
    c. Stratifier: N/A
    d. Weighting Scheme: N/A
    e. Imputation method: N/A
    f. Risk Adjusted: N/A
4. Data source & status: CHIA (July 2022). A Focus on Provider Quality: Selected Clinical Measures, 2018 and 2020.
5. Data cost: Publicly available from CHIA
6. Data release: Data released biennially by CHIA
7. Validator & source: Based on the NHIS survey, Healthy People 2023 reported that, nationally, 80.5% of females aged 21-65 years received a cervical cancer screening based on the most recent guidelines in 2018.

Well-Child Visits in the First 30 Months of Life: 0-15 Months

2018: 94.7%
2020: 93.6%

1. Date: 8/22/2022
2. Data/Measurement and submission years: Healthcare Effectiveness Data and Information Set (HEDIS®) measurement years 2018 and 2020.
3. Description of metric: This measure assesses the percentage of children who had six or more well-child visits on or before their 15-month birthday. Data reflects HEDIS® specifications for well child visits in measurement years 2018 and 2020.
    a. Numerator & exclusions: Commercially insured enrollees who turned 15 months old during the measurement year enrolled in HMO and Point of Service (excluding Marketplace) products in participating health plans (AllWays Health Partners, Blue Cross Blue Shield of Massachusetts, Fallon Community Health Plan, Harvard Pilgrim Health Care, Health New England, and Tufts Health Plan), who had six or more well-child visits on or before their 15-month birthday. The visits must be with a primary care provider (PCP), but the PCP does not need to be the practitioner assigned to the child.
    b. Denominator & exclusions: Commercially insured enrollees who turned 15 months old during the measurement year and were enrolled in HMO and Point of Service (excluding Marketplace) products in participating health plans (AllWays Health Partners, Blue Cross Blue Shield of Massachusetts, Fallon Community Health Plan, Harvard Pilgrim Health Care, Health New England, and Tufts Health Plan). Exclusions include individuals receiving hospice care.
    c. Weighting Scheme: N/A
    d. Imputation method: N/A
    e. Risk Adjusted: N/A
4. Data source & status: CHIA (July 2022). A Focus on Provider Quality: Selected Clinical Measures, 2018 and 2020.
5. Data cost: Publicly available.
6. Data release: Data released biennially.
7. Validator & source: 97.2% of children <2 years old received a well-child visit in the past 2 years according to the National Survey of Children's Health, conducted by US HHS HRSA MCHB in 2019 2020 (Published by United Heath Foundation)
    a. Census has SAS and STATA data files for deeper analysis
    b. More information about the survey

Childhood MMR Immunization

2018: 93.2%
2020: 91.3%

1. Date: 8/18/2022
2. Data/Measurement and submission years: Healthcare Effectiveness Data and Information Set (HEDIS®) measurement years 2018 and 2020.
3. Description of metric: This measure assesses the percentage of children who turned 2 years old during the measurement year and who had received one measles, mumps, and rubella (MMR) vaccination on or before 2 years of age. Data reflects HEDIS® specifications for MMR vaccination in measurement years 2018 and 2020.
    a. Numerator & exclusions: Commercially insured members, at least 2 years of age as of December 31 of the measurement year, enrolled in HMO and Point of Service (excluding Marketplace) products in participating health plans (AllWays Health Partners, Blue Cross Blue Shield of Massachusetts, Fallon Community Health Plan, Harvard Pilgrim Health Care, Health New England, and Tufts Health Plan) who received the MMR vaccination on or before their second birthday
    b. Denominator & exclusions: Commercially insured members, at least 2 years of age as of December 31 of the measurement year, enrolled in HMO and Point of Service (excluding Marketplace) products in participating health plans (AllWays Health Partners, Blue Cross Blue Shield of Massachusetts, Fallon Community Health Plan, Harvard Pilgrim Health Care, Health New England, and Tufts Health Plan)
    c. Stratifier: N/A
    d. Weighting Scheme: NCQA permits health plans to calculate this measure using either administrative data only, or administrative data combined with medical record review (Hybrid Method). If a health plan chose to report eligible measures to NCQA using the Hybrid Method, the health plan reported the rate for their sample population based on Administrative Data Method and the rate based on the Hybrid Method (combination of administrative data and medical record review data) to MHQP. This enabled MHQP to calculate a "chart adjustment factor," which represents the increase in a plan's measured rate after medical record review (i.e., the Hybrid Method rate minus the Administrative Data Method only rate). MHQP adjusted the rates that were obtained for the health plan's entire HEDIS®-eligible population using the Administrative Data Method by applying the respective chart adjustment factors to each affected measure for the provider site, medical group, or physician network.
    e. Imputation method: N/A
    f. Risk Adjusted: N/A
4. Data source & status: CHIA (July 2022). A Focus on Provider Quality: Selected Clinical Measures, 2018 and 2020.
5. Data cost: Publicly available.
6. Data release: Data released biennially.
7. Validator & source: Nationally, 90.8% of children aged 24 months have 1+ doses of the MMR vaccine (2020-2021 data, CDC table VaxCh)

Adult Influenza Vaccinations

2018-2019: All Residents: 53.5%; Black, non-Hispanic: 58.7%; Hispanic: 62.0%; Other or Multiple Races, non-Hispanic: 58.2%; White, non-Hispanic: 58.7%
2020-2021: All Residents: 62.4%; Black, non-Hispanic: 56.8%; Hispanic: 59.1%; Other or Multiple Races, non-Hispanic: 64.9%; White, non-Hispanic: 69.6%

1. Date: 8/11/2022
2. Data/Measurement and submission years: 2018-2019 influenza season (September 2018 – June 2019); 2020 – 2021 influenza season (September 2020 – June 2021)
3. Description of metric: Estimated proportion of Massachusetts adults (18+) that received the seasonal influenza vaccination.
    1. Numerator & exclusions: Respondents who did not have either a yes or no response to the question on whether they received flu vaccination in the past 12 months were excluded from the analysis.
    2. Denominator & exclusions: N/A
    3. Stratifier: Massachusetts; adults ≥ 18; race/ethnicity (based on self-report)
    4. Weighting Scheme: Flu vaccination coverage estimates from the Behavioral Risk Factor Surveillance System (BRFSS) were calculated using Kaplan-Meier survival analysis using month of reported flu vaccination to determine cumulative flu vaccination coverage. The coverage estimate weighted percentages by the U.S. population.
    5. Imputation method: Month and year of vaccination were imputed for respondents with missing month and year of vaccination date.
    6. Risk Adjusted: N/A
4. Data source & status: Centers for Disease Control and Prevention. Flu Vaccination Coverage by Race/Ethnicity, Adults 18 years and older, United States Behavioral Risk Factor Surveillance System (BRFSS), 2020-21 Season
5. Data cost: Publicly available.
6. Data release: Data updated annually.
7. Validator & source: 2020 HEDIS, adults 18+ that received flu vaccination: 57%.

