Certified Nurse Midwives and Maternity Care in Massachusetts

January 2022
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Maternity care is the top category of hospital admission for Massachusetts residents under age 65, but continues to exhibit wide variation in spending and quality across hospitals. Equity concerns also persist around birth experiences and outcomes.

Despite favorable outcomes associated with midwifery care, and the potential of midwife-led care to help to address ongoing racial disparities in birth outcomes, rates of midwife-attended births in the U.S. remain low. As of 2017, 17% of Massachusetts births were attended by Certified Nurse Midwives (CNMs). This is a higher rate than the U.S. as a whole (10%), but far below rates of midwife-attended births in other high-income countries (50-75%).

Most Massachusetts hospitals offering maternity care as of 2017 also offered midwifery services. However, the HPC’s analysis found substantial variation by hospital: rates of hospital midwifery care ranged from zero to nearly 70%. Likewise, even at hospitals where CNMs had a significant role, hospitals' care models varied substantially. The HPC’s analysis also found that hospitals with higher rates of midwifery care saw shorter length of inpatient stay, lower cesarean and episiotomy rates, and lower spending.

Although CNMs received expanded scope of practice authority in 2012, hospital and payer policies and practices can still represent barriers to midwifery practice. Barriers to expanding and diversifying the Massachusetts midwifery workforce also persist.

The HPC’s recommendations include increasing and improving use of CNMs with payment models that are neutral to provider mix, modifying hospital and payer policies and practices to align with state law that does not require physician supervision for CNMs, and supporting alternative birth settings by removing barriers to the establishment and operation of birth centers.
In 2017, **17% of Massachusetts births** were attended by Certified Nurse Midwives (CNMs).

30 of the 44 hospitals that provided obstetric care in Massachusetts as of 2017 also offered midwifery services. However, rates of midwifery care varied substantially by hospital, from **zero to nearly 70%**.

Hospitals with higher rates of midwifery care saw lower cesarean and episiotomy rates, and lower spending: a **10% increase in midwife-attended births** in Massachusetts would result in **3,560 fewer cesarean births, 860 fewer episiotomies**, and **$530 less in spending per episode** of maternity care.

Despite Massachusetts granting full scope of practice authority to CNMs in 2012, hospital and payer policies can limit CNM practice.
INTRODUCTION

- Maternity Care in Massachusetts
- Variation in Midwifery Care
- Outcomes Associated with Midwives in the Commonwealth
- Barriers to Practice
- Policy Recommendations
- Data and Methods
Maternity care is the top category of hospital admission among Massachusetts residents under age 65 and exhibits wide variation in spending and quality.\textsuperscript{1}

The ongoing equity concerns surrounding birthing experiences and maternity care are a key area of focus for a number of current HPC investment programs.

\begin{itemize}
\item Cost-Effective, Coordinated Care for Caregivers and Substance Exposed Newborns (C4SEN): Supports development of innovative care models to improve the quality of care for substance-exposed newborns and their caregivers.
\item Birth Equity and Support through the Inclusion of Doula Expertise (BESIDE): Aims to address inequities in maternal health outcomes and improve the care and patient experience of Black birthing people by increasing access to and use of doula services.
\end{itemize}

The HPC has long advocated for top-of-license practice, team-based care, and scope of practice (SOP) reform for Massachusetts providers.\textsuperscript{2} However, SOP reform on its own may not be sufficient to transform and optimize practice.\textsuperscript{3-5}

The HPC focused on Certified Nurse Midwives to understand barriers to full and independent practice beyond legal scope of practice, as well as outcomes associated with the midwifery model of maternity care in the Commonwealth.

\begin{itemize}
\item Why did the HPC examine the role of Certified Nurse Midwives in maternity care in Massachusetts?
\end{itemize}
Many types of providers care for the nearly 70,000 births in Massachusetts each year.

**Obstetrician/Gynecologists**
- Medical education, residency, and licensure
- Hospitals, offices
- Board of Registration in Medicine

**Nurse Practitioners with OB/Gyn specialty**
- Undergraduate and graduate nursing education, 
  NP certification
- Hospitals, offices
- Board of Registration in Nursing

**Registered Nurses with OB/Gyn specialty**
- Undergraduate nursing education, nursing exam
- Hospitals, offices, birth centers
- Board of Registration in Nursing

**Certified Nurse Midwives**
- Undergraduate and graduate nursing education, midwifery 
  education and certification
- Hospitals, offices, birth centers
- Board of Registration in Nursing

**Certified Professional Midwives**
- Coursework, work experience, and/or apprenticeship, 
  midwifery education and certification
- Homes
- Not licensed in MA

**Doulas**
- Although not required for practice, most doulas complete 
  training or certification
- Homes, birth centers, offices, hospitals
- Not licensed in MA

*HPC analysis of data from the 2018 Health Professions Data Series administered by the Massachusetts Board of Registration in Nursing in collaboration with the DPH Healthcare Workforce Center. For any further data requests or questions regarding the data collection please contact the Massachusetts Department of Public Health Office of Statistics and Evaluation Director, Sanouri Ursprung (sanouri.ursprung@state.ma.us)*

Notes: Certified Professional Midwife workforce number is an estimate. See appendix for additional sources and more detail.
The philosophy that labor and birth are normal life processes uses a model of watchful waiting rather than continuous surveillance and seeks to avoid interventions in the absence of serious complications.

