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Caring for Women: A Profile of the Midwifery Workforce in Massachusetts

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CARING FOR WOMEN

A Profile of the Midwifery Workforce
in Massachusetts

APRIL 2011

CENTER FOR WOMEN IN POLITICS & PUBLIC POLICY
McCORMACK GRADUATE SCHOOL OF POLICY AND GLOBAL STUDIES



The Center for Women in Politics & Public Policy

The mission of the Center for Women in Politics & Public Policy is to promote women's leadership by providing quality education, conducting research that makes a difference in women's lives, and serving as a resource for the empowerment of women from diverse communities across the Commonwealth, the nation and the world. Recognizing the talent and potential of women from every community, and guided by the urban mission of an intellectually vibrant and diverse university in the heart of Boston, the Center seeks to expand the involvement of women in politics and their influence on policies that affect them, their families and their communities. Founded in 1994, the Center is located at the University of Massachusetts Boston's McCormack Graduate School of Policy and Global Studies and oversees two graduate certificate programs: the Program for Women in Politics & Public Policy and the (online) Program for Women's Leadership in a Global Perspective.

About the Authors

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About the Midwifery Workforce & Public Policy Initiative

The Massachusetts Midwifery Workforce Profile Project is part of a broader Center initiative that analyzes the midwifery workforce in Massachusetts and New England in the context of public policy development. The initiative aims to generate analyses based on research studies and strategy forums to inform public policies related to the role of midwives in the health care system. In accordance with the Center's mission to conduct research that makes a difference in women's lives, the initiative seeks to improve the lives of women who serve in paid caregiving roles as midwives and women who are care recipients by ensuring the availability of high-quality, cost-effective health care options and care providers for all populations of women.

A related project, *Midwifery Care in New England: Addressing the Needs of Underserved and Diverse Communities of Women*, was funded by the U.S. Department of Health and Human Services (HHS) Office on Women's Health (Region I) and a grant from the March of Dimes—Massachusetts Chapter. In September 2010, the Center convened two regional roundtable sessions of midwives and other health care stakeholders from across New England to address challenges and opportunities related to the provision of midwifery care to underserved populations and communities of women.



CARING FOR WOMEN: A PROFILE OF THE MIDWIFERY WORKFORCE IN MASSACHUSETTS

Dorothy Brewin, CNM, PhD, and Christa Kelleher, PhD

APRIL 2011

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EXECUTIVE SUMMARY

Overview

Midwives are increasingly the lead maternity caregivers for women in the United States. In Massachusetts, the number of nurse-midwife-attended births more than doubled between 1990 and 2008 and there has also been a recent uptick in the rate of home birth. There is growing recognition that midwifery care is essential to achieving evidence-based, low-intervention, less costly maternity care, improved outcomes for mothers and babies – particularly for vulnerable populations, a reduction in the cesarean birth rate, and increased access to reproductive, maternity, and primary care. There is also an emerging concern about the future of the nurse-midwifery workforce given midwives' average age, retirement trends, limited number of midwifery education programs, and future supply of nurse-midwives.

This profile of the Commonwealth's midwifery workforce provides state-level data on the demographic characteristics, employment context, and practice scope of midwives. It also offers a snapshot of populations served by midwives and public policy issues that affect midwives and midwifery care in Massachusetts. The report is based on a survey administered to midwives living and/or working in the state supplemented by in-depth interviews with five midwives, one obstetrician, and one state public health official. This report uniquely analyzes data collected from both certified nurse-midwives (CNMs) and direct-entry midwives (DEMs), including certified professional midwives (CPMs); this summary distinguishes between these two groups and primarily focuses on midwives who are currently in practice. The overall survey response rate was 60% and includes 290 CNMs and 18 CPMs/DEMs – all of whom are women.

Demographic Profile

Similar to midwives nationally, midwives in Massachusetts tend to be primarily non-Hispanic white. The average age of CNMs is 51 and 53 for CPMs/DEMs. The Massachusetts nurse-midwifery workforce is highly educated (86% have Master's degrees and 4.2% have Doctoral degrees). More than a quarter of CNMs hold additional certifications with many having a second advance practice specialization. The majority of CPMs/DEMs (73.4%) have Bachelor's degrees.

Populations Served

While midwives are more commonly known for the care they provide to childbearing women, midwives serve women in all stages of life. A substantial number of CNMs care for young women (under 20 years of age), recent immigrants, and women whose first language is not English. About one-third (33%) of CNMs indicated that at least 31% of their patients are Hispanic or Latina. The majority of CNMs noted that a significant proportion of their service reimbursement comes through government-assisted health care.

Employment

Given that CPMs/DEMs care for women who birth at home and CNMs care for women in hospitals and birth centers, there are variations in work structure and the nature of employment. CPMs/DEMs are often self-employed and most CNMs work for large organizations. These employment variations, coupled with the fact that CPMs/DEMs are not part of the formal health care system (which is particularly significant in terms of credentialing and reimbursement), result in a notable income disparity between the two groups.

The majority of CNMs (61.7%) currently practice in either a hospital clinic or medical center. About one quarter of CNMs (24.5%) work in community health centers. The majority of CNMs (84%) work in a group practice. Many midwives have additional responsibilities beyond their clinical duties. The majority of CNMs and CPMs/DEMs primarily precept midwifery students. CNMs also precept nursing and medical students and/or medical residents.

The majority of CNMs (71.5%) work full-time and 28.5% work part-time. Full-time CNMs earn a median of \$92,000 and part-time CNMs earn a median of \$65,500. All CPMs/DEMs identified their work location as either their or their client's home and over one third of CPMs/DEMs work in midwife-owned practices. For CPMs/DEMs, 21.4% work full-time and 78.6% part-time. Full-time CPMs/DEMs earn a median of \$37,500 and part-time CPMs/DEMs earn a median of \$16,428.

Access to midwifery services varies across the Commonwealth. Middlesex and Suffolk Counties have the highest concentrations of midwives; Berkshire County has a low concentration of CNMs, but a relatively higher concentration of CPMs/DEMs; both Barnstable and Dukes Counties have equally low concentrations of CNMs and CPMs/DEMs. Most hospitals in the Commonwealth offer midwifery services and many of the hospitals that have a 20% or higher rate of CNM-provided care are safety net hospitals.

Practice Scope and Barriers

Midwives primarily care for childbearing women, yet a significant segment of nurse-midwives in Massachusetts deliver primary care, especially to vulnerable and underserved populations of women. Nearly four out of ten CNMs (38.5%) indicated that primary care is one of their areas of practice.

In the survey, midwives were asked about whether medical liability concerns influenced clinical decision-making and 74% of CNMs and 47% of CPMs/DEMs reported slight to moderate influence. For those midwives who indicated that their practice is influenced by malpractice concerns, most CNMs and just less than one in five CPMs/DEMs reported that they order more tests. Approximately half of CNMs but only 6% of CPMs/DEMs introduce interventions or intervene earlier.

One of the study's key findings is that all CPMs/DEMs and 81% of CNMs identified obstacles to their preferred style of practice and the majority of midwives indicated that legislative change could address identified practice constraints. The data demonstrate that current regulatory statutes or lack thereof in the Commonwealth serves as a barrier to the preferred style of midwifery practice. First, many CNMs articulated a concern about physician supervisory language in their prescriptive authority that restricts their ability to become Licensed Independent Practitioners (LIPs) and limits access to hospital admitting privileges. A second obstacle identified by CNMs is the lack of enabling legislation for certified midwives (CMs) to practice in Massachusetts.

Further, the majority of CNMs (57%) identified lack of primary care education as a barrier to the delivery of primary care; other primary care barriers included institutional rules and structure, insurance reimbursement rates, the public's perception of midwifery, state law governing midwifery practice, and lack of physician understanding.

The majority of CPMs/DEMs (71%) indicated that they face back-up challenges. For CPMs/DEMs, the data suggest that the absence of enabling legislation poses challenges both in terms of women for whom they care and their own practices. Specifically, CPMs/DEMs do not always have access to adequate emergency supplies and when they have to transfer a client to the hospital they often do not have relationships with accepting providers, making an uncommon but stressful situation more problematic.

The Future of the Midwifery Workforce in Massachusetts

The Commonwealth faces a rising cesarean rate, rapidly increasing health care costs, and stark and persistent racial/ethnic disparities in infant and maternal health outcomes. Policymakers and health care stakeholders should consider the significant contributions of midwives to the Massachusetts health care system when engaged in efforts to increase quality of care, reduce costs, and ensure access to essential services, particularly to vulnerable populations of women. The capacity to deliver primary care services across the Commonwealth may be enhanced with further integration of nurse-midwives into the primary care delivery system and appropriate reimbursement to such providers. Furthermore, given that there is now considerable attention to increasing the active participation of consumers into health care decision-making, the midwifery model of personalized patient/client-centered care encounters will be an additional strength that midwives bring to health care teams in the future.

The most pressing concern for both groups of midwives is that they collectively represent an aging workforce. Nearly half of all midwives in Massachusetts have been practicing for over 10 years and many for more than two decades. Over 30% of CNMs indicated possible retirement by 2020. With an average age of 53, it is likely that CPMs/DEMs will soon also face a workforce shortage. A midwifery workforce shortage would pose challenges in meeting women's reproductive and maternal health needs, particularly for the vulnerable populations served by CNMs. Policymakers and health care system stakeholders should consider how to replace that level of skill and ensure maintenance of the essential relationships that midwives have with both their patients/clients *and* the communities in which they work. Additionally, there must be consideration of how to increase the racial and ethnic diversity of the midwifery workforce and how to ensure that there are ample opportunities and financial resources for interested individuals to pursue midwifery as a career. It is also important for policymakers to consider the issue of licensure for certified midwives (CMs) in Massachusetts.