Usual Source of Care

2019: All Residents: 90.6%; White, non-Hispanic: 91.6%, Black, non-Hispanic: 91.0%, Asian, non-Hispanic: N/A[1]; Other or Multiple Races, non-Hispanic[1]: 93.3%; Hispanic or Latino: 81.8%
2021: All Residents: 88.1%; White, non-Hispanic: 90.8%, Black, non-Hispanic: 81.2%, Asian, non-Hispanic: 82.1; Other or Multiple Races, non-Hispanic[1]: 83.1%; Hispanic or Latino: 83.1%

1. Date: 9/23/2022
2. Data/Measurement and submission years: 2019 and 2021.
3. Description of metric: Percent of Massachusetts residents who reported that they had a place to which they usually go when they are sick or need advice about their health other than the emergency department. For more information, please see 2021 Massachusetts Health Insurance Survey (MHIS) Methodology Report.
    a. Numerator & exclusions: Non-institutionalized Massachusetts residents responding that they had a usual source of care, excluding the emergency department.
    b. Denominator & exclusions: Non-institutionalized Massachusetts residents
    c. Weighting Scheme: The survey data were weighted to adjust for differential sampling probabilities, to reduce biases due to differences between respondents and nonrespondents and to address gaps in coverage in the survey frame. Overall, the procedure executed for this study follows a two-step procedure which is to first correct for any disproportionate probabilities of selection (base weighting), such as oversampling based on targeted household characteristics, and then to balance the sample to match official statistics for persons living in Massachusetts on metrics such as age and gender (post-stratification weighting). In developing weights for the MHIS, the survey data were weighted first at the household level and then at the target-person level.
    d. Imputation method: Missing values for key demographic variables for the target and target's household members and missing values for analytic variables used in calculation of final metric replaced through hot-deck imputation procedures.
    e. Risk Adjusted: N/A
4. Data source & status: CHIA (July 2022). Findings from the 2021 Massachusetts Health Insurance Survey and Findings from the 2019 Massachusetts Health Insurance Survey.
5. Data release: Data is updated every two years.
6. Data cost: Publicly available.
7. Validator & source: Nationally, 87.6% of residents reported a usual place to go for medical care based on estimates from the 2018 National Health Interview Survey.

[1] This category was not included in the 2019 MHIS survey as a response option. "Other or Multiple Races, non-Hispanic" in 2019 and 2021 are not comparable because this category includes those who identify as "Asian, Non-Hispanic" in 2019 but not 2021.

Preventative Care Visit

2019: All Residents: 76.9%; White, non-Hispanic: 77.4%, Black, non-Hispanic: 77.9%, Asian, non-Hispanic: N/A[1]; Other or Multiple Races, non-Hispanic[1]: 77.8%; Hispanic or Latino: 72.3%
2021: All Residents: 77.8%; White, non-Hispanic: 81.0%, Black, non-Hispanic: 70.3%, Asian, non-Hispanic: 73.7; Other or Multiple Races, non-Hispanic[1]: 85.1%; Hispanic or Latino: 63.8%

1. Date: 10/10/2022
2. Data/Measurement and submission years: 2019 and 2021.
3. Description of metric: Percent of Massachusetts residents who reported that they received care from a general doctor, nurse practitioner or physician assistant in the past 12 months for a check-up, physical examination or for other preventive care. For more information, please see 2021 Massachusetts Health Insurance Survey (MHIS) Methodology Report.
    a. Numerator & exclusions: Non-Institutionalized Massachusetts residents reporting that they had a visit to a general doctor, nurse practitioner, physician's assistant, or midwife for preventive care in the past 12 months.
    b. Denominator & exclusions: Non-institutionalized Massachusetts residents
    c. Imputation Method: Missing values for key demographic variables for the target and target's household members replaced through hot-deck imputation procedures.
    d. Weighting Scheme: The survey data were weighted to adjust for differential sampling probabilities, to reduce biases due to differences between respondents and nonrespondents and to address gaps in coverage in the survey frame. Overall, the procedure executed for this study follows a two-step procedure which is to first correct for any disproportionate probabilities of selection (base weighting), such as oversampling based on targeted household characteristics, and then to balance the sample to match official statistics for persons living in Massachusetts on metrics such as age and gender (post-stratification weighting). In developing weights for the MHIS, the survey data were weighted first at the household level and then at the target-person level.
    e. Imputation Method: Missing values for key demographic variables for the target and target's household members and missing values for analytic variables used in calculation of final metric replaced through hot-deck imputation procedures.
    f. Risk Adjusted: N/A
4. Data source & status: CHIA (July 2022). Findings from the 2021 Massachusetts Health Insurance Survey and Findings from the 2019 Massachusetts Health Insurance Survey.
5. Data release: Data is updated every two years.
6. Data cost: Publicly available.
7. Validator & Source: Nationally, 83.1% of adult (18+) residents reported that they had a doctor visit within the past 12 months based on estimates from 2022. Source: National Health Interview Survey.

[1]This category was not included in the 2019 MHIS survey as a response option. "Other or Multiple Races, non-Hispanic" in 2019 and 2021 are not comparable because this category includes those who identify as "Asian, Non-Hispanic" in 2019 but not 2021.