Emphasizes patient autonomy, centering the birthing person in shared decision-making about their care.

The philosophy emphasized in midwifery care.

The philosophy that labor and birth are inherently risky can lead to detailed, highly medicalized surveillance of labor and can result in interventions that are unneeded, non-evidence-based, or premature.

In this approach, providers’ sense of risk may predominate over the birthing person’s preferences for their care.
CNMs are one of the five types of advanced-practice registered nurses (APRNs) licensed in Massachusetts¹,² and comprise the majority of midwives in the state.

- CNMs have had full scope of practice (SOP) in Massachusetts since 2012, and do not legally require physician supervision to practice, prescribe, or bill.³–⁵

CNMs are trained to use a care model that emphasizes watchful waiting and patient autonomy,⁷ providing a low-intervention model of maternity care for birthing people with low- and moderate-risk pregnancies and deliveries.⁸–⁹

CNMs provide obstetric care both collaboratively with and separately from obstetricians.

Midwives are the predominant providers for maternity care in most high-income countries.¹⁰

The role and presence of CNMs varies widely across Massachusetts hospitals.

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¹ Massachusetts Board of Registration in Nursing. Learn about Advanced Practice Registered Nurses (APRN). Available at: https://www.mass.gov/service-details/learn-about-advanced-practice-registered-nurses-aprn
² American College of Nurse-Midwives. The Credential CNM and CM. Available at: https://www.midwife.org/The-Credential-CNM-and-CM
³ M.G.L. 112, sections 80 (c) and (g)
⁵ Massachusetts Board of Registration in Nursing. Learn more about prescriptive authority requirements and practice guidelines. Available at: https://www.mass.gov/service-details/learn-more-about-prescriptive-authority-requirements-and-practice-guidelines
⁶ American College of Nurse-Midwives. Our Philosophy of Care. Available at: https://www.midwife.org/Our-Philosophy-of-Care
⁷ American College of Nurse-Midwives. Our Philosophy of Care. Available at: https://www.midwife.org/Our-Philosophy-of-Care
Research finds that increased use of midwifery care is associated with improved patient outcomes and lower spending.

**IMPROVED OUTCOMES**

- Lower rates of maternal mortality\(^1,2\)
- Lower rates of preterm birth, low birthweight infants, and infant mortality\(^2-4\)
- Lower cesarean and episiotomy rates\(^3-5\)
- Fewer complications, including perineal lacerations and postpartum hemorrhage\(^3,6,8\)
- Fewer interventions, including induction, epidural, and instrumental birth\(^2,3,5,7\)
- Shorter length of inpatient stay\(^10\)

**LOWER SPENDING**

- Lower overall maternity spending and lower labor-and-delivery cost compared to deliveries attended by physicians\(^5\)
- May be related to the lower intervention rates and lower rates of preterm births associated with midwifery care\(^11\)

The midwifery model of care may also help to address continuing racial disparities in birth outcomes.

**DISPARITIES**

- Black and Native American birthing people in the U.S. are more likely to die from pregnancy-related causes than White birthing people.¹⁻³
- Black birthing people in the U.S. are twice as likely to experience severe maternal morbidity as White birthing people.⁴
- Experience of racial discrimination is associated with adverse birth outcomes, including preterm birth and low birth weight.⁵
- In Massachusetts, Black Non-Hispanic women were found to have twice the rate of severe maternal morbidity as White Non-Hispanic women.⁶

**MIDWIFERY**

- Birthing people of color report adverse experiences with pregnancy and birth care when they do not feel heard, when they are denied care, and when providers are dismissive of their needs and concerns.⁷,⁸
- The model of individualized, person-centered care provided by midwives may help to improve pregnancy and birth care for birthing people of color.⁹,⁷,¹⁰

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Despite favorable outcomes associated with midwifery care, the U.S. has the lowest proportion of midwives as maternity providers among high-income countries.