INTRODUCTION

Midwifery Care in the United States

For centuries, midwives in the United States have provided care to women and families with a particular focus on women's reproductive and maternal health needs. Midwives are increasingly the lead maternity care-givers for women as the percentage of births attended by midwives has nearly doubled in the past two decades.¹ From 1990 to 2008, the number of nurse-midwife-attended births in Massachusetts more than doubled; the Commonwealth has also seen a recent increase in home births.² In addition to serving as maternity care providers, nurse-midwives frequently engage in the delivery of primary care to women.³

Several recent analyses of midwifery care emphasize its benefits and call for increased utilization of midwives in the United States.⁴ There is growing recognition that midwifery care is vital to achieving evidence-based, low-intervention, less costly maternity care, improved outcomes for mothers and babies – particularly for disparate and vulnerable populations, a reduction in the cesarean birth rate and increased availability of and access to reproductive, maternity, and primary care.

Evidence-Based Maternity Care

The 2008 report *Evidence-Based Maternity Care: What It Is and What It Can Achieve* outlines existing opportunities for improving the quality and reducing the costs associated with procedure-intensive maternity care through wider implementation of evidence-based maternity care in the United States. The report documents the country's relatively poor record on a number of key maternal and neonatal health measures, including low and very-low birthweight, preterm birth, maternal labor and birth complications, initial and repeat cesareans in low-risk women, cerebral palsy, mental retardation, and perinatal mortality.⁵ While Massachusetts ranks higher than most states on many of these indicators, significant racial/ethnic disparities persist, resulting in poor health outcomes for mothers and babies. Furthermore, Massachusetts has one of the highest

cesarean birth rates in the country at 34.3%.⁶

The authors of *Evidence-Based Maternity Care* cite "primary reliance on specialists for providing maternity care to a predominantly healthy, low-risk population" and "loss of core childbearing knowledge and skills among health professionals"⁷ among the barriers to evidence-based maternity care. They conclude that "midwives are more likely to have skills that support physiologic processes in healthy women and newborns, to value such supportive care, and to make judicious and conservative use of interventions."⁸ Furthermore, a 2008 Cochrane review of midwife-led care found that benefits of such care included a reduction in regional analgesia use, as well as fewer episiotomies and instrumental delivery. Midwife-led care also increased the woman's chance of feeling in control during labor, having a spontaneous vaginal birth, and initiating breastfeeding.⁹

Costs of Maternity Care

In the American health care system, childbirth is the leading reason for hospitalization and "hospital charges for birthing women and newborns far exceed those of any other condition" due to the tremendous number of births and technology-intensive nature of maternity care in the United States.¹⁰ Health care costs in the Commonwealth represent a serious and urgent issue for the state which "consistently has the highest health expenditures per resident of any state in the nation."¹¹ Hospital charges constitute a major component of total health care expenses: "In 2004, hospital expenditures accounted for 39.9% of Massachusetts health expenditures, 3.3% more than their 36.6% share of US health expenditures."¹² Because of lower cesarean rates, judicious use of interventions by midwives and improved neonatal outcomes, midwives have been credited with being cost-effective.¹³

Access to Care

According to the Kaiser Family Foundation, the "current health care workforce will be insufficient to meet future health needs," particularly in terms of services "important to women

such as primary care, mammography, obstetrics/gynecology, abortion and mental health."¹⁴ Massachusetts faces regional challenges in terms of access to care providers, including obstetrical/gynecological and primary care providers.¹⁵ Over a decade ago, Declercq and colleagues noted the "persistence of barriers to health services for women and children" and argued that "CNMs [certified nurse-midwives] hold particular promise in easing the problems of access for women, newborns, and families with children."¹⁶

Workforce Trends

Alongside the increase in midwives as maternity care providers, growing recognition of the benefits of midwifery care, and ongoing efforts to ensure greater access to and utilization of midwifery care in the United States, there are troubling trends regarding the future of the workforce. The number of newly certified CNMs and certified midwives (CMs) has gone from 458 in 2000 to 325 in 2009.¹⁷ The average age and retirement trends of midwives, combined with a decline in accredited and pre-accredited midwifery education programs admitting students, have also sparked concern.¹⁸ The workforce challenge is real: "For midwifery care to be an option for the majority of women in the United States, the profession must not only replace the retiring midwives but increase the actual number of midwives in the workforce. This is a serious problem for the profession."¹⁹

Limited Data

While midwives are an essential segment of the health care workforce as women's health providers, in many ways their roles and contributions in the health care delivery system remain unacknowledged and possibly undervalued. Moreover, there are limited data available regarding the demographics, education and training experiences, work environments, geographic/regional distribution, insurance arrangements, employment patterns, compensation levels, and practice models of midwives. There are also few demographic data available about the types of populations served by midwives and scope of care

A Brief History of Midwives in Massachusetts

Midwifery in the Commonwealth is neither new nor without controversy. Colonial women saw childbirth as a social event, gathering together female family and friends for support and a skilled midwife for guidance. Midwives were highly valued, but over the eighteenth and nineteenth centuries, the normal process of birth slowly shifted for both women and their care providers. Childbirth became characterized by disease and medicalized, requiring the assistance of a medical doctor. This shift and the exclusion of women from formal education was a major factor in the disappearance of midwifery care in the Commonwealth.

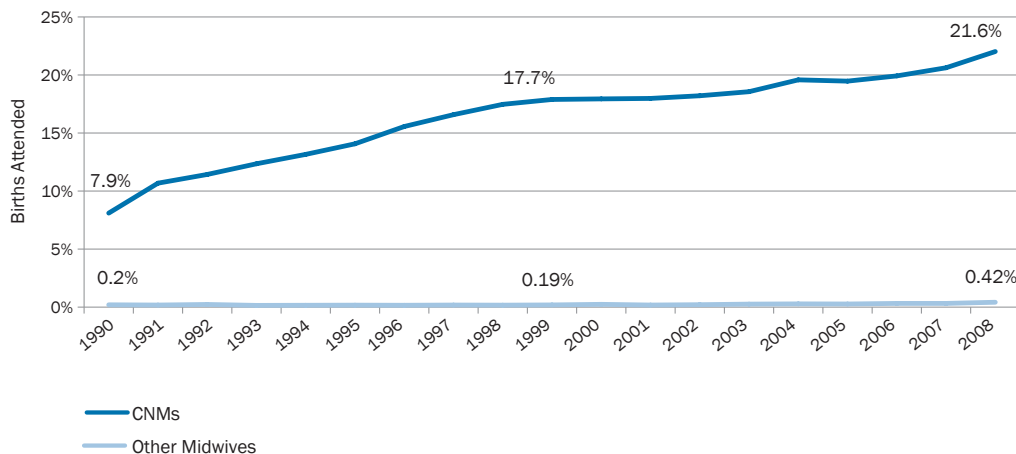
During the early part of the twentieth century, the Massachusetts Supreme Court ruled in the Hanna Porn case that midwifery was the practice of medicine. Since there was no legislation allowing for the practice of midwifery at the time, this resulted in a prohibition of midwifery practice in Massachusetts for seventy years.²⁰ However, the 1920s and '30s witnessed an emergence of nurse-midwifery across the United States, including in the rural mountains of Kentucky, in large urban areas, and in the south. As one scholar notes, "the profession almost completely disappeared by the early 1900s with the takeover by modern obstetrics, but began a constructed resurgence beginning in the 1920s-1930s as it aligned with nursing and public health to attend poor women with few services."²¹ Decades later, in 1977, midwives who were nurses in Massachusetts spearheaded a successful effort to pass legislation allowing for the practice of nurse-midwifery under physician supervision in a hospital setting with regulation by the Board of Registration in Nursing (BORN).

A unique feature of the enabling legislation for nurse-midwives in Massachusetts was a restriction regarding the place of birth and midwifery practice was limited to licensed hospital facilities. Consequently, women who desired to give birth at home were forced to seek other birth attendants. In 1987, Janet Leigh, a nurse practicing as a lay midwife and attending women in their homes, was charged with practicing midwifery without authorization by the Board of Nursing. The case was heard by the Massachusetts Supreme Court, which ruled that Leigh, as a nurse, could not practice midwifery without either additional nurse-midwifery education or relinquishing her nursing license. This ruling left open the possibility that birth attendants, other than nurses or nurse-midwives, might be able to legally assist women electing to have home births.²² During the time period when nurse-midwives were restricted from attending women desiring home births in the Commonwealth, women who wanted to give birth at home sought out other alternatives. Direct-entry midwives (DEMs), including certified professional midwives (CPMs), defined more comprehensively in the following section, emerged as non-nurse birth attendants and, at present, remain unregulated in Massachusetts. Over time the enabling legislation for nurse-midwives was amended to allow for practice in licensed birth centers and eventually in the home. The requirement of physician supervision remains in place.

In the 33 years since nurse-midwifery was legalized in Massachusetts, midwifery has expanded greatly in the Commonwealth. Midwives work in a variety of practice settings and serve a diverse group of women. As indicated earlier, Massachusetts has experienced a significant growth in midwife-attended birth over the past 20 years. As shown in Figure 1, CNMs attended over one-fifth of vaginal births in 2008.

It is more difficult to assess growth in home birth and birth attendance by direct-entry midwives since births attended by DEMs, including certified professional midwives, have not always been formally recorded. However, Massachusetts birth certificate data demonstrate that the out-of-hospital birth rate has remained stable with a recent uptick in births attended by CPMs/DEMs.

Figure 1. Spontaneous Vaginal Births Attended by CNMs and Other Midwives, Massachusetts, 1990-2008



Source: Centers for Disease Control and Prevention. National Center for Health Statistics. VitalStats.
<http://www.cdc.gov/nchs/vitalstats.htm>. [Accessed on December 20, 2010.]

provided. This lack of systematic and comprehensive state-level data about midwives serves as an impediment to fuller recognition and integration of these practitioners into the health care system and into policymaking processes that affect them as well as the women and communities they serve.

This report provides a snapshot of the midwifery workforce in Massachusetts with a focus on midwives' demographic characteristics, employment contexts, practice scope, and process of care. The section on the facing page offers an historical context for understanding the current practice and policy environment in which midwives in the Commonwealth work.