Avoidable Emergency Department Use

2019: All residents: 34.1%; White, non-Hispanic: 29.0%; Black, non-Hispanic: 32.9%; Asian, non-Hispanic: N/A[1]; Other/multiple races, non-Hispanic[1]: 39.9%; Hispanic: 48.9%
2021: All residents: 34.6%; White, non-Hispanic: 30.4%; Black, non-Hispanic: 52.4%; Asian, non-Hispanic: N/A; Other/multiple races, non-Hispanic[1]: N/A%; Hispanic: 39.9%

1. Date: 9/13/2022
2. Data/Measurement and submission years: 2019 and 2021 Massachusetts Health Insurance Survey (MHIS)
3. Description of metric: Among residents with at least one Emergency Department (ED) visit in the past 12 months, percent who reported that their most recent ED visit could have been treated by a general doctor if one had been available, by age group and race/ethnicity, 2019 and 2021. For more information, please see the 2021 Massachusetts Health Insurance Survey Methodology Report.
    a. Numerator & exclusions: Massachusetts residents with an ED visit over the past 12 months who reported that their most recent ED visit could have been treated by a general doctor if one had been available
    b. Denominator & exclusions: Massachusetts residents with an ED visit over the past 12 months
    c. Weighting Scheme: The survey data were weighted to adjust for differential sampling probabilities, to reduce biases due to differences between respondents and nonrespondents (nonresponse bias), and to address gaps in coverage in the survey frame (coverage bias). Overall, the procedure executed for this study follows a two-step procedure which is to first correct for any disproportionate probabilities of selection (base weighting), such as oversampling based on targeted household characteristics, and then to balance the sample to match official statistics for persons living in Massachusetts on metrics such as age and gender (post-stratification weighting). In developing weights for the MHIS, the survey data were weighted first at the household level and then at the target-person level.
    d. Imputation method: Missing values for key demographic variables for the target and target's household members replaced through hot-deck imputation procedures.
    e. Risk Adjusted: N/A
4. Data source & status: CHIA (July 2022). Findings from the 2021 Massachusetts Health Insurance Survey and Findings from the 2019 Massachusetts Health Insurance Survey.
5. Data cost: Publicly available.
6. Data release: Data released biennially.
7. Validator & source: Massachusetts Health Policy Commission (May 2017). HPC Datapoints: Avoidable Emergency Department Use in Massachusetts. Finding: "42% of all ED visits in Massachusetts in 2015 were avoidable, a share that has remained constant since 2011."

[1] This category was not included in the 2019 MHIS survey as a response option. "Other or Multiple Races, non-Hispanic" in 2019 and 2021 are not comparable because this category includes those who identify as "Asian, Non-Hispanic" in 2019 but not 2021.

Patient-Provider Communication (Adult, Commercial)

2019: 94.7; CI_Low= 94.6; CI_High=94.8
2021: 96.4; CI_Low= 96.3; CI_High=96.6

1. **Date:** 8/4/2022
2. **Measurement years (fielding/submission years):** 2018 (2019); 2020 (2021)
3. **Description of metric:** The Communication Composite score is a validated composite score on a 0-100 scale that is derived from 4 survey items. It captures patient experiences of patient-provider communication in primary care visits. Higher scores denote better communication.

The **2019 MHQP Patient Experience Survey was based on the CG-CAHPS 3.0** survey developed by the National Committee for Quality Assurance (NCQA) and the Agency for Healthcare Research and Quality (AHRQ). The 2019 adult Patient Experience Surveys (PES) had 39 items. The survey was fielded in the spring of 2019 and sampled 192,625 adult patients from 771 adult primary care practices statewide. Physicians with a primary specialty designation of Internal Medicine, Pediatrics, Family Medicine or General Medicine and practicing as primary care providers, and nurse practitioners and physician assistants practicing as primary care providers, were eligible for the survey. Providers also had to have a panel size of at least 20 eligible patients across participating health plans. Practices having at least three providers meeting these eligibility criteria were included the statewide survey. Using health plan claims visit data, each provider was classified as either "adult" or "child," based on the age of the majority of his or her patients in the sample pool (child=ages 0-17; adult=ages 18 and older). To ensure that only active patients of a provider were included, the survey instrument included initial questions that served to confirm that the patient considered the provider named on the survey to be their primary care provider; and the patient had at least one visit with that provider in the previous 6 months. Sample sizes were designed to provide information at the practice-site level. The survey pull was a standard random sampling of all eligible patients.

To be eligible for the survey, patients met the following criteria:

- Were currently enrolled in one of the participating commercial health plans;
- Was a commercial member in an HMO, POS, or PPO health plan product;
- Was age 18 and older to receive an adult survey; and
- Was a patient of a Massachusetts primary care providers.

Survey invitations were sent to patients by email, if a patient had a valid email address, that had links to online surveys in English, Chinese, Portuguese, Russian and Spanish. Non-respondents were sent mailings of a survey invitation with an English paper survey and an URL to access online surveys. The response rate for the 2019 adult survey was 21.8%.

Survey item responses were coded to a 0 to 100 scale (Never=0; Sometimes=33.33; Usually=66.67; Always= 100.00) at the respondent level and composites scores were calculated as a simple average of the response values for each of the component questions. If fewer than half of the questions had valid responses for a given respondent, then the composite was considered missing. Respondent composite scores were averaged at the state level to calculate the state-level composite score. State-level composite scores were not case-mix adjusted. The Chronbach alpha scores in 2019 for the Communication composite was 0.91 for the adult survey.

2019 Communication Composite items and response options

2021 Communication	In the last 12 months, how often did this provider explain things in a way that was easy to understand?	Never Sometimes Usually Always
	In the last 12 months, how often did this provider listen carefully to you?	
	In the last 12 months, how often did this provider show respect for what you had to say?	
	In the last 12 months, how often did this provider spend enough time with you?	