Maternity care providers per 1,000 live births in high-income countries, as measured by Tikkanen et al., 2020

<table>
<thead>
<tr>
<th>Country</th>
<th>OB/GYNs per 1,000 live births</th>
<th>Midwives per 1,000 live births</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>10</td>
<td>50%</td>
</tr>
<tr>
<td>CAN</td>
<td>20</td>
<td>75%</td>
</tr>
<tr>
<td>NETH</td>
<td>30</td>
<td>50%</td>
</tr>
<tr>
<td>SWIZ</td>
<td>40</td>
<td>50%</td>
</tr>
<tr>
<td>NOR</td>
<td>50</td>
<td>50%</td>
</tr>
<tr>
<td>UK</td>
<td>60</td>
<td>50%</td>
</tr>
<tr>
<td>FRA</td>
<td>70</td>
<td>50%</td>
</tr>
<tr>
<td>SWE</td>
<td>80</td>
<td>50%</td>
</tr>
<tr>
<td>NZ</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The rate of midwife-attended births in MA is above the U.S. average…

17% vs. 10%…but far below rates of midwifery care in other high-income countries2-3

In Germany, for example, physicians cannot provide birth care without midwife involvement4

Introduction

**MATERNITY CARE IN MASSACHUSETTS**

- Variation in Midwifery Care
- Outcomes Associated with Midwives in the Commonwealth
- Barriers to Practice
- Potential Policy Recommendations
- Data and Methods
Under 1% of Massachusetts births in 2017 took place outside of hospitals, fewer than in the U.S. as a whole.

- The U.S. out-of-hospital birth rate as of 2017 was 1.61%.
- The MA out-of-hospital birth rate was 0.90%.
- Home births were more prevalent than birth center births in both the U.S. and MA.

Over 60% of Massachusetts births in 2017 were commercially insured.

Proportion of all births by payer, 2017

- **Commercials**: 61.6%
- **Medicaid**: 34.8%
- **Other Public**: 3.2%
- **Self Pay**: 0.4%

Notes: Free care omitted from this exhibit. Free care represented 0.01% of all births in 2017.

Source: HPC analysis of Massachusetts Department of Public Health birth record data, 2017
Introduction

Maternity Care in Massachusetts

**VARIATION IN MIDWIFERY CARE**

- Outcomes Associated with Midwives in the Commonwealth
- Barriers to Practice
- Policy Recommendations
- Data and Methods
Massachusetts Birth Centers and Hospitals

The proportion of births attended by midwives varied substantially by region across the Commonwealth.

Proportion of births at hospitals located in each region that were midwife-attended, 2017

Note: Mean midwife-attended births across all hospitals per region.
Most Massachusetts hospitals with maternity beds reported some midwife-attended births.

**Births attended by physicians and midwives per hospital, 2017**

- **Physician-attended births**
- **Midwife-attended births**

**Notes:** Beverly Hospital and Cambridge Health Alliance include hospitals and their associated birth centers. Hospitals reporting <500 births in 2017 excluded for readability; Baystate Franklin Medical Center, Fairview Hospital, Falmouth Hospital, Harrington Memorial Hospital, Heywood Hospital, Holyoke Medical Center, Martha's Vineyard Hospital, Morton Hospital, Nantucket Cottage Hospital, Steward Norwood Hospital. See appendix for detail on hospital exclusions.

**Source:** HPC analysis of Massachusetts Department of Public Health birth record data for 2017.

- **68,834** in-hospital births in 2017
- **11,373** attended by CNMs
- **30** of the Commonwealth’s **44** hospitals with maternity beds reported midwife-attended births
The proportion of births attended by midwives varied by hospital from 0 to nearly 70%.

Notes: Beverly Hospital and Cambridge Health Alliance include hospitals and their associated birth centers. Source: HPC analysis of Massachusetts Department of Public Health birth record data.
44% of Massachusetts births in 2017 took place in academic medical centers, which had the lowest rates of midwife-attended births.

The share of deliveries taking place in community hospitals declined by 2.5 percentage points from 2016-2019 as deliveries have become increasingly concentrated in academic medical centers.

Source: HPC analysis of Massachusetts Department of Public Health birth record data, 2017 and HPC analysis of Center for Health Information and Analysis Hospitals Inpatient Discharge Database, 2010-2019
CNMs attended a higher proportion of Medicaid-covered births than commercially-insured births.

Proportion of midwife-attended births by payer, 2017

- Self pay: 13.0%
- Commercial: 14.6%
- Medicaid: 19.8%
- Other public: 19.9%

Notes: Free care omitted from this exhibit. Free care represented 0.01% of all births and no midwife-attended births in 2017.
Source: HPC analysis of Massachusetts Department of Public Health birth records.
Birthing people with midwife-attended births did not differ markedly by race/ethnicity.