The following briefly outlines the various paths to midwifery and types of midwives in the United States, with an emphasis on the regulatory and licensing environment for Massachusetts midwives.

Paths to Midwifery

There are various routes to midwifery and different types of midwives in the United States. This report uniquely analyzes workforce data collected from both nurse-midwives and direct-entry midwives, including certified professional midwives. Within the two broad categories of midwifery (nurse-midwifery and direct-entry midwifery), differences in midwifery education/training and certification mechanisms exist, as do differences in scope of practice and practice setting.²³ Yet “despite their differences, most midwives have much in common, including a philosophical adherence to the midwifery model of care”²⁴ which emphasizes “normality and the natural ability of women to experience birth with minimum or without routine intervention.”²⁵ Thus, “midwives are experts in protecting, supporting, and enhancing the normal physiology of labor, delivery, and breastfeeding.”²⁶

Currently there are two groups of midwives practicing in the United States. One group includes certified nurse-midwives (CNMs) and certified midwives (CMs) who are educated in the discipline of midwifery through university programs accredited by the Accreditation Commission for Midwifery Education (ACME) and certified by the American Midwifery Certification

Board (AMCB). Another group, comprised of direct entry-midwives (DEMs) and certified professional midwives (CPMs), are educated in the discipline of midwifery through self-study, apprenticeship, and/or a midwifery educational program. The North American Registry of Midwives (NARM) certifies CPMs. Direct-entry midwives may also include midwives who practice without national certification.²⁸

Of the three national midwifery credentials, “certified nurse-midwives (CNMs) are regulated in all states, certified midwives (CMs) are regulated in several states, and certified professional midwives (CPMs) are regulated in about one-half of the states, with efforts under way to develop legislation in the remaining states.”²⁹ Given that Massachusetts does not currently license CMs (who are not nurses; only CNMs are licensed in the state), this report describes the midwifery workforce in the Commonwealth which is comprised of CNMs, CPMs, and DEMs. In general, the report provides analyses of data broken down according to the two broad categories of midwifery: nurse-midwifery (CNMs) and direct-entry midwifery (CPMs and DEMs).

It is important to note that the legal and policy contexts in which midwives practice influence the size and nature of the midwifery workforce. Declercq and colleagues confirm that there is a “strong relationship between state laws and workforce size, with a much larger proportion of CNMs located in states with supportive regulatory and reimbursement environments.”³⁰ Based on 1995 data, these authors ranked Massachusetts as having a medium level of regulatory support for nurse-midwifery practice; they also noted some regional clustering with all New England states as having either high or medium support scores.³¹

Table 1 on page 10 outlines midwifery types as well as certification/licensing processes and provides a context for understanding the data presented in this report.

The Midwives Model of Care, defined by the Midwifery Task Force,²⁷ includes:

- Monitoring the physical, psychological, and social well-being of the mother throughout the childbearing cycle
- Providing the mother with individualized education, counseling, and prenatal care, continuous hands-on assistance during labor and delivery, and postpartum support
- Minimizing technological interventions
- Identifying and referring women who require obstetrical attention



Table 1. Midwifery Types, Certification, & Licensing

Midwife Type/Designation	Definition/Description	Accrediting Agency	Board(s)	Professional and/or Standard-Setting Organization	Licensing/Regulation in Commonwealth of Massachusetts
Certified Midwife (CM)	A midwife educated in the discipline of midwifery through an ACME-accredited university program who has passed an AMCB certification examination; not a registered nurse	Accreditation Commission for Midwifery Education (ACME) sets education standards and criteria, recognized by the U.S. Department of Education	American Midwifery Certification Board (AMCB) (certifies, recertifies, disciplines)	American College of Nurse-Midwives (ACNM) establishes practice and educational standards	Not licensed to practice in MA
Certified Nurse-Midwife (CNM)	A midwife educated in the disciplines of midwifery and nursing through an ACME-accredited university program and who has passed a AMCB certification examination	Accreditation Commission for Midwifery Education (ACME) sets education standards and criteria, recognized by the U.S. Department of Education	American Midwifery Certification Board (AMCB) (certifies, recertifies, disciplines)	American College of Nurse-Midwives (ACNM) establishes practice and educational standards	Regulated by the Board of Registration in Nursing under the Nurse Practice Act
Certified Professional Midwife (CPM)	A midwife educated in the discipline of midwifery through self-study, apprenticeship and/or a midwifery educational program who has met the standards for certification set by NARM	Midwifery Education Accreditation Council (MEAC) sets educational standards and criteria; accredits education programs; does not accredit or evaluate self-study or apprenticeships; approved by the U.S. Department of Education	North American Registry of Midwives (NARM) (certifies, recertifies, disciplines)	Midwives Alliance of North America (MANA) (professional organization for all midwives); National Association of Certified Professional Midwives (NACPM), sets practice standards	Legal by judicial interpretation; no law requiring licensing of midwives who are not nurses
Direct-Entry Midwife (DEM)	A midwife educated in the discipline of midwifery through self-study, apprenticeship and/or a midwifery educational program			Midwives Alliance of North America (MANA) (professional organization for all midwives)	Legal by judicial interpretation; no law requiring licensing of midwives who are not nurses

METHODS

The research design included a survey administered to midwives living and/or working in the Commonwealth of Massachusetts during spring 2010 supplemented by key informant interviews with five midwives, an obstetrician, and a state public health official for a total of seven interviews. The following section briefly explains the conduct of the study; for a more comprehensive overview of the study's methods, please see Appendix A on page 34.

The sampling frame included midwives of all backgrounds and types (including CNM, CM, CPM, and DEM) residing in Massachusetts. Researchers collected all available names and mailing addresses for midwives working in Massachusetts but living in another

state, midwives living and working in Massachusetts, and midwives living in Massachusetts but working elsewhere. Researchers utilized three different data sources: 1) The Division of Health Professions Licensure (DHPL), Department of Public Health, Commonwealth of Massachusetts Executive Office of Health and Human Services; 2) The American College of Nurse-Midwives (ACNM); 3) Directory of direct-entry midwives (including CPMs) available from the Massachusetts Midwives Alliance (MMA) website and an Internet search of midwifery practices in Massachusetts.

The paper survey instrument was 10 pages long and included 79 questions in five areas: professional background (17 items), work settings (10 items), work (28 items), patients/clients (10 items), and respondent demographic characteristics (14 items). For questions

regarding birth rates, areas of practice, and income, respondents were asked to provide 2009 data. All other questions sought current information. For some questions, respondents were able to provide further descriptive information as in the case of response option of "other." Only five questions were fully open-ended. The full survey may be accessed at: www.mccormack.umb.edu/centers/cwppp/mamidwives.php.

The following analysis is based on 309 surveys out of 519 for a 60% response rate. Survey data were entered into SPSS 18 and several coding checks were conducted to ensure inter-coder reliability and accurate data entry. As is indicated by the number of survey responses provided for each table/figure, survey respondents sometimes did not answer every question. Therefore, missing responses are generally not reported

in the data provided and only valid percents are utilized. Several questions allowed for multiple responses (“check all that apply”) and this is indicated in the tables/figures generated from such data. Visual displays of data (tables/figures) generally distinguish between the two main groups of midwives analyzed in this report: nurse-midwives (CNMs) and direct-entry midwives (DEMs), including certified professional midwives (CPMs). CNMs who are also a CPM or DEM were included in the CNM category for analytical purposes. Tables and figures based on midwives currently working as midwives include labels such as “Working CNMs” and/or “Working CPMs/DEMs.”

Three researchers were involved in conducting interviews held primarily at the work setting of the study participant, in a private and confidential room, or at the home of the participant. Interviews lasted 43 minutes on average. The semi-structured interview guide contained 20 questions covering three main topics: respondent background, midwifery care, and midwifery workforce. Interviews were transcribed by a professional transcriptionist, checked for accuracy, and coded and analyzed in NVivo.

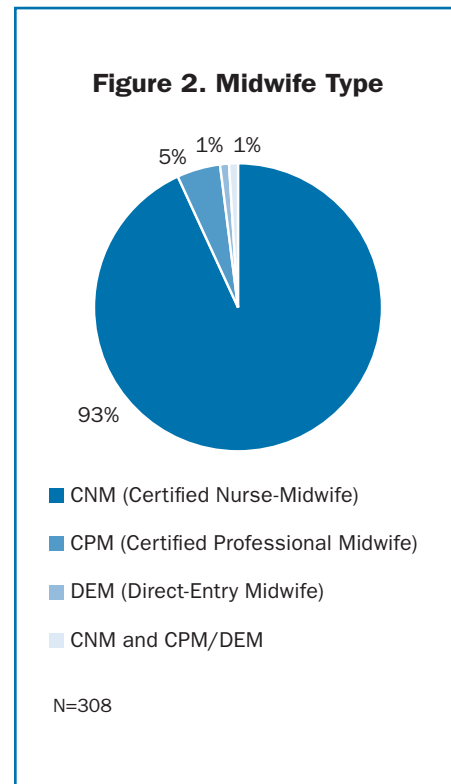
DEMOGRAPHIC PROFILE

One of the primary aims of this report is to provide a snapshot of midwives who work and/or live in Massachusetts. This section offers essential information about the composition of the midwifery workforce with a focus on educational background, racial/ethnic heritage, age, years in the field, and additional certifications held.

Midwives in Massachusetts

According to the data sources utilized for the survey component of this study (discussed in more detail in “Methods”), approximately 500 certified nurse-midwives (CNMs) and approximately 40 certified professional midwives (CPMs) and direct-entry midwives (DEMs) were identified as living and/or working in the Commonwealth.³² While it is not possible to provide a more precise number of each type of midwife residing and/or working in Massachusetts, this study’s survey respondents generally reflect the

breakdown of the two general types of midwives in the state – nurse-midwives and direct-entry midwives. As shown in Figure 2, the vast majority (N=287 or 93%) of all survey respondents (N=308) are CNMs.³³ An additional one percent of respondents are CNMs and CPMs/DEMs (N=3). Five percent are CPMs (N=15) and one percent are DEMs (N=3). As explained earlier, for analytical purposes, the report distinguishes between the nurse-midwifery (CNMs) and direct-entry midwifery groups (CPMs/DEMs), with those midwives who are CNMs and CPMs/DEMs included in the CNM category. Therefore, the CNM group is comprised of 290 respondents and the CPM/DEM group is comprised of 18 respondents. A further analytical distinction is made in most sections of the report between midwives who are employed as midwives and those not currently working as midwives. All survey respondents indicated that they are female.