The 2021 MHQP Patient Experience Survey was based on the Clinician & Group Visit Survey 4.0 (beta) (CG-CAHPS Visit Survey) for adults and addressed multiple visit modes, including telehealth. The CG-CAHPS Visit Survey asked patients about their experiences with care at their most recent visit with an ambulatory care provider. It was used for synchronous visits – i.e., care that was delivered and received at the same time, in person, by phone, or by video. It was not used for care delivered through asynchronous methods, such as email or portal messages. The "beta" designation means that the instrument had not yet been field tested by the CAHPS Consortium or approved as a CAHPS survey. The 2021 adult PES instrument had 58 items.

In previous years, MHQP used a sample frame of patients who had a primary care visit that occurred within a 12-month period. In 2021, they changed criteria. The 2021 sample frame included patients who had at least one primary care visit that occurred between September 1, 2020 through February 28, 2021. In addition, the lookback period was changed from a 12-month to 6-month. The survey was fielded from mid-June through mid-September 2021 and sampled 151,979 adult patients from 610 adult primary care practices statewide. Physicians with a primary specialty designation of Internal Medicine, Pediatrics, Family Medicine or General Medicine and practicing as primary care providers, and nurse practitioners and physician assistants practicing as primary care providers, were eligible for the survey. Providers must also have had a panel size of at least 20 eligible patients across the participating health plans. Practices having at least three providers meeting these criteria were included. Using health plan claims visit data, each provider was classified as either "adult" or "child," based on the age of the majority of his or her patients in the sample pool (child=ages 0-17; adult=ages 18 and older). To ensure that only active patients of a provider were included, the survey instrument included initial questions that served to confirm that the patient considered the provider named on the survey to be their primary care provider; and the patient had at least one visit with that provider in the previous 6 months. Sample sizes were designed to provide information at the practice-site level. The survey pull was a standard random sampling of all eligible patients.

To be eligible for the survey, patients met the following criteria:

- Were currently enrolled in one of the participating commercial health plans;
- Was a commercial member in an HMO, POS, or PPO health plan product;
- Was age 18 and older to receive an adult survey; and
- Was a patient of a Massachusetts primary care providers.

Survey invitations were sent to patients by email, if a patient had a valid email, that had links to online surveys in English, Chinese, Portuguese, Russian and Spanish. Non-respondents were sent mailings of a survey invitation with an English paper survey and an URL to access online surveys. The response rate to the 2021 adult survey was 17.0%.

Survey item responses were coded to a 0 to 100 scale (No=0; Yes, somewhat=50.0; Yes, definitely=100.00) at the respondent level and composites scores were calculated as a simple average of the response values for each of the component questions. If fewer than half of the questions had valid responses for a given respondent, then the composite could not be calculated and was considered missing. Respondent composite scores were averaged at the state level to calculate the state-level composite score. State-level composite scores were not case-mix adjusted. The Chronbach alpha scores in 2021 for the Communication composite were 0.89 for the adult survey.

2021 Communication Composite items and response options

2021 Communication	During your most recent visit, did this provider explain things in a way that was easy to understand?	Yes, definitely Yes, somewhat No
	During your most recent visit, did this provider listen carefully to you?	
	During your most recent visit, did this provider show respect for what you had to say?	
	During your most recent visit, did this provider spend enough time with you?	

a. **Numerator & exclusions:** N/A
b. **Denominator & exclusions:** N/A

c. **Stratifier:** N/A
d. **Imputation method:** N/A
e. **Weighting Scheme:** N/A
f. **Risk Adjusted:** N/A

4. **Data source & status:** The data sources for the Communication Composite score are the 2019 and 2021 MHQP Massachusetts Patient Experience Surveys of commercially insured patients.
5. **Data cost:** No cost.
6. **Data release:** Data is collected annually and released annually, usually in the fall.
7. **Validator & source:** N/A

Patient-Provider Communication (Child, Commercial)

2019: 97.4 CI_Low=97.2; CI_High=97.5
2021: 98.6 CI_Low=98.4; CI_High=98.7

1. **Date:** 8.4.22
2. **Measurement years (submission years):**
    1. 2018 (2019)
    2. 2020 (2021)
3. **Description of metric:**

The Communication Composite score is a validated composite score on a 0-100 scale that is derived from 4 survey items. It captures patient experiences of patient-provider communication in primary care visits. Higher scores denote better communication.

The **2019 MHQP Patient Experience Survey was based on the CG-CAHPS 3.0** survey developed by the National Committee for Quality Assurance (NCQA) and the Agency for Healthcare Research and Quality (AHRQ). The 2019 child Patient Experience Surveys (PES) had 54 items. The survey was fielded in the spring of 2019 and sampled 116,223 pediatric patients from 315 pediatric primary care practices statewide. Physicians with a primary specialty designation of Internal Medicine, Pediatrics, Family Medicine or General Medicine and practicing as primary care providers, and nurse practitioners and physician assistants practicing as primary care providers, were eligible for the survey. Providers also had to have a panel size of at least 20 eligible patients across participating health plans. Practices having at least three providers meeting these eligibility criteria were included the statewide survey. Using health plan claims visit data, each provider was classified as either "adult" or "child," based on the age of the majority of his or her patients in the sample pool (child=ages 0-17; adult=ages 18 and older). To ensure that only active patients of a provider were included, the survey instrument included initial questions that served to confirm that the patient considered the provider named on the survey to be their child's primary provider; and the patient had at least one visit with that provider in the previous 6 months. Sample sizes were designed to provide information at the practice-site level. The survey pull was a standard random sampling of all eligible patients.

To be eligible for the survey, patients met the following criteria:

- Were currently enrolled in one of the participating commercial health plans;
- Was a commercial member in an HMO, POS, or PPO health plan product;
- Was age 17 or younger to receive a pediatric survey; and
- Was a patient of a Massachusetts primary care providers.

Survey invitations were sent to patients by email, if a patient had a valid email address, that had links to online surveys in English, Chinese, Portuguese, Russian and Spanish. Non-respondents were sent mailings of a survey invitation with an English paper survey and an URL to access online surveys. The response rate for the 2019 child survey was 15.6%.