Proportion of midwife-attended births and proportion of all births by patient race and ethnicity, 2017

Note: Terminology for racial and ethnic groups are those used in the original data source
Source: HPC analysis of Massachusetts Department of Public Health birth records,
According to stakeholders, variation in the extent to which hospitals incorporate nurse midwives in maternity care can be related to several factors.

- **Hospital history** of offering midwifery care or having a shortage of obstetricians.
- **Physician or leadership understanding of midwifery** care and willingness to collaborate across provider types.
- **Hospital definition of obstetric risk** and which patients are appropriate for midwifery care.
- **Care model** that includes patient education about midwifery or positions midwives as primary providers, offering patients the opportunity to choose their provider type.
- **Patient awareness** of or interest in midwifery.
Even in hospitals where CNMs have a significant role in childbirth, hospitals’ care models and midwives’ roles varied widely.

<table>
<thead>
<tr>
<th>Staffing</th>
<th>Hospital 1</th>
<th>Hospital 2</th>
<th>Hospital 3</th>
<th>Hospital 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Employs a mix of 9 OBs and 7 CNMs</td>
<td>Employs 10 full-time and 5 part-time midwives and 5 OBs</td>
<td>Employs 12 CNMs and 4 OBs, a mix of full-time and part-time providers</td>
<td>27 full- and part-time midwives and 25 OBs, a mix of employed and contracted providers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient Education</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Prenatal Care</td>
<td>Patients are assigned an OB early in pregnancy; OBs are the main prenatal care providers</td>
<td>Both CNMs and OBs provide prenatal care</td>
<td>Both CNMs and OBs provide prenatal care</td>
<td>Both CNMs and OBs provide prenatal care; OBs provide prenatal care collaboratively with NPs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CNM Role in Labor and Delivery</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CNMs primarily provide inpatient labor and delivery care and are on-call</td>
<td>CNMs provide labor and delivery care in birth center and inpatient settings</td>
<td>CNMs are primary providers for inpatient labor and delivery care, and care for all births except scheduled cesareans</td>
<td>CNMs provide inpatient labor and delivery care, and care for their patients through postpartum</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Risk Considerations</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>OBs directly care for high-risk labors and for any patients who request an MD/DO delivery, and serve as backup and as needed</td>
<td>Only the lowest-risk patients are eligible for birth center care</td>
<td>Higher-risk patients receive collaborative CNM and OB care</td>
</tr>
</tbody>
</table>

Source: HPC meetings with hospitals, August-September 2021. Each of the hospitals had 30-70% midwife-attended births as of 2017, based on HPC analysis of Massachusetts Department of Public Health birth record data.
Introduction

Maternity Care in Massachusetts

Variation in Midwifery Care

**OUTCOMES ASSOCIATED WITH MIDWIVES IN THE COMMONWEALTH**

- Barriers to Practice
- Policy Recommendations
- Data and Methods
Considerations for Exploring Outcomes and Spending Associated with Midwifery Care in Massachusetts

- Observed associations between midwives and birth outcomes can be complicated by the fact that midwives tend to care for low- and moderate-risk pregnancies.\(^1\)\(^2\) The highest-risk pregnancies (approximately 6-8% of pregnancies) are generally not appropriate for midwife care and are more likely to occur in AMCs.\(^3\)
  - Academic researchers and the HPC control for numerous factors in seeking to understand associations between use of CNMs and birth outcomes across Massachusetts.

- It is difficult to ascertain CNM involvement in birth from claims data because CNMs are often not listed as billing providers, even when they are directly involved in delivery.
  - For spending outcomes which are derived from claims data, the HPC uses hospital-level birth record data from the Massachusetts Department of Public Health to estimate rates of midwifery care by hospital.

- Ultimately, the observed associations between rates of midwifery care and outcomes are validated by the fact that the variation in hospitals’ use of midwives is idiosyncratic and not directly related to the characteristics of the people who give birth at each hospital.

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Hospitals with a higher proportion of midwife-attended births had a shorter length of inpatient stay.

Inpatient length of stay for cesarean and vaginal births at hospitals with differing proportions of midwife-attended births, 2017

<table>
<thead>
<tr>
<th>Proportion</th>
<th>Cesarean</th>
<th>Vaginal</th>
</tr>
</thead>
<tbody>
<tr>
<td>NONE (0%)</td>
<td>5.6</td>
<td>3.8</td>
</tr>
<tr>
<td>LOW (1-19%)</td>
<td>6.2</td>
<td>4.0</td>
</tr>
<tr>
<td>MODERATE (20-39%)</td>
<td>6.1</td>
<td>3.8</td>
</tr>
<tr>
<td>HIGH (≥40%)</td>
<td>5.1</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Source: HPC analysis of All-Payer Claims Database 7.0 Massachusetts Department of Public Health birth record data for 2017.
Hospitals with a higher proportion of midwife-attended births had lower cesarean and episiotomy rates.

