Closing the Coverage Gaps: Reducing Health Insurance Disparities in Massachusetts Methodology Report

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Overview

We used the following methods to synthesize existing research and data on the characteristics of uninsured Massachusetts residents and examine the barriers they face in obtaining coverage:

- Review of the literature on the uninsured population in Massachusetts;
- Analysis of federal survey data to provide new and/or updated information and fill knowledge gaps;
- Microsimulation modeling to estimate uninsured nonelderly residents' eligibility for public or subsidized coverage options; and
- Semi-structured small group interviews with health insurance navigator organizations and other stakeholders who connect uninsured people with coverage and health care in Massachusetts.

We describe each of these methods in further detail below.

Literature review

Rationale and objectives

Though previous studies have examined the characteristics of the remaining uninsured, there have been fewer efforts to synthesize findings in a comprehensive review, and the recency of data collection varies across studies.[1] We conducted a literature review to synthesize knowledge about the uninsured population in Massachusetts with respect to the following research questions: 1) What are the demographic, socioeconomic, and health characteristics of uninsured Massachusetts residents, where do they live, and how do they interact with the health care and health insurance systems? 2) What are the barriers to coverage facing uninsured residents? The review was designed to create a comprehensive summary of what we know about those in Massachusetts who lack health insurance coverage, identify knowledge gaps that can be addressed with additional analysis of recent data, and inform the development of potential policy and programmatic options for closing the remaining coverage gaps in the state.

Study eligibility criteria

To identify studies providing information on these questions, we developed several criteria for study inclusion and exclusion based on population and setting, study design, outcome measures, and timing of data collection. We limited our search to studies providing information on community-based uninsured residents in Massachusetts with rigorous quantitative, qualitative, and mixed methods study designs. Quantitative studies included probability-based federal and state surveys with sufficient sample sizes to provide representative estimates for uninsured residents, administrative and tax filing data covering most of the state's uninsured population, and electronic health records. Our focus on surveys reflects the limited alternative sources of comprehensive data on the uninsured population and the need to make statistical inferences for this population from representative state samples. Qualitative and mixed methods studies included interviews and focus groups with uninsured residents and health care and service providers who work with them, reviews of state law and policy, as well as some nonrepresentative surveys of uninsured people.

Outcomes of interest included demographic, socioeconomic, health, and geographic characteristics of uninsured residents; duration without coverage and coverage transitions; access to and use of health care; actual or projected eligibility for MassHealth or ConnectorCare coverage; reasons for not having

[1] Previous syntheses include Gasteier, Audrey Morse, Marissa Woltmann, and Nikhita Thaper. 2021. Getting to 100: What We Know About the Remaining Uninsured in Massachusetts. Boston, MA: Massachusetts Health Connector; and Nelson, Daniel, and Joshua Rushakoff. 2019. Massachusetts' Remaining Uninsured: Who They Are and How to Cover Them.

coverage (self-reported or reported by others); awareness of coverage options; programmatic enrollment barriers; access to employer-sponsored health insurance; and payment of the individual mandate penalty. We included studies using data from after implementation of the Affordable Care Act's (ACA) major coverage provisions in 2014 or after stabilization of the uninsurance rate following implementation of the state health care reform law if post-ACA data were unavailable from the same data source.

Information sources and search strategy
In January and February 2022, we searched for relevant studies in peer-reviewed journal articles and gray literature published by government and non-government sources. Drawing on research supported by the state and the Blue Cross Blue Shield of Massachusetts Foundation (Foundation) as a starting point for exploring the literature, we first scanned the websites of the Foundation, Center for Health Information and Analysis (CHIA), Commonwealth Medicine (now called ForHealth Consulting), Massachusetts Health Connector, and Urban Institute. These organizations have conducted many of the most relevant studies of the uninsured population, including the development and analysis of the Massachusetts Health Insurance Survey, or MHIS (CHIA, Urban Institute) and the Massachusetts Health Reform Survey, or MHRS (Foundation, Urban Institute). We also searched the PubMed database, Google Scholar, and Google using combinations of "Massachusetts" and the following keywords: "uninsured," "uninsurance," "health care reform," "insurance coverage," "barriers to coverage," "gaps in coverage," "barriers to care," and "gaps in care." We identified additional sources through review of the bibliographies of relevant studies.