Racial and Ethnic Background

As with midwives nationally, midwives in Massachusetts tend to be primarily non-Hispanic white. Only 4% of working CNM respondents and no working CPM/DEM respondents identified as Hispanic or Latina (not shown).

Race	CNMs	CPMs/DEMs
White	92.3%	93.8%
Black/African-American	2.6%	0%
Asian	2.6%	0%
Native American/Other Pacific Islander	0%	0%
American Indian/Alaskan Native	1%	0%
Multiracial	3.1%	0%
Other	1.5%	6.3%
N	196	16

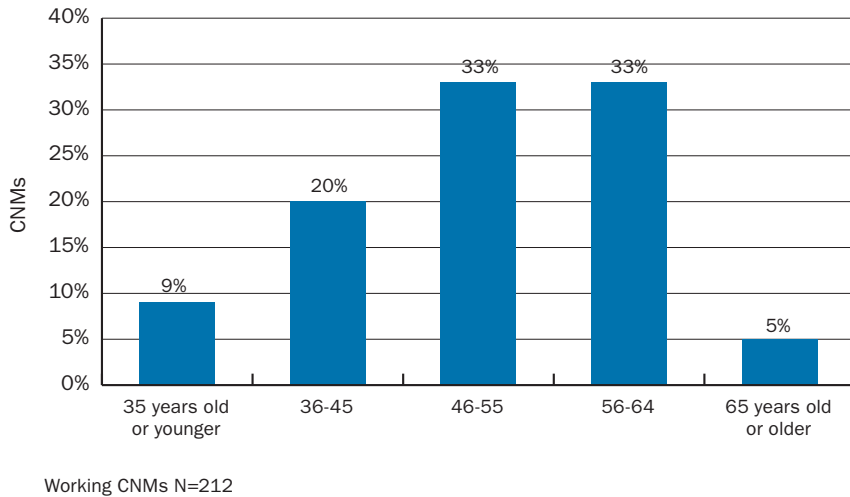
The majority of working CNMs (92.3%) identified as white, 2.6% as black/African-American, 2.6% as Asian, 1% as American Indian/Alaskan Native, and 3.1% as multiracial. Table 2 also shows limited racial/ethnic variation in the CPM/DEM community as 93.8% of working CPMs/DEMs indicated that they are white. For all midwives surveyed, 102 (47.7%) indicated that they are competent in a language other than English. The majority indicated that they are competent in one language other than English, and 24 responded that they are competent in two or more languages in addition to English (not shown).

Age

Midwives who completed the survey and provided the year in which they were born are 50.9 years old on average and the median age is 53, which indicates that half of the respondents are older than 53. For working CNMs, the average age of respondents is 51.1 and for working CPMs/DEMs, the average age is 52.8.

As Figure 3 demonstrates, many CNMs working in Massachusetts are older than 55. There is a relatively smaller group of colleagues who are younger. This younger group is not large enough to replace older midwives who may be expected to retire in the next decade or so. Nearly four out of ten working CNMs are 56 years of age or older. Approximately one third (32.7%) are 46-55 years of age and just over 28% are 45 years old or younger. As is discussed in more

Figure 3. Age Distribution, CNMs



detail in “The Future,” the aging of the midwifery workforce, nationally and in Massachusetts, is cause for concern.

Years Worked as Midwife

When asked about the number of years they have worked as a midwife, counting a year as six months or more, over one-third (37%) responded they have worked as a midwife ten years or less and the same number (37%) have worked 11-20 years in the field, as shown in Figure 5.

Just over a quarter of CNMs (26%) indicated that they have worked as a midwife for 21 years or more.³⁴

Demonstrated in Figure 6, over half of CPM/DEM respondents (55%) indicated that they have worked as a midwife for ten years or less. More than a quarter (28%) responded that they have worked as a midwife for 11-20 years and 17% for 21-30 years.

Educational Background

The national nurse-midwifery workforce is highly educated. This is also the case for Massachusetts nurse-midwives. According to the latest ACNM membership survey analysis, the majority of CNMs who responded to that survey indicated that they earned

Figure 4. Age Distribution, CPMs/DEMs

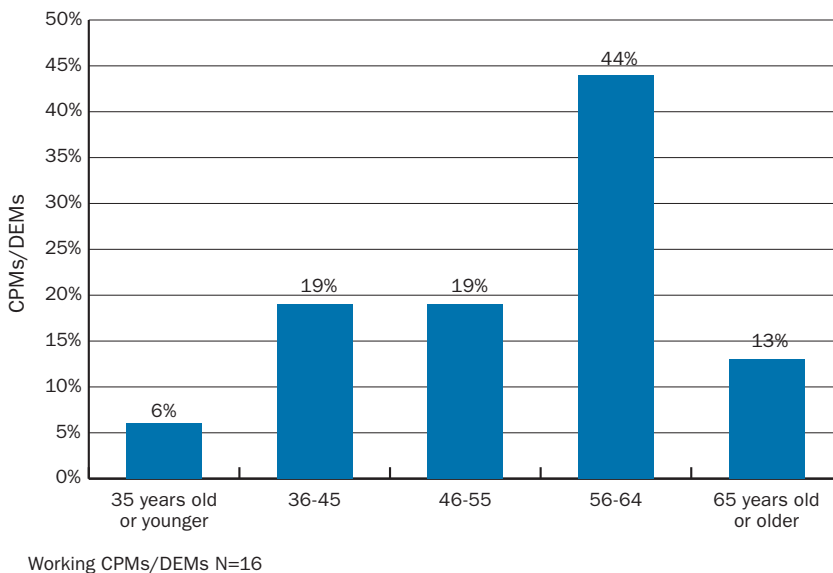
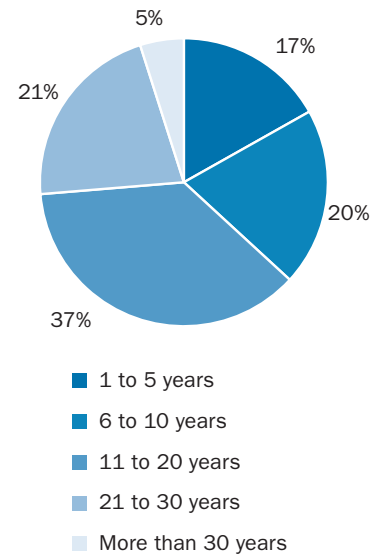


Figure 5. Years Worked as Midwife, CNMs

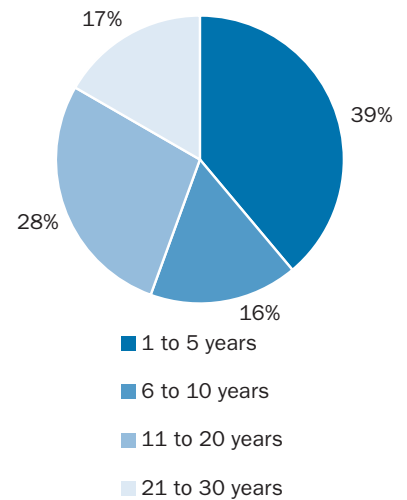


N=285

Note: Respondents were asked to count any year in which they worked six months or more as a year.

a graduate degree (82.3% held Masters and 7.5% held Doctorates as highest degree earned).³⁵

Figure 6. Years Worked as Midwife, CPMs/DEMs



N=18

Note: Respondents were asked to count any year in which they worked six months or more as a year.

Table 3. Academic Degree Earned, CNMs and CPMs/DEMs

Type of Degree	CNMs	CPMs/DEMs
Associate Degree	19.6%	13.3%
Bachelor in Nursing	65%	6.7%
Bachelor in other field	41.3%	66.7%
Masters including MS, MSN, MPH	86%	6.7%
Doctorate including PhD, DrPH, DNP	4.2%	0%
Other	12.9%	53.3%
N	286	15

Note: Respondents were asked to “check all that apply.”

As demonstrated in Table 3, more than eight out of 10 CNMs (86%) have earned Master’s degrees and CNMs who have earned doctorates comprise 4.2% of all CNM respondents. The majority of CPMs/DEMs (73.4%) hold Bachelor’s degrees.

Table 4. Most Common Midwifery Programs Completed, CNMs

Midwifery Program	CNMs
Yale University	15.3%
Frontier School of Midwifery and Family Nursing	14.3%
Boston University	9.8%
Baystate Medical Center	5.9%
Columbia University	5.6%
University of Pennsylvania	5.6%
N	287

As Table 4 shows, the top five midwifery programs completed by practicing CNMs in Massachusetts include Yale University, Frontier School of Midwifery and Family Nursing, Boston University, Columbia University, and Baystate Medical Center. The majority of CNMs (85.7%) completed programs in a state other than Massachusetts. While Boston University and Baystate Medical Center were the only Massachusetts-based nurse-midwifery programs, it is important to note that Boston University closed its program. Therefore, Baystate Medical

Center presently offers the only Massachusetts-based educational program for nurse-midwifery. For CPMs/DEMs who provided information about their midwifery program, 35% completed programs outside of Massachusetts (not shown).

Additional Provider Certification

In addition to academic background, the survey asked midwives about additional provider certification. As shown in Table 5, more than a quarter of CNMs hold additional certifications with many having a second advance practice specialization.