Cesarean and episiotomy rates at hospitals with differing proportions of midwife-attended births, 2017

**Mean Hospital Cesarean Rate**

- None (0%): 24.6%
- Low (1-19%): 26.5%
- Moderate (20-39%): 25.6%
- High (≥40%): 24.4%

**Mean Hospital Episiotomy Rate**

- None: 7.1%
- Low: 6.4%
- Moderate: 3.9%
- High: 2.7%

Sources: HPC analysis of Massachusetts Department of Public Health birth record data for 2017 and Leapfrog hospital quality metrics as reported to the Center for Health Information and Analysis.
Hospitals with a higher proportion of midwife-attended births had lower episiotomy rates.

Notes: Beverly Hospital and Cambridge Health Alliance include hospitals and their associated birth centers. Hospitals not reporting Leapfrog quality metrics excluded from this analysis: Boston Medical Center, Martha’s Vineyard Hospital, Massachusetts General Hospital, Nantucket Cottage Hospital, North Shore Medical Center, Southcoast Hospitals Group. See appendix for detail on exclusions.

Sources: HPC analysis of Massachusetts Department of Public Health birth record data for 2017 and Leapfrog hospital quality metrics as reported to the Center for Health Information and Analysis.
Hospitals with a higher proportion of midwife-attended births had lower maternity spending.

Mean maternity episode spending at hospitals with differing proportions of midwife-attended births, 2017

- None (0%): $23,102
- Low (1-19%): $27,693
- Moderate (20-39%): $22,213
- High (≥40%): $20,952

Notes: Episodes include prenatal, delivery, and postpartum care, comprising 6 months before admission for a labor-and-delivery inpatient hospital stay, during the inpatient stay, and for 3 months after discharge.

Source: HPC analysis of All-Payer Claims Database 7.0 and Massachusetts Department of Public Health birth record data for 2017.
Hospitals with a higher proportion of midwife-attended births had lower maternity spending.

Mean maternity episode spending and percent midwife-attended births per hospital, 2017

Notes: Episodes include prenatal, delivery, and postpartum care, comprising 6 months before admission for a labor-and-delivery inpatient hospital stay, during the inpatient stay, and for 3 months after discharge. Beverly Hospital and Cambridge Health Alliance include hospitals and their associated birth centers. Hospitals with <20 births observed in APCD 7.0 excluded from this analysis: Fairview Hospital, Harrington Memorial Hospital, Holyoke Medical Center, Martha’s Vineyard Hospital, Nantucket Cottage Hospital. See appendix for detail on exclusions.

Source: HPC analysis of All-Payer Claims Database 7.0 and Massachusetts Department of Public Health birth record data for 2017.
The HPC’s findings suggest that greater CNM involvement could lead to lower costs and better outcomes in the Commonwealth.

A 10 percentage-point increase (from 17% to 27%) in the proportion of CNM-attended births would be associated with:

- A $530 reduction in maternity spending per maternity episode.
- A reduction in the Cesarean rate from 26.0% to 24.4% (approximately 3560 fewer cesarean births).
- A reduction in share of births in which episiotomies are performed from 6.0% to 4.5% (approximately 860 fewer episiotomies).

Notes: Spending model excludes highest 5% of spending, patients with hypertension or diabetes diagnosis, and hospitals reporting no midwife-attended births. Model adjusts for births in academic medical centers, length of inpatient stay, patient age, and cesarean birth, accounting for hospital-level clustering. Quality metric models exclude patients with hypertension or diabetes diagnosis and hospitals reporting no midwife-attended births. Models adjust for births in academic medical centers and patient age, accounting for hospital-level clustering. Reported coefficients statistically significant at p≤0.05. Baseline number of cesarean births and episiotomies was calculated using average statewide Leapfrog rates and total births reported to DPH at hospitals reporting Leapfrog metrics.

Source: HPC analysis of All-Payer Claims Database 7.0, Massachusetts Department of Public Health birth record data, and Leapfrog hospital quality metrics as reported to the Center for Health Information and Analysis.
Introduction

Maternity Care in Massachusetts

Variation in Midwifery Care

Outcomes Associated with Midwives in the Commonwealth

BARRIERS TO PRACTICE

Policy Recommendations

Data and Methods
Massachusetts ranks 32nd on the degree to which all types of midwives are integrated into the health system.

Researchers rated all states on scope of practice regulations, prescriptive authority, and practice autonomy for CNMs, CMs, and CPMs, and created a composite 100-point scoring system for midwife integration into health systems.

Massachusetts falls short on use of non-CNM midwives and use of alternative birth sites. CNM-specific limitations include lack of hospital admitting privileges.