Selection and data collection process
Two Urban Institute researchers independently reviewed titles, abstracts, and full text of articles and reports to identify potential studies and concurrently screen them for inclusion criteria. Common data items collected for each study added to a shared Excel spreadsheet included study title, authors, year of publication, publisher, data sources, data years, population and setting, sample sizes, study design, outcomes, strengths and weaknesses including potential sources of bias, and consistency with inclusion criteria. Reviewers then reconciled any differences in which studies were selected for inclusion.

Study selection and synthesis of findings
Of the 60 potential studies we identified, 32 met our inclusion criteria, and the remainder were excluded primarily because more recent data were available from the data sources used for the studies. Half of the included studies were based on analysis of state or federal survey data, and additional studies were based on state tax filing or administrative data, surveys of hospital patients, electronic health records, interviews and focus groups, or review of state and federal law. For each study, we summarized study objectives, methods, and major results for each outcome of interest and then synthesized findings across studies for these outcomes.

Analysis of federal survey data

American Community Survey
We conducted a new analysis of public use microdata from federal surveys to provide a more up-to-date understanding of the characteristics of uninsured residents in Massachusetts.[2] Our primary data source was the American Community Survey (ACS), a nationally representative, annual survey conducted by the U.S. Census Bureau that provides detailed information on the demographic, housing, social, and economic characteristics of the U.S. population. In the years before the COVID-19 pandemic, more than 2 million households participated in the ACS annually, including approximately 40,000 households and

[2] We note that surveys have several limitations for assessing the characteristics of the uninsured, including underreporting of sensitive issues, measurement error in reporting of health insurance coverage, and higher nonresponse by populations that are more likely to be uninsured.

4,000 residents of group quarters in Massachusetts, and the response rate was typically above 90 percent.[3] ACS data collection occurs throughout the year by internet, mail, telephone, and in person, with a robust language assistance program for households with limited English proficiency.[4]

Our analysis used pooled 2017-2019 data from the ACS public use microdata sample created by IPUMS USA.[5] Though data from federal and state surveys are available for 2021, we were concerned that changes in the composition of the uninsured population and coverage barriers between 2019 and 2021 primarily reflect short-term impacts of and policy responses to the COVID-19 pandemic. We relied on data for the pre-pandemic periods as we believe that the experiences of residents who were uninsured before the pandemic will be more consistent with the experiences of the post-pandemic uninsured population.

We focused on the civilian noninstitutionalized population, which excludes adults on active duty in the Armed Forces and people in correctional facilities, nursing homes, and other institutions.[6] The pooled ACS microdata for these years provide a sample of 4,605 uninsured residents in Massachusetts, allowing us to provide precise estimates of the characteristics of the uninsured population and to examine the characteristics of key subgroups by race and ethnicity, age, family income, and nativity and citizenship status. We used IPUMS variables indicating if people are uninsured at the time of the survey based on a logical coverage editing process.[7] Because we were pooling data for a three-year period, estimates of the characteristics of uninsured residents represent annual averages during that period. We used survey weights to produce representative state-level estimates and cluster and strata variables for variance estimation provided by IPUMS to account for the complex design of the sample when estimating standard errors.[8]

Advantages and limitations of the ACS

The federal surveys we used for this analysis complement the data collected by state-supported surveys, including the MHIS. Both the ACS and MHIS have advantages and limitations for understanding the characteristics of uninsured residents. Strengths of the ACS include:

- Greater coverage and higher response rates: By sampling housing units from the U.S. Census Bureau's Master Address File, the ACS sample design minimizes coverage error. ACS response rates for 2017-2019 were between 86 and 94 percent, reducing the potential for nonresponse bias in the ACS.
- Larger sample sizes and a more frequent fielding schedule: The ACS is fielded continuously throughout the year on an annual basis and provides a robust sample size allowing us to disaggregate the uninsured population by demographic, socioeconomic, and geographic characteristics.
- Consistency with eligibility modeling: The Urban Institute's Health Insurance Policy Simulation Model is based on inputs from the ACS to provide precise estimates at state and substate levels of geography.