Table 5. Additional Certification Types, CNMs

Certification Type	CNMs
ANP (Adult Health Nurse Practitioner) Provider Certification	3.7%
WHCNP (Women’s Health Care Nurse Practitioner) Provider Certification	7.8%
FNP (Family Nurse Practitioner) Provider Certification	3.7%
Other Provider Certification	12.8%
N	218

EMPLOYMENT CONTEXT AND PRACTICE SETTING

Residence and Work: Massachusetts and Beyond

Since this report focuses on midwives who live and/or work in Massachusetts, it is important to clarify respondents’ states of residence and work locations. The vast majority of CNM respondents (87.4%) and CPM/DEM respondents (88.2%) live in Massachusetts.³⁶

Most midwives reported working in other states at some point: seventy percent of CPMs/DEMs worked as midwives in other states, including all of the New England states as well as nine additional states. Over half of CNMs (55%) worked in other states

at some time and they collectively reported working in all but 11 states in the country. Both groups of midwives reported working in other countries. Specifically, more than one out of 10 (16%) and five CPMs/DEMs (31%) indicated that they have worked outside the United States.³⁷

Regional Distribution of Midwifery Services

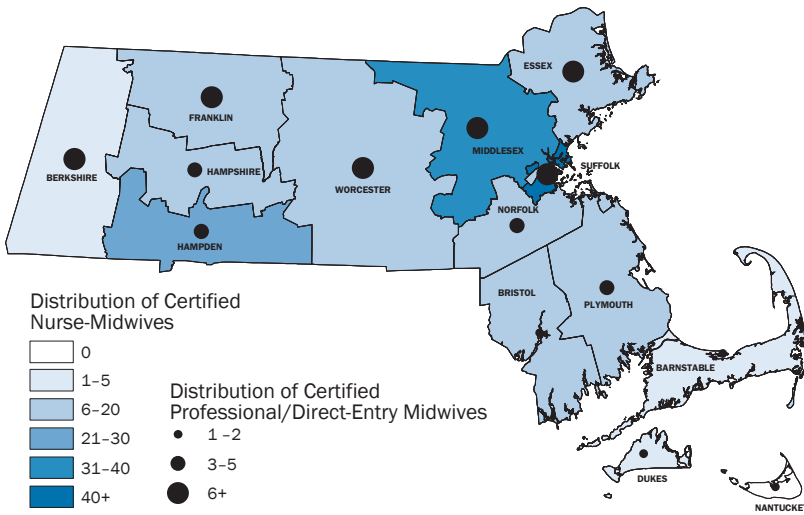
This study sought to provide key data about the availability of and access to midwifery care in Massachusetts, particularly given growing concern about provider shortages in primary care and obstetrics-gynecology in various parts of the Commonwealth. The Massachusetts Medical Society’s 2009 analysis found obstetrics/gynecology to be a specialty in short supply for the first time since the study began eight years ago.³⁸ Table 6 provides a breakdown of the Massachusetts counties in which respondents work. Figure 7 on page 14 displays these data in terms of regional distribution across the state.

Table 6. County of Work, CNMs and CPMs/DEMs

County	CNMs	CPMs/DEMs
Barnstable	2.9%	12.5%
Berkshire	1.7%	43.8%
Bristol	3.5%	12.5%
Dukes	0.6%	6.3%
Essex	11.5%	37.5%
Franklin	3.4%	43.8%
Hampden	14.4%	25%
Hampshire	4.6%	25%
Middlesex	17.8%	50%
Nantucket	0%	6.3%
Norfolk	6.3%	25%
Plymouth	8%	18.8%
Suffolk	28.2%	37.5%
Worcester	8%	43.8%
N	174	16

Note: Respondents were asked to check all Massachusetts counties in which they practice.

Figure 7. Work Location of Midwives, By Massachusetts County



Source: Center for Women in Politics & Public Policy analysis of Massachusetts Midwifery Workforce 2010 Survey respondents. N = 174 Certified Nurse-Midwives (CNMs); 16 Certified Professional Midwives/Direct-Entry Midwives (CPMs/DEMs).

As Figure 7 indicates:

- Middlesex and Suffolk Counties have the highest concentrations of CNMs (and CPMs/DEMs) likely due to the dense population and concentration of maternity hospitals in the Greater Boston area.
- Berkshire County has a low concentration of CNMs, but a relatively higher concentration of CPMs/DEMs.
- Both Barnstable and Dukes Counties have equally low concentrations of CNMs and CPMs/DEMs; Nantucket County has the fewest midwifery care providers, with no CNMs and only one CPM/DEM.

As Figure 8 shows:

- Not all major Boston hospitals provide midwifery care services (neither Tufts Medical Center nor Beth Israel Deaconess Medical Center has midwifery services).
- In Worcester County, only two hospitals provide midwifery care services, while three do not.
- In Berkshire County, two hospitals provide midwifery care and one does not; the two hospitals with mid-

Figure 8. Midwifery Service Availability, Massachusetts Maternity Hospitals

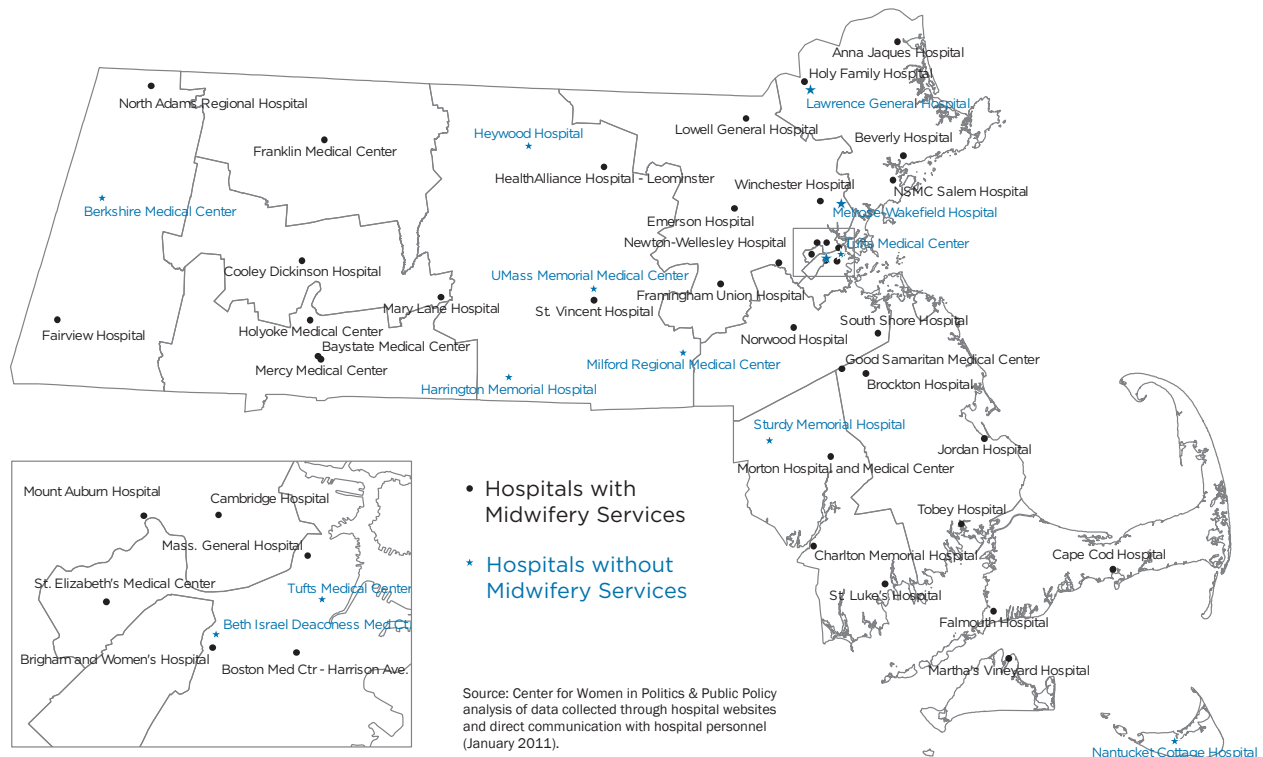


Table 7. Massachusetts Hospitals with Midwife-Attended Birth Rate of 20% and Over, 2008

Hospital	Total Number of Births	Percent CNM-Attended* Births
Holyoke Hospital	655	45.3%
Cambridge Birth Center and Cambridge Health Alliance – Cambridge Hospital	1457	37.3%
Fairview Hospital	151	32.5%
Tobey Hospital	431	29.2%
Saint Vincent Hospital	1982	28.2%
Mount Auburn Hospital	2050	27.5%
Boston Medical Center	2414	27.1%
<i>Brigham and Women's Hospital**</i>	<i>[8115]</i>	<i>[24.2%]</i>
Leominster Hospital	1080	22.2%
Massachusetts General Hospital	3579	20.9%
North Shore Birth Center and Northeast – Beverly Hospital	2168	20.1%

*Data available through MassCHIP report on prenatal practitioner type and not birth attendant. Therefore, prenatal practitioner type (CNM) is used as a proxy for birth attendant here. Hospitals for which no data on CNM-births were available are not included in this analysis.

**Due to variability in birth certificate data (upon which these MassCHIP data are based), Brigham and Women's Hospital data were obtained directly from all CNM services practicing at the hospital in 2008; specific sources included the Brigham Midwifery Bench Marking Report and Harvard Vanguard Medical Associates.

Source: Natality Dataset, Massachusetts Community Health Information Profile (MassCHIP). Massachusetts Department of Public Health. Version 3.0 r325. March 21, 2011.

wifery services are at opposite ends of the county, while the third – more centrally located – hospital (Berkshire Medical Center) does not.

Access to midwifery services varies across the Commonwealth. In some regions, the hospitals that provide midwifery services are often spread across large distances or are the only one in the county. Therefore, it is likely that certain populations of women in Massachusetts have limited access to midwifery care. This is further evidenced by the average distance traveled by midwives. In an average week, CPMs/DEMs reported traveling 122 miles and CNMs reported traveling 118 miles for work purposes (not shown).