Survey item responses were coded to a 0 to 100 scale (Never=0; Sometimes=33.33; Usually=66.67; Always= 100.00) at the respondent level and composites scores were calculated as a simple average of the response values for each of the component questions. If fewer than half of the questions had valid responses for a given respondent, then the composite was considered missing. Respondent composite scores were averaged at the state level to calculate the state-level composite score. State-level composite scores were not case-mix adjusted. The Chronbach alpha scores in 2019 for the Communication composite were 0.87 for the child survey.

2019 Communication Composite items and response options

2019 Communication composite	In the last 12 months, how often did this provider explain things about your child's health in a way that was easy to understand?	Never Sometimes Usually
	In the last 12 months, how often did this provider listen carefully to you?	

	In the last 12 months, how often did this provider show respect for what you had to say?	Always
	In the last 12 months, how often did this provider spend enough time with your child?	

The 2021 MHQP Patient Experience Survey was based on the Clinician & Group Visit Survey 4.0 (beta) (CG-CAHPS Visit Survey) for adults and addressed multiple visit modes, including telehealth. The CG-CAHPS Visit Survey asked patients about their experiences with care at their most recent visit with an ambulatory care provider. It was used for synchronous visits – i.e., care that was delivered and received at the same time, in person, by phone, or by video. It was not used for care delivered through asynchronous methods, such as email or portal messages. The "beta" designation means that the instrument had not yet been field tested by the CAHPS Consortium or approved as a CAHPS survey. For the child PES instrument, MHQP adapted the adult 2021 PES instrument to a child version. MHQP maintained survey composites and items that were not included in the CG-CAHPS Visit Survey to maintain consistency across survey years. The 2021 child PES instrument had 72 items.

In previous years, MHQP used a sample frame of patients who had a primary care visit that occurred within a 12-month period. In 2021, they changed criteria. The 2021 sample frame included patients who had at least one primary care visit that occurred between September 1, 2020 through February 28, 2021. In addition, the lookback period was changed from a 12-month to 6-month. The survey was fielded from mid-June through mid-September 2021 and sampled 90,083 pediatric patients from 225 pediatric primary care practices statewide primary care providers (PCPs). Physicians with a primary specialty designation of Internal Medicine, Pediatrics, Family Medicine or General Medicine and practicing as primary care providers, and nurse practitioners and physician assistants practicing as primary care providers, were eligible for the survey. Providers must also have had a panel size of at least 20 eligible patients across the participating health plans. Practices having at least three providers meeting these criteria were included. Using health plan claims visit data, each provider was classified as either "adult" or "child," based on the age of the majority of his or her patients in the sample pool (child=ages 0-17; adult=ages 18 and older). To ensure that only active patients of a provider were included, the survey instrument included initial questions that served to confirm that the patient considered the provider named on the survey to be their child's primary provider (pediatric survey); and the patient had at least one visit with that provider in the previous 6 months. Sample sizes were designed to provide information at the practice-site level. The survey pull was a standard random sampling of all eligible patients.

To be eligible for the survey, patients met the following criteria:

- Were currently enrolled in one of the participating commercial health plans;
- Was a commercial member in an HMO, POS, or PPO health plan product;
- Was age 17 or younger to receive a pediatric survey; and
- Was a patient of a Massachusetts primary care providers.

Survey invitations were sent to patients by email, if a patient had a valid email, that had links to online surveys in English, Chinese, Portuguese, Russian and Spanish. Non-respondents were sent mailings of a survey invitation with an English paper survey and an URL to access online surveys. The response rate to the 2021 child survey was 13.5%.

Survey item responses were coded to a 0 to 100 scale (No=0; Yes, somewhat=50.0; Yes, definitely=100.00) at the respondent level and composites scores were calculated as a simple average of the response values for each of the component questions. If fewer than half of the questions had valid responses for a given respondent, then the composite could not be calculated and was considered missing. Respondent composite scores were averaged at the state level to calculate the state-level composite score. State-level composite scores were not case-mix adjusted. The Chronbach alpha scores in 2021 for the Communication composite was 0.82 for the child survey.

2021 Communication Composite items and response options

2021 Communication composite	During your child's most recent visit, did this provider explain things about your child's health in a way that was easy to understand?	Yes, definitely Yes, somewhat No
	During your child's most recent visit, did this provider listen carefully to you?	

	During your child's most recent visit, did this provider show respect for what you had to say?	
	During your child's most recent visit, did this provider spend enough time with your child?	

a. **Numerator & exclusions:** N/A
b. **Denominator & exclusions:** N/A
c. **Stratifier:** N/A
d. **Imputation method:** N/A
e. **Weighting Scheme:** N/A
f. **Risk Adjusted:** N/A

4. **Data source & status:** The data sources for the Communication Composite score are the 2019 and 2021 MHQP Massachusetts Patient Experience Surveys of commercially insured patients.
5. **Data cost:** No cost.
6. **Data release:** Data is collected annually and released annually, usually in the fall. \
7. **Validator & source:**

Patient-Provider Communication (Adult, MassHealth)

2019: 88.9
2021: 87.1

1. **Date:** 10/19/2022
2. **Measurement years (fielding/submission years):** 2018 (2019); 2020 (2021)
3. **Description of metric:** The Communication Composite score is a validated composite score on a 0-100 scale that is derived from 4 survey items. It captures patient experiences of patient-provider communication in primary care visits. Higher scores denote better communication.

The 2019 and 2021 MassHealth Primary Care Member Experience Surveys for adult members (PC Adult MES) were based on the CG-CAHPS 3.0 survey developed by the National Committee for Quality Assurance (NCQA) and the Agency for Healthcare Research and Quality (AHRQ).

- The 2019 PC Adult MES had 42 items. The survey was fielded in January 2019 and sampled 66,879 adult members.
- The 2021 PC Adult MES had 57 items. The survey was fielded in April 2021 and sampled 85,819 adult members.