[3] US Census Bureau. "Sample Size." Accessed September 27, 2022. U.S. Census Bureau. "Response Rates." Accessed September 27, 2022.
[4] Torrieri, Nancy and ACSO, DSSD, and SEHSD Program Staff. 2014. American Community Survey: Design and Methodology Report (January 2014). Washington, DC: U.S. Census Bureau.
[5] Ruggles, Steven, Sarah Flood, Ronald Goeken, Megan Schouweiler, and Matthew Sobek. 2022. IPUMS USA: Version 12.0 [dataset]. Minneapolis, MN: IPUMS.
[6] Our estimates for all Massachusetts residents include 158 people on active duty with the Armed Forces, but this group is not represented among the uninsured population.
[7] IPUMS USA. "Health Insurance Variables in the American Community Survey." Accessed September 27, 2022.
[8] IPUMS USA. "Analysis and Variance Estimation with IPUMS USA." Accessed September 27, 2022.

- Detailed household information and unique content: The ACS collects information for each household member and covers topics such as primary language, employment, housing characteristics, and vehicle access.

The ACS also has several limitations:

- Less detail on the Massachusetts health insurance landscape: The ACS questionnaire is standardized across states and is not tailored to reflect the unique health insurance landscape in Massachusetts. In contrast, the MHIS questionnaire contains more detailed response options related to MassHealth, ConnectorCare, and other Health Connector plans.
- Limited data collection on health topics: Unlike the MHIS, the ACS does not collect information on health topics such as health care access and affordability, health care use, duration of uninsurance, and reasons for not having coverage.
- Pandemic data collection challenges: The latest year of ACS data we used is 2019, given the effects of the COVID-19 pandemic on data collection in 2020. The U.S. Census Bureau did not release 2020 ACS 1-year estimates because the data did not meet its statistical quality standards.

Current Population Survey and Behavioral Risk Factor Surveillance System

We also examine characteristics not captured in the ACS based on data from the 2017-2019 Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC),[9] conducted by the Bureau of Labor Statistics and U.S. Census Bureau, and Behavioral Risk Factor Surveillance System (BRFSS), conducted by the Massachusetts Department of Public Health in collaboration with the Centers for Disease Control and Prevention. For instance, the CPS collects detailed information on employment, including firm size, whether employers offer health insurance coverage and workers are eligible for that coverage,[10] and health insurance coverage in the previous calendar year. The CPS allows us to compare the characteristics of the long-term uninsured and people with temporary coverage gaps. The BRFSS collects information on sexual orientation and gender identity, social determinants of health, diagnosed chronic conditions, and several measures of health status and access to health care. The pooled CPS and BRFSS data have smaller samples of uninsured Massachusetts residents (292 and 931) than the ACS. In order to improve the consistency of estimates across the surveys, we reweighted the CPS and BRFSS samples for Massachusetts to the characteristics of Massachusetts residents in the ACS, overall and among the uninsured population.[11]

[9] In 2019, the U.S. Census Bureau implemented an updated data processing system to incorporate new content from an earlier redesign of questions on income, health insurance, and household relationships. We used the 2017 ASEC research file and the 2018 ASEC bridge file, which both use the updated processing system.

[10] Though the universe for employer-sponsored insurance (ESI) offer variables is consistent across the 2017 and 2018 ASEC production files (PEOFFER) and the 2019 production file (ESIOFFER), the U.S. Census Bureau identified inconsistencies between these data and the PEOFFER variables on the 2017 research and 2018 bridge files. Because most of the same respondents are in both the 2018 bridge and production files, and because there is similar overlap between the 2017 research and production files, we used a logical editing process to estimate ESI offer and eligibility rates in the 2017 research and 2018 bridge files. For instance, individuals in the 2018 bridge file who are working but not self-employed are assigned an ESI offer if they 1) are coded as group plan policyholders in the bridge file, 2) are coded as having an ESI offer in the bridge file, or 3) are coded as having an ESI offer or are not in the universe because they are group plan policyholders in the production file. This approach produces ESI offer estimates in the 2018 bridge file that approximate the estimates in the 2018 and 2019 production files, both overall and by firm size, but are slightly higher (e.g., 82 percent in the 2018 bridge file versus 80 percent in the 2018 production file). The editing process improves internal consistency with other bridge file coverage variables but may slightly overestimate ESI offer rates.