In order to provide more in-depth information about midwifery services in Massachusetts maternity hospitals, Table 7 lists selected hospitals in which CNMs provided care to more than 20% of delivering women in 2008. Most of these hospitals are safety net hospitals which provide a significant level of care to low-income, the uninsured, and vulnerable populations by improving affordability of and access to care.

Individuals served in the safety net include diverse populations of urban and rural poor, the homeless, the young, low-income, and recent immigrants for whom English is not their first language. Several hospitals in Table 7 are known Massachusetts Safety Net sites, and one – Fairview Hospital – is a federally designated Critical Access Hospital. The role of CNMs in providing care to vulnerable women is discussed further in “Populations Served.”

Table 8. Work Location, CNMs

Work Location	CNMs
Birth Center	8.7%
Community Health Center	24.5%
Hospital Clinic/Hospital Medical Center	61.7%
Midwife-Owned Practice	2%
Non-Profit Health Agency	7.1%
Physician-Owned Practice/ Multi-Specialty Organization	32.7%

N=196

Note: Respondents were asked to “check all that apply.”

Work Setting

In Massachusetts – as is the case in most of the United States – CNMs practice as part of a health care team in an organizational setting.

As shown in Table 8, six out of every 10 CNMs (61.7%) currently practice in either a hospital clinic or medical center. Since respondents were asked to select all work sites and this percentage is significantly higher than national rates, it may include both those employed by the hospital and those who work in the hospital caring for women. Other CNMs (32.7%) practice within multi-specialty medical organizations or in private physician practices. One quarter of CNMs (24.5%) work in community health centers. Some CNMs work in birth centers (8.7%) and non-profit organizations (7.1%) and very few CNMs (2%) own and/or work in a midwife-owned practice.³⁹

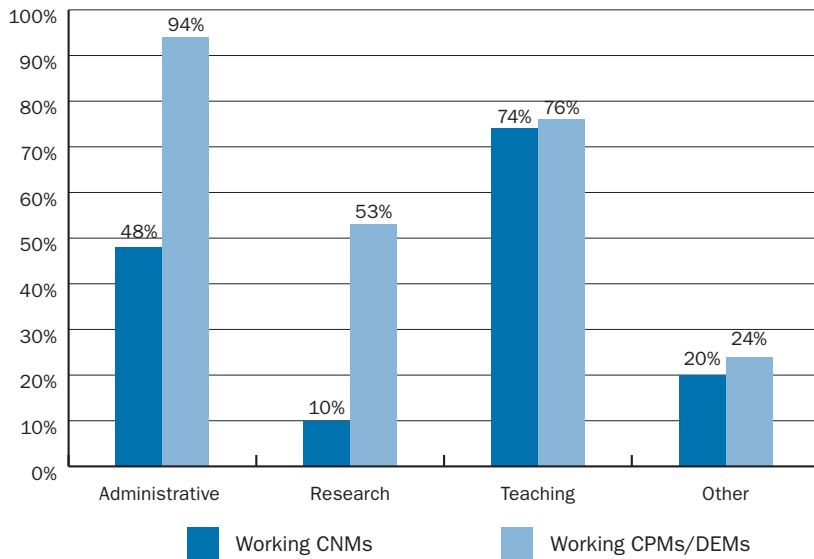
As the midwife group more frequently associated with out-of-hospital birth, all CPMs/DEMs identified their

Table 9. Provider Types in Practice Group, CNMs

Number of Providers	Midwives	MDs	Obstetricians/ Gynecologists
0	0%	26.4%	5.7%
1-10	62%	43.4%	63.4%
11-20	32.5%	11.3%	17.1%
21-30	4.3%	7.5%	10.6%
31 and above	1.2%	11.3%	3.3%
N	163	53	123

Note: Respondents were asked how many of each type of provider currently works in their practice group.

Figure 9. Non-Clinical Job Responsibilities, CNMs and CPMs/DEMs



Working CNMs N=162; Working CPMs/DEMs N=17

work location as either their or their client's home. Over one-third (35%) of CPMs/DEMs indicated that they work in midwife-owned practices.

Practice Groups

In this study, a group practice refers to a group of providers, physicians and midwives, who work together to provide health care services to a defined population. They share resources such as the site of care and collaborate in the care of clients. Although 84% of CNMs work in a group practice, the size and composition of practice groups vary.

As shown in Table 9 on page 15, the majority (62%) work in groups of fewer than 10 midwives, with 33% in groups of 11 to 20 midwives. A small percentage of CNMs (6%) reported working in groups with more than 21 midwives. Similar to the number of CNMs in the group, most CNMs reported that their consultants work in groups of fewer than 10. Seventeen percent reported physician groups of 11 to 20 MDs and 13% reported a group size of 21 to 30 MDs. A small percent (11.3%) reported groups larger than 30 MDs.

Job Responsibilities

Many working midwives have additional responsibilities beyond their clinical duties.

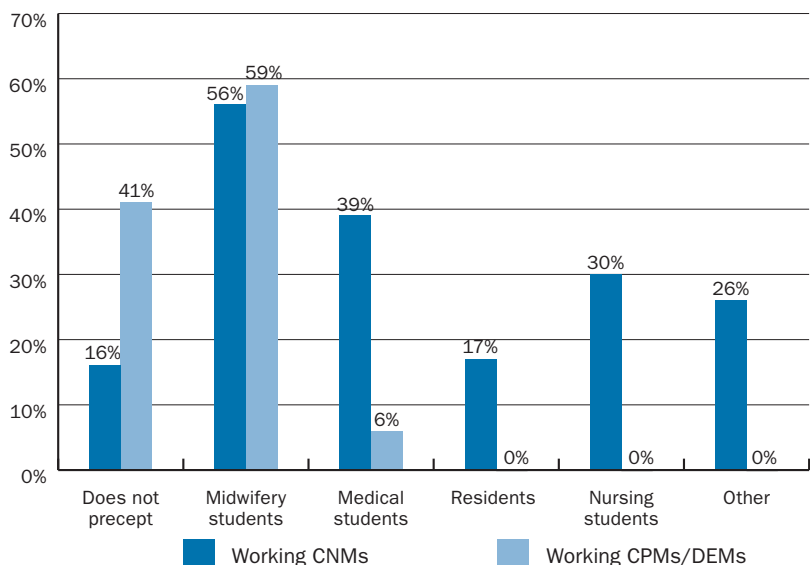
As indicated in Figure 9, for the majority of CNMs (74%) and CPMs/

DEMs (76.5%), teaching is a significant additional responsibility. The majority of both types of midwives reported engaging a particular kind of teaching – preceptor work with midwifery students. CNMs are more likely than CPMs/DEMs to precept medical students (39.5%). However, a few CPMs/DEMs (6%) reported involvement with medical student education. CNMs also

participate in the education of nursing students (29.6%), medical residents (16.8%), and others, including advanced practice nurses.⁴⁰ One CNM interviewee commented about the significance of midwives' involvement with medical education, "Nurse-midwives are also being used to a greater degree in educating the interns and the residents in care of healthy pregnant women, which is promoting that midwifery model of care throughout the obstetrical care community." One physician interviewee describing his residency experience noted, "the way the model was formed was that young midwives and young physicians were used to working together. I think that with midwives and medical students and residents, there's a great deal of exchange of information that can happen."

Both groups of midwives reported performing administrative activities as a component of their employment responsibilities. Most CPMs/DEMs and almost half of the CNMs indicated that they have administrative duties. Some of the administrative activities for CNMs include recording and reviewing practice statistics, quality assurance and improvement, program coordination and development, and meeting planning. CPMs/DEMs reported being involved in marketing and outreach,

Figure 10. Precept Responsibilities, CNMs and CPMs/DEMs



Working CNMs N=190; Working CPMs/DEMs N=17

billing, legislative activities, and serving on the North American Registry of Midwives (NARM).

The majority of CPMs/DEMs reported that research is an additional area of employment activity. Interestingly, a much smaller percentage of CNMs (10.5%) reported involvement with research. This may reflect that, as solo business owners, CPMs/DEMs record and analyze data from their practices. Conversely, CNMs more commonly work in health care systems that may have others collecting and analyzing their data. Beyond teaching, administrative and research activities, CNMs cited involvement in other activities as part of their employment, including developing and facilitating group prenatal care, and community service.

Work Hours and Schedules

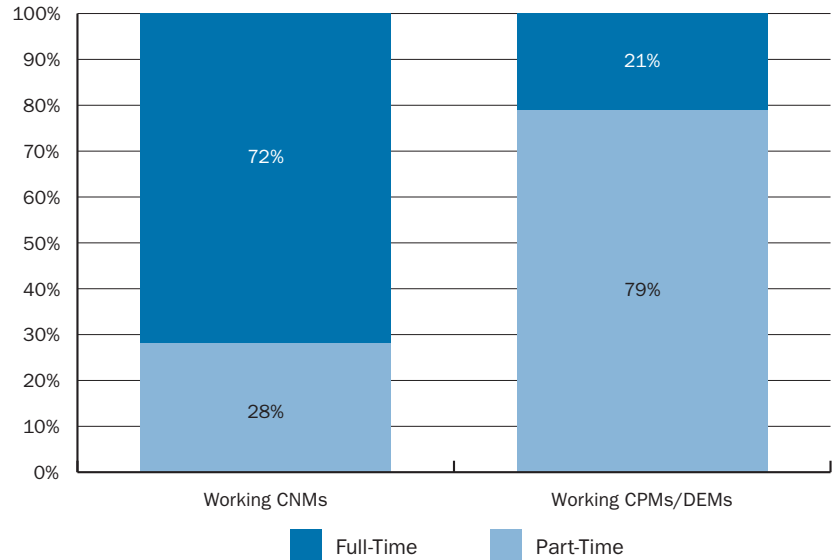
One important way of understanding the work life and core activities of midwives is to consider weekly average hours spent on various work components and in particular work settings. On average, CNMs work 41 hours per week and CPMs/DEMs work 19 hours per week.