The survey sample was randomly selected from a MassHealth sample frame that contained MassHealth adult members (≥ 18 years old) who were eligible to complete the survey. Eligibility requirements were that the member be actively enrolled in MassHealth, be attributed to an ACO that participated in the MassHealth program and have at least one primary care visit in the last year. Sample sizes were designed to yield a minimum of 400 completed surveys at the ACO level. Survey invitations were sent to members by email, if a member had a valid email address on file with MassHealth. Email invitations had links to online surveys in English, Spanish, Portuguese, Chinese, Haitian Creole and Vietnamese for the 2019 surveys. For the 2021 surveys, online surveys were also available in Russian, Khmer and Arabic. Non-respondents were sent mailings of a survey invitation with an English paper survey and an URL to access online surveys. For members who were on file as being Spanish speakers, mailings also contained a Spanish survey. The response rates for the 2019 and 2021 adult surveys were 18.3% and 11.4%, respectively.

Survey item responses were coded to a 0 to 100 scale (Never=0; Sometimes=33.33; Usually=66.67; Always= 100.00) at the respondent level and composites scores were calculated as a simple average of the response values for each of the component questions. Respondent composite scores were averaged at the state level to calculate the state-level composite score. State-level composite scores were not case-mix adjusted. The Chronbach alpha scores in 2019 and 2021 for the Communication composite were 0.91 and 0.92, respectively for the PC Adult MES.

Communication Composite items and response options

Communication Composite	In the last 12 months, how often did this provider explain things in a way that was easy to understand?	Never Sometimes Usually Always
	In the last 12 months, how often did this provider listen carefully to you?	
	In the last 12 months, how often did this provider show respect for what you had to say?	
	In the last 12 months, how often did this provider spend enough time with you?	

a. **Numerator & exclusions:** N/A
b. **Denominator & exclusions:** N/A
c. **Stratifier:** N/A
d. **Imputation method:** N/A
e. **Weighting Scheme:** N/A
f. **Risk Adjusted:** N/A

4. **Data source & status:** The data sources for the Communication Composite score were the 2019 and 2021 MassHealth Adult Primary Care Member Experience Surveys.
5. **Data cost:** No cost.
6. **Data release:** Data is collected annually and released annually, usually in the fall.
7. **Validator & source:** N/A

Patient-Provider Communication (Child, MassHealth)

2019: 92.4
2021: 91.2

1. **Date:** 10/19/2022
2. **Measurement years (submission years):**
    a. 2018 (2019)
    b. 2020 (2021)
3. **Description of metric:** The Communication Composite score is a validated composite score on a 0-100 scale that is derived from 4 survey items. It captures parent or guardian experiences of communication with their child's provider in primary care pediatric visits. Higher scores denote better communication. Note that in the MassHealth Primary Care Member Experience Surveys for child members, there is also another composite that captures communication, the child-provider communication composite. However, this composite captures experiences of communication between the child member and the pediatrician, for child members who are old enough to communicate with their providers. This metric specification is for the Communication composite and not for the Child-Provider Communication composite.

The 2019 and 2021 MassHealth Primary Care Member Experience Surveys for child members (PC Child MES) were based on the CG-CAHPS 3.0 survey developed by the National Committee for Quality Assurance (NCQA) and the Agency for Healthcare Research and Quality (AHRQ).

- The 2019 PC Child MES had 59 items. The survey was fielded in the January 2019 and sampled 111,190 child members.
- The 2021 PC Child MES had 63 items. The survey was fielded in April 2021 and sampled 126,044 child members.

The survey sample was randomly selected from a MassHealth sample frame that contained MassHealth child members (< 18 years old) who were eligible to complete the survey. Eligibility requirements were that the member be actively enrolled in MassHealth, be attributed to an ACO that participated in the MassHealth program and have at least one primary care (pediatric) visit in the last year. Sample sizes were designed to yield a minimum of 400 completed surveys at the ACO level. Survey invitations were sent to the parents or guardians of child members by mail. Mailings contained a survey invitation with an English survey and an URL to access online surveys. In 2019, online surveys were available in English, Spanish, Portuguese, Chinese, Haitian Creole and Vietnamese. For the 2021 surveys, online surveys were also available in Russian, Khmer and Arabic. For child members who were on file as being Spanish speakers, mailings also contained a Spanish survey. The response rates for the 2019 and 2021 PC child MES surveys were 10.7% and 5.6%, respectively.

Survey item responses were coded to a 0 to 100 scale (Never=0; Sometimes=33.33; Usually=66.67; Always= 100.00) at the respondent level and composites scores were calculated as a simple average of the response values for each of the component questions. Respondent composite scores were averaged at the state level to calculate the state-level composite score. State-level composite scores were not case-mix adjusted. The Chronbach alpha scores in 2019 and 2021 for the Communication composite were 0.87 and 0.88, respectively for the PC child MES.

Communication Composite items and response options

Communication composite	In the last 12 months, how often did this provider explain things about your child's health in a way that was easy to understand?	Never Sometime Usually Always
	In the last 12 months, how often did this provider listen carefully to you?	
	In the last 12 months, how often did this provider show respect for what you had to say?	
	In the last 12 months, how often did this provider spend enough time with your child?	

a. **Numerator & exclusions:** N/A
b. **Denominator & exclusions:** N/A
c. **Stratifier:** N/A
d. **Imputation method:** N/A
e. **Weighting Scheme:** N/A
f. **Risk Adjusted:** N/A

4. **Data source & status:** The data sources for the Communication Composite score were the 2019 and 2021 MassHealth Child Primary Care Member Experience Surveys.
5. **Data cost:** No cost.
6. **Data release:** Data is collected annually and released annually, usually in the fall.
7. **Validator & source:** N/A

Equity Measures

Difficulty Obtaining Necessary Healthcare by Race/Ethnicity

2019: All Residents: 32.4%; White, non-Hispanic: 29.9%, Black, non-Hispanic: 36.2%, Asian, non-Hispanic: N/A[1]; Other or Multiple Races, non-Hispanic[1]: 36.8%; Hispanic or Latino: 41.4%
2021: All Residents: 33.9%; White, non-Hispanic: 32.7%, Black, non-Hispanic: 33.1%, Asian, non-Hispanic: 36.2%; Other or Multiple Races, non-Hispanic[1]: 36.3%; Hispanic or Latino: 39.0%