In separate analyses, higher scores were associated with higher rates of vaginal delivery, and lower rates of cesarean birth, preterm birth, and low birth weight infants.
Massachusetts scores higher when considering integration and autonomy for CNMs alone, but barriers remain.

Massachusetts ranks 14th highest on CNM-specific measures, reflecting high scores on some measures of autonomous practice, but limitations include:

- Lack of access to hospital privileging or physician referral
- Physician referral/consultation difficult to access for birth centers
- Some prescription limitations
Expanded scope of practice does not necessarily translate to hospital policies that permit autonomous practice for CNMs.

1 **Hospital bylaws**, not regulated by state SOP,\textsuperscript{1,2} can exclude CNMs and other APRNs from their medical staff, require physician supervision for APRNs, and require nurses to admit patients under a physician’s name.\textsuperscript{3}

2 **Commercial payer policy** may constrain practice with additional credentialing requirements or by requiring CNMs to list a supervising physician to bill. Payer policy can also incentivize "incident-to billing" practices that distort care patterns and reduce CNM autonomy.

3 **Cultural and practice barriers also remain.** Definitions of obstetric risk, which often drive which patients can receive midwifery care, vary by hospital, and CNMs are often excluded from decision-making around risk. Likewise, physicians may be reluctant to cede influence over the hospital practice environment.\textsuperscript{1}


Further barriers persist in both expanding and diversifying the midwifery workforce.

- **There is only one midwifery education program in Massachusetts** at Baystate Medical Center in Springfield.¹

- **Most CNMs in Massachusetts are White non-Hispanic/Latino** (86%),² and prospective midwives of color face particular barriers to workforce entry.

- **Experiences of racism in midwifery education may hinder prospective midwives of color** in completing educational programs or participating in professional organizations for midwives, thereby impeding their entry into the profession.³

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1 Massachusetts Affiliate of the American College of Nurse Midwives. Become a Midwife. Available at: https://www.massmidwife.org/become-a-midwife/

2 HPC analysis of data from the 2018 Health Professions Data Series administered by the Massachusetts Board of Registration in Nursing in collaboration with the DPH Healthcare Workforce Center. Based on self-reported data, 86% of CNMs are White, non-Hispanic/Latino/Spanish; 4% are Hispanic/Latino/Spanish.

Alternative Birthing Sites

Birth centers can offer a more patient-centric, lower-intervention model of care, with care led by CNMs.

Providers seeking to open and operate non-hospital-affiliated birth centers may experience policy and regulatory barriers, as well as lower rates for commercial reimbursement for midwifery care.

- MassHealth covers services at non-hospital-affiliated birth centers.1

Birth centers tend to be paid less than hospitals for labor and delivery care because much of the payment for childbirth comes through hospital facility fees, and non-hospital affiliated birth centers are not eligible to receive facility fees.

Birth centers could provide more options for local births in areas of the Commonwealth where relatively low birth volume creates access challenges.

- Obstetric care is typically a low- or negative-margin service line for hospitals, particularly in low-birth-volume areas.
- Low-birth-volume areas such as Southeastern or Western Massachusetts have seen five hospital obstetric units close since 2017.2-6

4 Tobey Hospital’s Maternity Unit to Close in a Few Weeks. CapeCod.com. Dec 13, 2019. Available at: https://www.capecod.com/newscenter/legislative-effort-launched-in-wake-of-tobey-hospital-maternity-closure/#:~:text=WAREHAM%20%E2%80%93%20The%20Maternity%20Unit%20at%20Tobey%20Hospital%20is%20scheduled%20to%20close%20in%20February%202020%2C%20the%20future
Payment models may also impact use of midwives and alternative birth sites.

- Commercial payment policies tend to favor the medicalized birth paradigm and increase administrative complexity.
- Commercial payers typically reimburse CNMs at 85% or less of the rate of physicians, encouraging providers to use “incident-to billing” practices.
  - Under this practice, CNMs bill under a supervising physician’s ID, which reinforces reduced autonomy for CNMs, and can create billing difficulties for patients.
  - This practice also can disincentivize the expansion of midwifery programs.
- Bundled payment models for pregnancy and birth episodes – with the same payment rate whether a CNM or OB leads care – provide financial incentives for health systems to have CNMs lead care where appropriate.
  - The Purchaser Business Group on Health (PBGH), for example, is working with payers and multi-stakeholder groups to develop episodic / bundled payments to “control costs and encourage high-value care throughout pregnancy, childbirth and the postpartum period.”

Introduction
Maternity Care in Massachusetts
Variation in Midwifery Care
Outcomes Associated with Midwives in the Commonwealth
Barriers to Practice

POLICY RECOMMENDATIONS

Data and Methods
Summary of Findings

1. Increased rates of midwifery care in the Commonwealth would lead to lower costs and improved outcomes and could help to address longstanding disparities.