As shown in Figure 11, the majority of CNMs (72%) work full-time and 28% part-time. For CPMs/DEMs this breakdown was reversed with 21% working full-time and 79% part-time. Most CNMs (85.5%) do not engage in additional work beyond their midwifery position, but half of CPMs/DEMs have additional employment (see Table 29 in Appendix B).

The Office and Other Ambulatory Settings

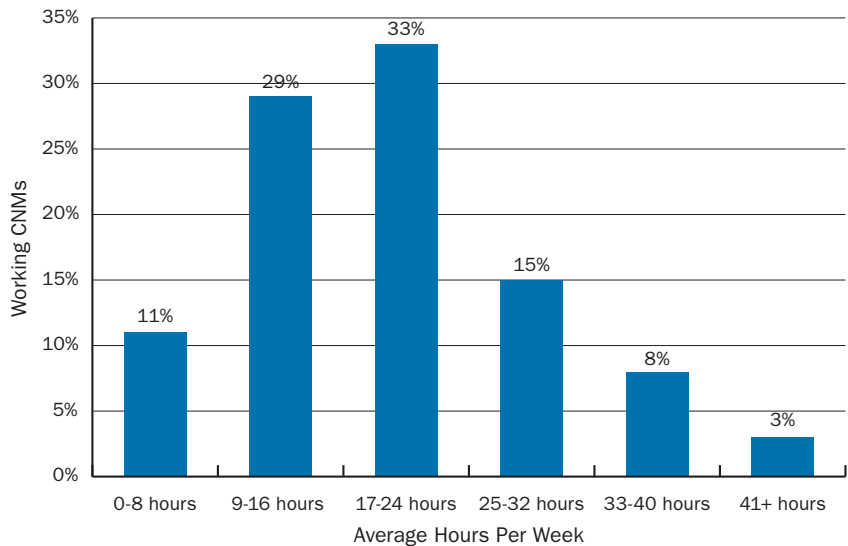
By looking at specific periods of time spent on different clinical activities such as prenatal and well-woman care in the ambulatory setting and labor/birth activity, usually occurring in the hospital or home setting, the structure and timing of the midwife's work become clearer. Most office work for CNMs occurs in 8-hour time frames. For respondents, the average number of hours worked in the office is 28 hours, with a mode of 20 hours. As demonstrated in Figure 12, nearly three-fourths of CNMs reported working 24 hours or less per week in an ambulatory care site (two to three 8-hour days). The remaining 26% work between 25

Figure 11. Full-Time/Part-Time Employment Breakdown, CNMs and CPMs/DEMs



Working CNMs N=193; Working CPMs/DEMs N=14
 Part-Time was calculated as <35 hours worked per week, on average;
 Full-Time was calculated as 35 and above hours worked per week, on average.

Figure 12. Average Hours Per Week in Ambulatory Setting, CNMs



Working CNMs N=174
 Note: Ambulatory setting includes office.

and more than 41 hours a week in the office.

CPMs/DEMs reported a different type of ambulatory/office work schedule with 90% working less than 16 hours per week in the ambulatory setting. The majority work less than eight hours in the ambulatory setting (not shown).

Attending Labor/Birth and Being on Call

The most demanding time commitment for midwives is that period of time either waiting for a woman to go into labor or attending a woman during labor and birth. Neither the timing of the onset of labor nor the length of the labor is known to either the midwife or the woman.⁴¹

Table 10. Work Hour Breakdown, Labor/Birth and On-Call, CNMs and CPMs/DEMs

Number of Hours	Working CNMs		Working CPMs/DEMs	
	Labor/Birth	On-Call	Labor/Birth	On-Call
No call required	NA	19.7%	NA	0%
0 hours	11.9%	7.4%	7.7%	0%
1-12 hours	33%	16%	76.9%	0%
13-24 hours	42.2%	33%	15.4%	8.3%
25-36 hours	9.7%	12.8%	0%	0.0%
37-49 hours	3.2%	6.4%	0%	0%
50+ hours	0%	4.8%	0%	91.7%
N	185	188	13	12

Note: Hours represent average weekly hours.

CNMs on average work 17 hours a week caring for laboring and birthing women. Just under half of CNMs reported working 12 hours per week attending women in labor and 41.7% reported working between 13 and 24 hours, most likely reflecting two 12-hour labor shifts.

Since they work in smaller practices or are solo practitioners, most CPMs/DEMs reported being on call 24 hours a day, seven days a week. Given this significant time demand, two CPMs

wrote that they attempted to manage their workload by clustering prolonged periods of being on call around times when a client is expected to give birth. One indicated: “If I have someone due, I am on call 24/7.” In reporting actual hours spent with laboring women, the work demand is more reasonable, with CPMs/DEMs attending laboring and birthing women nine hours per week on average.

Income of Midwives

Certified nurse-midwives (CNMs) have significantly higher yearly earnings than CPMs and DEMs. The median annual gross income for all CNMs in 2009 was \$90,000 and only \$21,425 for all CPMs/DEMs. This difference is partly due to differences in total hours worked; the majority of CNMs work full-time and are salaried while most CPMs/DEMs work part-time and are self-employed, thus are exposed to earnings variability. The mean hours worked for CNMs are almost twice those for CPMs/DEMs. However, when comparing median income for full and part-time schedules, the income disparity persists. In 2009, full-time CNMs earned a median of \$92,000 and full-time CPMs/DEMs earned a median of \$37,500. Part-time CNMs earned \$65,500 and a part-time CPM/DEM earned \$16,428 (not shown).

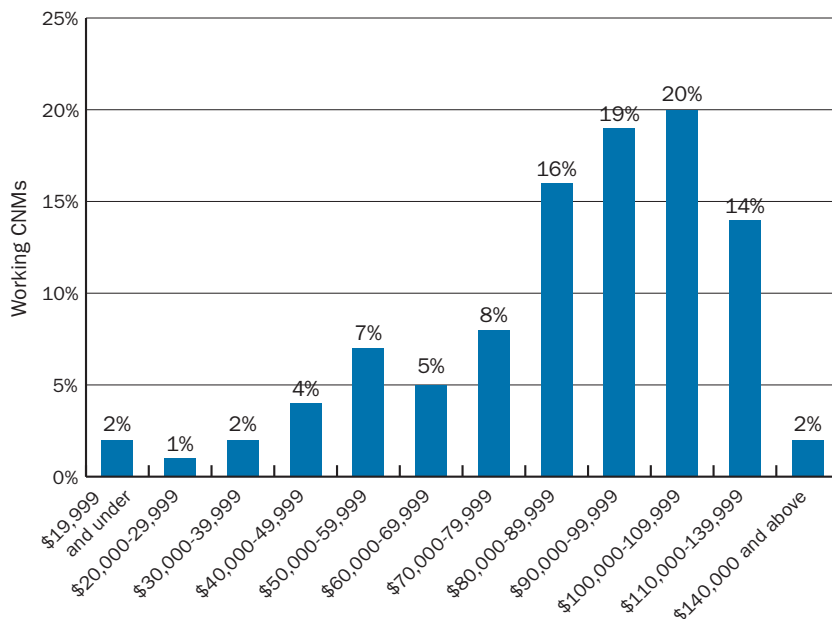
Among CNMs, 71% have gross yearly earnings at or above \$80,000, whereas 64% of CPMs/DEMs earn under \$50,000 gross income yearly. There is little earnings dispersion across CNMs; 55% earn from \$80,000 to \$130,000. Only 9% earn less than \$50,000 yearly.

In contrast, income-wise, CPMs/DEMs cluster in two groups. One large group (50%) earn under \$20,000 per year, while another group, 21%, have gross earnings ranging between \$40,000 and \$50,000 yearly. This bipolarity is likely due to differences in hours worked within the group.

CNMs report multiple sources of income but the most often reported income sources are hospitals (49%) and hospital clinics (5%), and physician/physician owned practices (25%). Birth centers, community health centers, and managed care organizations are less frequent sources of income (5%). Other sources are reported as income by less than 5% of CNMs.⁴²

Midwives receive income from multiple sources but the primary distinction is that CNMs are primarily in wage and salary employment (72.7% receive a base salary, a subset of whom are paid hourly). Those whose pay is based on an hourly rate may receive a higher rate for on-call time. Only 1% receive self-employment income and 19% have “other income” sources. In a contrasting pattern, 100% of CPMs/DEMs receive self-employment income and slightly

Figure 13. Annual Income, CNMs



Working CNMs N=182

Note: Annual income is gross annual income for 2009.

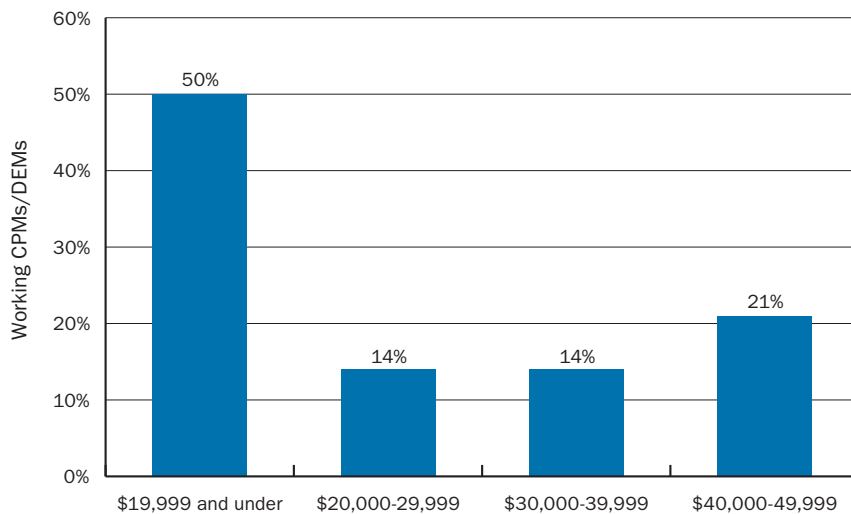
over 12% combine it with a base salary or hourly wage.