[11] For the CPS, we reweight based on sex, age, race/ethnicity, educational attainment, marital status, nativity and citizenship status, household size, homeownership status, work status, and family income as a percentage of the federal poverty level. We also adjust CPS replicate weights to account for this reweighting. For the BRFSS, we reweight based on sex, age, race/ethnicity, educational attainment, marital status, household size, homeownership status, work status, household income, and disability status after imputing values for cases with missing data. We use BRFSS strata and primary sampling unit variables to estimate standard errors.

Because the literature review and data analysis draw primarily on studies and data collected before the pandemic, they do not reflect changes in the composition and circumstances of the uninsured population resulting from pandemic-related economic disruptions and federal and state policy responses.

Microsimulation modeling of eligibility for public or subsidized coverage options

We used the Urban Institute's Health Insurance Policy Simulation Model for Massachusetts (HIPSM-MA) to estimate the share of uninsured Massachusetts residents who are eligible for MassHealth and subsidized coverage through the Connector.[12] HIPSM is a detailed microsimulation model of the health care system designed to estimate the cost and coverage effects of proposed health care policy options by simulating the decisions of employers and households to offer and enroll in health coverage.[13] It relies on inputs from the ACS and other national data sources.

For this analysis, we calibrated HIPSM using detailed enrollment and cost data from MassHealth and the Health Connector.[14] We simulated results for 2023 under the assumption that enhanced subsidies authorized by the American Rescue Plan Act (ARPA) would be extended through that year.[15] Our estimates of eligibility in an average month of 2023 also assume that states have fully processed Medicaid eligibility redeterminations following the expiration of the public health emergency. However, the continuous coverage requirement for Medicaid remained in effect until March 31, 2023.

We estimated uninsured nonelderly residents' eligibility for MassHealth, ConnectorCare, and APTC-only Connector plans. We also estimated the share of these residents who were ineligible for MassHealth or Connector coverage because of undocumented status, ineligible for subsidized Connector coverage because of access to an affordable offer of employer-based coverage, and ineligible for APTCs because the premium cost of a benchmark plan would not exceed 8.5 percent of their family income.

Interviews with stakeholders who connect uninsured residents with coverage and health care

Because some studies in our literature review are based on data that are several years old, we conducted semi-structured interviews with health insurance navigator organizations and other stakeholders who provide health care or enrollment assistance to uninsured residents in Massachusetts. These interviews served as a check on whether the findings from prior work reflect the circumstances faced by the uninsured now and provided new insights on barriers to coverage, particularly for people of color and other marginalized populations, beyond those raised in prior studies.

We conducted five small group interviews with navigators and service providers at statewide and community-based organizations. Stakeholder organizations identified in consultation with the Foundation included community health centers, organizations receiving grants under the Foundation's Connecting Consumers with Care grant program,[16] the Massachusetts Medical Society and Alliance Charitable

[12] Buettgens, Matthew, and Linda Blumberg. "The Health Insurance Policy Simulation Model for Massachusetts (HIPSM-MA): Overview of the Model and Coverage and Cost Estimates Under the AHCA." Presentation for the Massachusetts Coalition for Coverage and Care. Accessed September 27, 2022.
[13] Buettgens, Matthew, and Jessica Banthin. 2020. The Health Insurance Policy Simulation Model for 2020. Washington, DC: Urban Institute.
[14] Our methodology is the same as that used in other recent HIPSM-MA analyses. See Buettgens, Matthew, Jessica Banthin, and Andrew Green. 2022. Expanded Coverage and Savings: Effects in Massachusetts of Extending the American Rescue Plan Act's Enhanced Marketplace Subsidies. Boston, MA: Blue Cross Blue Shield of Massachusetts Foundation.
[15] We also simulated results assuming enhanced ARPA subsidies expired but did not include them in this report since the Inflation Reduction Act extended the enhanced subsidies through 2025.
[16] Blue Cross Blue Shield of Massachusetts Foundation. "Recent Awards." Accessed September 27, 2022.