2. Despite Massachusetts granting full scope of practice authority to CNMs in 2012, hospital and payer policies may restrict autonomous practice.

3. Barriers persist in both expanding and diversifying the midwifery workforce in Massachusetts.
Policy Recommendations

INCREASE AND IMPROVE USE OF CERTIFIED NURSE MIDWIVES

- Reimburse for obstetric care with payment models that are neutral to birth setting and provider mix and rebalance payment towards labor costs and away from facility fees to incentivize use of CNMs and alternative sites, where appropriate.
- Improve public understanding and awareness of midwifery care and increase opportunities for patients to choose their provider type.
- Increase CNM and patient role in determining patient risk and deciding on appropriate interventions.

FACILITATE CERTIFIED NURSE MIDWIFE PRACTICE

- Modify hospital and payer policies and practices to align with state law that does not require CNMs to practice under physician supervision.
- Modify hospital bylaws and billing practices to permit APRNs to be part of hospital medical staff, admit their own patients, and bill directly.

SUPPORT ALTERNATIVE BIRTH SETTINGS

- Allow patients to seek safe and supportive non-hospital settings for birth based on their preferences and risk determinations.
- Re-evaluate regulatory and other barriers to the establishment and operation of non-hospital settings such as birth centers, especially in underserved communities.
- Support shared decision-making between patients and providers, and improve patients’ ability to make informed choices about their birth care.
Introduction

Maternity Care in Massachusetts

Variation in Midwifery Care

Outcomes Associated with Midwives

Barriers to Practice

Policy Recommendations

DATA AND METHODS
Data Sources and Methods

APCD 7.0
- 2016-2017 maternity episodes, which include 6 months before admission for a labor-and-delivery inpatient stay that took place during 2017, the inpatient stay, and 3 months after discharge, capturing 7,180 maternity episodes
- Data on spending and length of stay for commercially-insured individuals
  - Included claims for individuals with 12 months of coverage in both 2016 and 2017
  - Excluded repeating services (e.g., physical therapy or psychotherapy) from spending analyses

DPH BIRTH RECORD DATA
- Census of births in Massachusetts
- Data on birth volume, provider type, and patient race/ethnicity by hospital, 2017

DPH NURSE LICENSURE SURVEY
- Biannual survey of all Massachusetts nurses renewing their licenses
- Data on CNM demographics and practice, 2018

LEAPFROG HOSPITAL QUALITY METRICS
- Reported to the Center for Health Information and Analysis (CHIA)
- Data on hospital cesarean section and episiotomy rates, 2017
Stakeholders Consulted

- American College of Nurse Midwives Massachusetts Affiliate
- Baystate Franklin Medical Center
- Cambridge Health Alliance
- Cape Cod Hospital
- Massachusetts chapter of the American College of Obstetricians and Gynecologists
- Mass Midwives Alliance
- Midwives Alliance of North America
- Mount Auburn Hospital
- Seven Sisters Midwifery and Community Birth Center
- South Shore Hospital
- Researchers and clinicians
The Massachusetts Health Policy Commission, an independent state agency, strives to advance a more transparent, accountable, and innovative health care system through independent policy leadership and investment programs. The HPC’s goal is better health and better care – at a lower cost – for all people across the Commonwealth.

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www.mass.gov/hpc
HPC-Info@mass.gov
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Appendix
## Maternity Provider Landscape Detail and Sources

<table>
<thead>
<tr>
<th>Provider</th>
<th># in MA</th>
<th>Education &amp; Training</th>
<th>Licensed in MA by</th>
<th>Settings of Care in MA</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obstetrician/ Gynecologists</td>
<td>1042</td>
<td>Pre-medical undergraduate education, medical education, and postgraduate medical residency or fellowship. Complete medical licensing examinations, including specialty-specific examinations for certification by American Board of Medical Specialties.</td>
<td>Board of Registration in Medicine</td>
<td>Hospitals, offices</td>
<td>1-3</td>
</tr>
<tr>
<td>Nurse practitioners with OB/Gyn specialty</td>
<td>121</td>
<td>Undergraduate degree and graduate nursing education. Complete nursing licensure examination. Complete authorization as an Advanced Practice Registered Nurse.</td>
<td>Board of Registration in Nursing</td>
<td>Hospitals, offices</td>
<td>4,9</td>
</tr>
<tr>
<td>Registered nurses with OB/Gyn specialty</td>
<td>2698</td>
<td>Undergraduate nursing education. Complete nursing licensure examination.</td>
<td>Board of Registration in Nursing</td>
<td>Hospitals, offices</td>
<td>5,9</td>
</tr>
<tr>
<td>Certified Nurse Midwives</td>
<td>286</td>
<td>Bachelors degree and Registered Nurse licensure. Complete authorization as an Advanced Practice Registered Nurse. Midwifery education program, including clinical precepting. Graduate degree required for certification by American Midwifery Certification Board.</td>
<td>Board of Registration in Nursing</td>
<td>Hospitals, birth centers, offices</td>
<td>6,7</td>
</tr>
<tr>
<td>Certified Professional Midwives</td>
<td>40</td>
<td>Applicable coursework, work experience, and/or apprenticeship. Midwifery education program, including supervised clinical work. Certification based on demonstrated competencies.</td>
<td>Not licensed</td>
<td>Homes</td>
<td>7,8</td>
</tr>
<tr>
<td>Doulas</td>
<td>137</td>
<td>Many doulas complete training or certification programs, though neither is required for practice.</td>
<td>Not licensed</td>
<td>Hospitals, birth centers, offices, homes</td>
<td>10</td>
</tr>
</tbody>
</table>