1. Date: 10.10.2022
2. Data/Measurement and submission years: 2019 and 2021.
3. Description of metric: Percent of Massachusetts residents who reported that they had difficulties accessing care in the past 12 months, defined in 2019 as the resident reporting any of the following difficulties: unable to get an appointment with doctor's office or clinic as soon as needed; unable to get an appointment with a specialist as soon as needed; doctor's office or clinic not accepting new patients; doctor's office or clinic not accepting insurance type. In 2021, this measure was defined as reporting any of the above difficulties or any of the following additional difficulties: unable to get an appointment due to transportation issues; unable to get an appointment due to a lack of childcare for children at home; and unable to get an appointment due to language barriers or a lack of interpreter services. For more information, please see 2021 Massachusetts Health Insurance Survey (MHIS) Methodology Report.
    a. Numerator & exclusions: Non-Institutionalized Massachusetts residents responding that they had any difficulties accessing care in the past 12 months.
    b. Denominator & exclusions: Non-institutionalized Massachusetts residents.
    c. Imputation Method: Missing values for key demographic variables for the target and target's household members replaced through hot-deck imputation procedures.
    d. Weighting Scheme: The survey data were weighted to adjust for differential sampling probabilities, to reduce biases due to differences between respondents and nonrespondents and to address gaps in coverage in the survey frame. Overall, the procedure executed for this study follows a two-step procedure which is to first correct for any disproportionate probabilities of selection (base weighting), such as oversampling based on targeted household characteristics, and then to balance the sample to match official statistics for persons living in Massachusetts on metrics such as age and gender (post-stratification weighting). In developing weights for the MHIS, the survey data were weighted first at the household level and then at the target-person level.
    e. Imputation Method: Missing values for key demographic variables for the target and target's household members and missing values for analytic variables used in calculation of final metric replaced through hot-deck imputation procedures.
    f. Risk Adjusted: N/A
4. Data source & status: CHIA (July 2022). Findings from the 2021 Massachusetts Health Insurance Survey and Findings from the 2019 Massachusetts Health Insurance Survey.
5. Data release: Data is updated every two years.
6. Data cost: Publicly available.
7. Validator & Source: N/A

[1]This category was not included in the 2019 MHIS survey as a response option. "Other or Multiple Races, non-Hispanic" in 2019 and 2021 are not comparable because this category includes those who identify as "Asian, Non-Hispanic" in 2019 but not 2021

Usual Source of Care by Race/Ethnicity

Race/Ethnicity	2019	2021
All Residents	90.6%	88.1%
White, non-Hispanic	91.6%	90.8%
Black, non-Hispanic	91.0%	81.2%
Asian, non-Hispanic	N/A[1]	82.1%
Other or Multiple Races, non-Hispanic[1]	93.3%	83.1%
Hispanic	81.8%	81.3%

1. **Date:** 9/23/2022
2. **Data/Measurement and submission years:** 2019 and 2021.
3. **Description of metric:** Percent of Massachusetts residents who reported that they had a place to which they usually go when they are sick or need advice about their health other than the emergency department. For more information, please see 2021 Massachusetts Health Insurance Survey (MHIS) Methodology Report.
    a. **Numerator & exclusions:** Non-institutionalized Massachusetts residents responding that they had a usual source of care, excluding the emergency department.
    b. **Denominator & exclusions:** Non-institutionalized Massachusetts residents
    c. **Weighting Scheme:** The survey data were weighted to adjust for differential sampling probabilities, to reduce biases due to differences between respondents and nonrespondents and to address gaps in coverage in the survey frame. Overall, the procedure executed for this study follows a two-step procedure which is to first correct for any disproportionate probabilities of selection (base weighting), such as oversampling based on targeted household characteristics, and then to balance the sample to match official statistics for persons living in Massachusetts on metrics such as age and gender (post-stratification weighting). In developing weights for the MHIS, the survey data were weighted first at the household level and then at the target-person level.
    d. **Imputation method:** Missing values for key demographic variables for the target and target's household members and missing values for analytic variables used in calculation of final metric replaced through hot-deck imputation procedures.
    e. **Risk Adjusted:** N/A
4. **Data source & status:** CHIA (July 2022). *Findings from the 2021 Massachusetts Health Insurance Survey* and *Findings from the 2019 Massachusetts Health Insurance Survey*.
5. **Data release:** Data is updated every two years.
6. **Data cost:** Publicly available.
7. **Validator & source:** Nationally, 87.6% of residents reported a usual place to go for medical care based on estimates from the 2018 National Health Interview Survey.

[1]This category was not included in the 2019 MHIS survey as a response option. "Other or Multiple Races, non-Hispanic" in 2019 and 2021 are not comparable because this category includes those who identify as "Asian, Non-Hispanic" in 2019 but not 2021.

Avoidable Emergency Department (ED) Use by Race/Ethnicity

2019: All residents: 34.1%; White, non-Hispanic: 29.0%; Black, non-Hispanic: 32.9%; Asian, non-Hispanic: N/A[1]; Other/multiple races, non-Hispanic[1]: 39.9%; Hispanic: 48.9%
2021: All residents: 34.6%; White, non-Hispanic: 30.4%; Black, non-Hispanic: 52.4%; Asian, non-Hispanic: N/A; Other/multiple races, non-Hispanic[1]: N/A%; Hispanic: 39.9%