Foundation's Access to Care grant partners,[17] and Health Care For All. Staff from the Foundation, Massachusetts Medical Society, and Massachusetts League of Community Health Centers helped facilitate email recruitment for these interviews.

We developed an interview protocol with open-ended questions on the following topics: organizational background; characteristics of uninsured patients or clients; eligibility and awareness of coverage options; transitions to uninsurance; and barriers to applying for and renewing coverage. The protocol was designed to elicit responses about the uninsured population before the pandemic and identify policies and processes with disproportionate impact on underserved populations. Each interview was approximately one hour and conducted over Zoom between May and July 2022. We obtained informed consent through email at the recruitment stage and again at the beginning of the interview. Interviews were audio recorded and transcribed. We then coded responses to identify key themes. We gratefully acknowledge the following organizations for participating in these interviews:

- Caring Health Center
- Community Action Committee of Cape Cod and Islands
- Duffy Health Center
- Ecu-Health Care
- Edward M. Kennedy Community Health Center
- Family Health Center of Worcester
- Father Bill's and MainSpring
- Gratis Healthcare
- Greater Lawrence Family Health Center
- Health Care For All
- Interfaith Social Services
- Joint Committee for Children's Health Care in Everett
- Lowell Community Health Center
- MetroWest Free Medical Program

We also thank staff from the Foundation, Massachusetts Medical Society, and Massachusetts League of Community Health Centers for assisting with recruitment and scheduling for these interviews.

Scan of policies to address identified barriers to coverage

The findings from the literature review, data analysis and microsimulation modeling, and stakeholder interviews informed the next phase of the project: compiling a set of policy options that address the Massachusetts-specific coverage gaps. The first step in this phase was a landscape scan to identify policies that are in place or being contemplated, outside of or within Massachusetts, which would increase coverage by targeted identified populations and barriers. We began with a search of literature published within the last five years by government agencies, academic journals, advocacy organizations, and university and non-profit research institutes. A team of two reviewers systematically searched academic databases and organization websites for model policies, using broad keywords such as "uninsured," "health care reform," "health insurance coverage," "barriers to [gaps in] coverage," and "barriers to care," and then narrowed the focus using "long- [or short-] term uninsured," "underemployed," "immigrant populations," and "historically marginalized," "historically underserved," or "historically disadvantaged" populations.
This search yielded substantial material on policies directed to populations eligible for programs but not enrolled, populations ineligible due to immigration status, and populations not enrolled due to lack of an

[17] Massachusetts Medical Society and Alliance Charitable Foundation. "Fiscal Year 2022 Grants." Accessed September 27, 2022.

affordable option. The review team then analyzed the policies and conducted further internet research to determine their relevance and applicability to the Massachusetts policy landscape and responsiveness to the findings of the data analysis, eligibility simulations, and stakeholder interviews. The team also consulted with subject matter experts at the Urban Institute and Commonwealth Medicine (now called ForHealth Consulting), for additional input. Information on policies that met the inclusion criteria were compiled in an Excel spreadsheet and organized according to the four categories of barriers presented in the report. A simplified version of this spreadsheet is presented in the report, and the information that underlies it was used to carry out the final stage of the project.

Interviews with policy experts about the policy options

The project team conducted nine interviews with Massachusetts health policy experts to solicit their feedback on the potential of the policies to close remaining coverage gaps. The experts were affiliated with Massachusetts government agencies, the Massachusetts legislature, advocacy organizations, universities, and policy institutes. The project team and staff of the Foundation collaborated in developing the list of interviewees. The invited interview subjects participated alone in most cases, but some invited up to three colleagues to join them. Three members of the project team conducted the interviews, which were done via Zoom and recorded with the permission of the interview subjects.

The project team provided the list of policy options to the interview subjects in advance, along with a list of questions to elicit opinions largely focused on better understanding perspectives on: (1) which policies would have the greatest impact in positively affecting coverage gaps; (2) what are the operational challenges, and other feasibility considerations, for these policies and; (3) whether there were any policies that were not on the list that interviewees would suggest considering, along with any other relevant thoughts on the subject. The information gleaned from these interviews informed the policies the project team chose to highlight.