1. Association of American Medical Colleges. Massachusetts Physician Workforce Profile. 2019. Available at: https://www.aamc.org/media/37941/download
2. American Board of Medical Specialties. Board Certification Requirements. Available at: https://www.abms.org/board-certification/board-certification-requirements/
4. Massachusetts Board of Registration in Nursing. About Board approved prelicensure nursing programs. Available at: https://www.mass.gov/service-details/about-board-approved-prelicensure-nursing-programs
5. Massachusetts Board of Registration in Nursing. About Board approved prelicensure nursing programs. Available at: https://www.mass.gov/service-details/about-board-approved-prelicensure-nursing-programs
6. HPC analysis of data from the 2018 Health Professions Data Series administered by the Massachusetts Board of Registration in Nursing in collaboration with the DPH Healthcare Workforce Center. For any further data requests or questions regarding the data collection please contact the Massachusetts Department of Public Health Office of Statistics and Evaluation Director, Sanouri Ursprung (sanouri.ursprung@state.ma.us)
8. HPC analysis of data from the 2018 Health Professions Data Series administered by the Massachusetts Board of Registration in Nursing in collaboration with the DPH Healthcare Workforce Center. For any further data requests or questions regarding the data collection please contact the Massachusetts Department of Public Health Office of Statistics and Evaluation Director, Sanouri Ursprung (sanouri.ursprung@state.ma.us)
## Hospitals Excluded From Analyses

<table>
<thead>
<tr>
<th>Hospital</th>
<th>&lt;500 births reported to DPH in 2017 (Slide 19)</th>
<th>Does not report Leapfrog quality metrics (Slide 30)</th>
<th>&lt;20 observed births in APCD 7.0 (Slide 32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baystate Franklin Medical Center</td>
<td>x</td>
<td></td>
<td></td>
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<tr>
<td>Boston Medical Center</td>
<td></td>
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<tr>
<td>Fairview Hospital</td>
<td>x</td>
<td></td>
<td>x</td>
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<tr>
<td>Falmouth Hospital</td>
<td>x</td>
<td></td>
<td></td>
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<tr>
<td>Harrington Memorial Hospital</td>
<td>x</td>
<td></td>
<td>x</td>
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<tr>
<td>Heywood Hospital</td>
<td>x</td>
<td></td>
<td></td>
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<tr>
<td>Holyoke Medical Center</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Martha’s Vineyard Hospital</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Massachusetts General Hospital</td>
<td></td>
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<tr>
<td>Morton Hospital</td>
<td>x</td>
<td></td>
<td></td>
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<tr>
<td>Nantucket Cottage Hospital</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>North Shore Medical Center</td>
<td></td>
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<tr>
<td>Southcoast Hospitals Group</td>
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<td></td>
<td>x</td>
</tr>
<tr>
<td>Steward Norwood Hospital</td>
<td>x</td>
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</tbody>
</table>
Commercially-insured births observed in the APCD had similar patterns of midwife involvement as all births.

All births and observed commercially-insured births at hospitals with differing proportions of midwife-attended births, 2017

Notes: Commercially-insured births observed in the APCD include births January 1 – September 30, 2017.
Source: HPC analysis of All-Payer Claims Database 7.0 and Massachusetts Department of Public Health birth record data.
Commercial claims data does not accurately capture midwife-attended births, which may obscure provider quality of care measures.

Notes: Midwifery care in the APCD is measured as a percent of all labor-and-delivery stays per hospital that include any claim, for any type of service, billed using either a midwife NPI or billed incident-to an obstetrician NPI using modifier SA or SB. Beverly Hospital and Cambridge Health Alliance include hospitals and their associated birth centers.

Source: HPC analysis of All-Payer Claims Database 7.0 and Massachusetts Department of Public Health birth record data for 2017.