1. Date: 9/13/2022
2. Data/Measurement and submission years: 2019 and 2021 Massachusetts Health Insurance Survey (MHIS)
3. Description of metric: Among residents with at least one Emergency Department (ED) visit in the past 12 months, percent who reported that their most recent ED visit could have been treated by a general doctor if one had been available, by age group and race/ethnicity, 2019 and 2021. For more information, please see the 2021 Massachusetts Health Insurance Survey Methodology Report.
    a. Numerator & exclusions: Massachusetts residents with an ED visit over the past 12 months who reported that their most recent ED visit could have been treated by a general doctor if one had been available
    b. Denominator & exclusions: Massachusetts residents with an ED visit over the past 12 months
    c. Weighting Scheme: The survey data were weighted to adjust for differential sampling probabilities, to reduce biases due to differences between respondents and nonrespondents (nonresponse bias), and to address gaps in coverage in the survey frame (coverage bias). Overall, the procedure executed for this study follows a two-step procedure which is to first correct for any disproportionate probabilities of selection (base weighting), such as oversampling based on targeted household characteristics, and then to balance the sample to match official statistics for persons living in Massachusetts on metrics such as age and gender (post-stratification weighting). In developing weights for the MHIS, the survey data were weighted first at the household level and then at the target-person level.
    d. Imputation method: Missing values for key demographic variables for the target and target's household members replaced through hot-deck imputation procedures.
    e. Risk Adjusted: N/A
4. Data source & status: CHIA (July 2022). Findings from the 2021 Massachusetts Health Insurance Survey and Findings from the 2019 Massachusetts Health Insurance Survey.
5. Data cost: Publicly available.
6. Data release: Data released biennially.
7. Validator & source: Massachusetts Health Policy Commission (May 2017). HPC Datapoints: Avoidable Emergency Department Use in Massachusetts. Finding: "42% of all ED visits in Massachusetts in 2015 were avoidable, a share that has remained constant since 2011."

[1]This category was not included in the 2019 MHIS survey as a response option. "Other or Multiple Races, non-Hispanic" in 2019 and 2021 are not comparable because this category includes those who identify as "Asian, Non-Hispanic" in 2019 but not 2021.

Preventative Care Visit by Race/Ethnicity

2019: All Residents: 76.9%; White, non-Hispanic: 77.4%, Black, non-Hispanic: 77.9%, Asian, non-Hispanic: N/A[1]; Other or Multiple Races, non-Hispanic[1]: 77.8%; Hispanic or Latino: 72.3%
2021: All Residents: 77.8%; White, non-Hispanic: 81.0%, Black, non-Hispanic: 70.3%, Asian, non-Hispanic: 73.7; Other or Multiple Races, non-Hispanic[1]: 85.1%; Hispanic or Latino: 63.8%

1. Date: 10/10/2022
2. Data/Measurement and submission years: 2019 and 2021.
3. Description of metric: Percent of Massachusetts residents who reported that they received care from a general doctor, nurse practitioner or physician assistant in the past 12 months for a check-up, physical examination or for other preventive care. For more information, please see 2021 Massachusetts Health Insurance Survey (MHIS) Methodology Report.
    a. Numerator & exclusions: Non-Institutionalized Massachusetts residents reporting that they had a visit to a general doctor, nurse practitioner, physician's assistant, or midwife for preventive care in the past 12 months.
    b. Denominator & exclusions: Non-institutionalized Massachusetts residents
    c. Imputation Method: Missing values for key demographic variables for the target and target's household members replaced through hot-deck imputation procedures.
    d. Weighting Scheme: The survey data were weighted to adjust for differential sampling probabilities, to reduce biases due to differences between respondents and nonrespondents and to address gaps in coverage in the survey frame. Overall, the procedure executed for this study follows a two-step procedure which is to first correct for any disproportionate probabilities of selection (base weighting), such as oversampling based on targeted household characteristics, and then to balance the sample to match official statistics for persons living in Massachusetts on metrics such as age and gender (post-stratification weighting). In developing weights for the MHIS, the survey data were weighted first at the household level and then at the target-person level.
    e. Imputation Method: Missing values for key demographic variables for the target and target's household members and missing values for analytic variables used in calculation of final metric replaced through hot-deck imputation procedures.
    f. Risk Adjusted: N/A
4. Data source & status: CHIA (July 2022). Findings from the 2021 Massachusetts Health Insurance Survey and Findings from the 2019 Massachusetts Health Insurance Survey.
5. Data release: Data is updated every two years.
6. Data cost: Publicly available.
7. Validator & Source: Nationally, 83.1% of adult (18+) residents reported that they had a doctor visit within the past 12 months based on estimates from 2022. Source: National Health Interview Survey.

[1]This category was not included in the 2019 MHIS survey as a response option. "Other or Multiple Races, non-Hispanic" in 2019 and 2021 are not comparable because this category includes those who identify as "Asian, Non-Hispanic" in 2019 but not 2021.

Adult Influenza Vaccinations by Race/Ethnicity

2018-2019: All Residents: 53.5%; Black, non-Hispanic: 58.7%; Hispanic: 62.0%; Other or Multiple Races, non-Hispanic: 58.2%; White, non-Hispanic: 58.7%
2020-2021: All Residents: 62.4%; Black, non-Hispanic: 56.8%; Hispanic: 59.1%; Other or Multiple Races, non-Hispanic: 64.9%; White, non-Hispanic: 69.6%

1. Date: 8/11/2022
2. Data/Measurement and submission years: 2018-2019 influenza season (September 2018 – June 2019); 2020 – 2021 influenza season (September 2020 – June 2021)
3. Description of metric: Estimated proportion of Massachusetts adults (18+) that received the seasonal influenza vaccination.
    a. Numerator & exclusions: Respondents who did not have either a yes or no response to the question on whether they received flu vaccination in the past 12 months were excluded from the analysis.
    b. Denominator & exclusions: N/A
    c. Stratifier: Massachusetts; adults ≥ 18; race/ethnicity (based on self-report)
    d. Weighting Scheme: Flu vaccination coverage estimates from the Behavioral Risk Factor Surveillance System (BRFSS) were calculated using Kaplan-Meier survival analysis using month of reported flu vaccination to determine cumulative flu vaccination coverage. The coverage estimate weighted percentages by the U.S. population.
    e. Imputation method: Month and year of vaccination were imputed for respondents with missing month and year of vaccination date.
    f. Risk Adjusted: N/A
4. Data source & status: Centers for Disease Control and Prevention. Flu Vaccination Coverage by Race/Ethnicity, Adults 18 years and older, United States Behavioral Risk Factor Surveillance System (BRFSS), 2020-21 Season
5. Data cost: Publicly available.
6. Data release: Data updated annually.
7. Validator & source: 2020 HEDIS, adults 18+ that received flu vaccination: 57%.