Insurance Credentialing

In order to access reimbursement from a third party payer most midwives must go through a credentialing process. In Massachusetts, there is a statute mandating insurance companies to reimburse CNMs in specific situations and a federal statute that mandates

reimbursement of CNMs through Medicaid and Medicare. There are no laws, either federal or state, which address the reimbursement of CPMs/DEMs. When asked about being credentialed by health insurers, 84.1% of CNMs and 6.3% of CPMs/DEMs indicated that they are credentialed. One out of ten CNMs and one-quarter of CPMs/DEMs responded that they did not know if they are credentialed (see Table 32 in Appendix B).

Figure 14. Annual Income, CPMs/DEMs



Working CPMs/DEMs N=14
Note: Annual income is gross annual income for 2009.

Table 11. Source of Income, CNMs

Income Source	Working CNMs
Birth Center	5%
Community Health Center	5%
Educational Institution	4%
Federal Government/Military	1%
Hospital Clinic	5%
Hospital/Medical Center	49%
Employee, Midwifery-Owned Practice	2%
Self-Employment	0%
Non-Profit Health Agency	10%
Physician/Physician-Owned Practice	25%
Managed Care Organization	5%
Other	8%
N	194

Note: Respondents were asked to report from where income in 2009 came and to "check all that apply."

Table 12. Forms of Compensation, CNMs and CPMs/DEMs

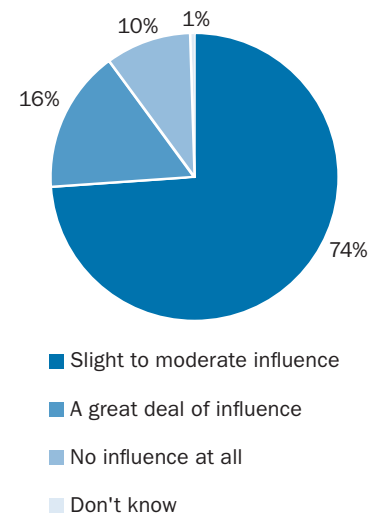
Compensation Form	Working CNMs	Working CPMs/DEMs
Base salary	72.7%	6.3%
Hourly wage	34.6%	5.9%
Self-employed	1%	100%
Other	19.2%	6.3%
N	193	16

Note: Respondents were asked to check all forms of compensation received in 2009.

Medical Liability

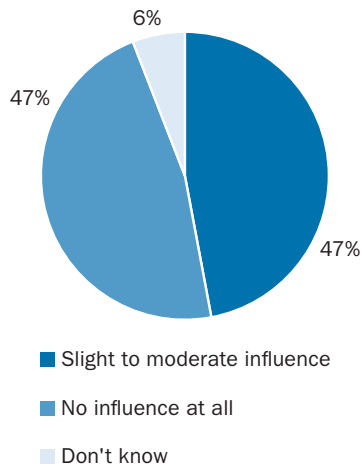
Medical liability insurance is necessary for those midwives who plan to attend births in the hospital setting.⁴³ For those midwives (CNMs or CPMs/DEMs) providing care in the home, obtaining malpractice insurance remains problematic.⁴⁴ When asked about medical liability insurance, the vast majority (96.9%) of CNMs indicated that they have employer-covered malpractice insurance and the rest indicated that they self-purchase malpractice insurance. The responses were very different for CPMs/DEMs as only 5.9% indicated

Figure 15. Influence of Medical Liability Concerns on Clinical Decision-Making, CNMs



Working CNMs N=188
Note: May not total 100% due to rounding.

Figure 16. Influence of Medical Liability Concerns on Clinical Decision-Making, CPMs/DEMs



Working CPMs/DEMs N=17

that malpractice insurance was self-purchased with all others indicating that they have no malpractice coverage.

When identifying the role of medical liability concerns and the influence of such concerns on clinical decision-making, 74% of CNMs and 47% of CPMs/DEMs reported slight to moderate influence as shown in Figures 15 and 16. The same percentage of CPMs/DEMs (47%) and one out of ten CNMs indicated that medical liability concerns have no influence on their clinical decision-making. No CPMs/DEMs and only 16% of CNMs reported that their clinical decisions are influenced a great deal by such concerns.

When asked what aspects of their clinical practice are influenced by malpractice concerns, most CNMs and just under one in five CPMs/DEMs reported that they order more tests as shown in Table 13. Approximately half of CNMs and only 6% of CPMs/DEMs introduce interventions or intervene earlier. CNMs are more likely to refer patients earlier than CPMs/DEMs. Requesting more follow-up visits is a practice influence reported by 41% of CNMs and 18% of CPMs/DEMs. More than one-fifth (22%) of CNMs and 59% of CPMs/DEMs (not shown) indicated that no aspects of their practice are currently influenced by medical liability concerns.

Malpractice concerns are known to lead providers to practice defensive medicine including ordering more tests, procedures, and/or visits to avoid a malpractice lawsuit.⁴⁵ Although 74% CNMs reported that they were only slightly to moderately influenced by malpractice concerns, many CNMs reported engagement in common defensive medicine practices. It is interesting to note that CPMs/DEMs who have limited access to malpractice insurance reported engaging in less defensive practice. Given the high cost of defensive medicine practices and potential increase in risk to patients/clients that may be associated with particular earlier and/or increased use of interventions, it is important to examine this influence on practice if health care costs are to be managed and quality of care improved.⁴⁶

SCOPE OF PRACTICE AND PROCESS OF CARE

The scope of midwifery practice continues to evolve in the United States. The process of care (actual care provided) reflects many factors such as the educational preparation of the midwife, practice agreements between midwife and practice setting, hospital admitting privileges, state and federal regulations, new scientific developments and the needs of special populations and/or individual clients. This report focuses on the practice of two distinct groups of midwives – CNMs and CPMs/DEMs – and the following explores the scope of practice and type of care within each

group given variations that result from these and other factors.

A key component of the Midwives Model of Care is individualized care with careful monitoring of the physical, psychological, social and spiritual well-being of the woman during childbearing years and over her life course. All models of CNM/CM care are provided within a multi-disciplinary network of consultation and referral with other care providers. For CPMs, formal networks of care providers can be restricted because of the current lack of licensure in the Commonwealth.

Survey respondents indicated that they engage in core midwifery care with more than nine of out ten (91.7%) of CNMs and all CPMs/DEMs providing antepartum care, 88% of CNMs and 100% of CPMs/DEMs providing intrapartum care, and 94% of CNMs and all CPMs/DEMs providing postpartum care.⁴⁷ In addition, the vast majority (94%) of CPMs/DEMs reported caring for newborns yet only 14.1% of CNMs indicated that their practice includes newborn care. This difference most likely reflects variation in care delivery patterns between the home and hospital settings.

Furthermore, as shown in Table 14, both groups of midwives indicated that they engage in family planning services (88.5% of CNMs and 47% of CPMs/DEMs), preconceptional care and “well woman care.” Additional practice areas included menopausal care (CNMs at 54.7% and CPMs/DEMs at 24%), infertility, and pregnancy termination (30.2% for CNMs). It is important to note that while a number of CNMs indicated that their practice includes pregnancy termination, several indicated that they

Table 13. Practice Implications of Medical Liability Concerns, CNMs and CPMs/DEMs

Aspect of Practice Influenced	Working CNMs	Working CPMs/DEMs
Use more diagnostic tests	59.9%	18%
Introduce interventions or intervene earlier	50.8%	6%
Refer patients to specialist earlier	46.5%	18%
Request more follow-up visits	41.2%	18%
Perform more treatment procedures	26.2%	0%
Prescribe more medications	12.8%	0%
N	187	17

Note: Respondents were asked to “check all that apply.”

Table 14. Areas of Practice, CNMs and CPMs/DEMs

Practice Area	Working CNMs	Working CPMs/DEMs
Postpartum	94.3%	100%
Antepartum	91.7%	100%
Family planning	88.5%	47%
Intrapartum	88%	100%
STD care	87%	12%
Gynecology	85.9%	41%
Well woman care	78.1%	47%
Preconceptual	76%	41%
Menopausal	54.7%	24%
Primary care	38.5%	0%
Infertility	35.9%	18%
Pregnancy termination*	30.2%	0%
Newborn	14.1%	94%
Specialization in LGBT care	10.5%	18%
N	192	17

Note: Respondents were asked to check all areas of practice their work included in 2009.
*Several respondents noted "counseling only" for pregnancy termination.

engage in "counseling only" for this practice area.

Caring for Childbearing Women

Given that midwives engage primarily in the care of childbearing women, this study sought to examine closely the role of midwives in child-birth-related care. One CNM interviewee commented on midwives' general approach to maternity care: "I really think that midwives are in the vanguard of looking at the evidence of what's best for the mother and infant and applying that to the care that we provide."

According to data provided, CPMs/DEMs attend 22.5 births per year and CNMs attend 60.7 births per year on average.⁴⁸ Table 15 provides a fuller breakdown of birth averages. In response to a question about where they have ever attended birth, the vast majority of CNMs have attended birth in a community hospital (83.2%) and/or in a tertiary hospital (70.5%). As indicated in Table 36 (Appendix B), less than half (44.2%) have attended birth in a birth center and over one-fourth (26.7%) have attended birth in the home setting. More than nine out of ten CPMs/DEMs

report having attended birth in the home setting, 66.7% at a birth center, 38.9% in a community hospital and 22.2% in a tertiary hospital. Given that CPMs/DEMs do not work in the hospital setting or have hospital privileges in Massachusetts, it is likely that those CPMs/DEMs who reported hospital birth attendance have done so in other countries where they may have trained and/or worked in hospital settings. In addition, it may be that CPMs/DEMs who reported hospital birth attendance

Table 15. Average Number of Vaginal Births Attended by Midwives in Practice Group, CNMs

Number of Births	Working CNMs
0-99	15.2%
100-299	20.9%
300-599	33.5%
600-999	22.2%
1000+	8.2%
N	158

Note: 2009 birth data for spontaneous vaginal births

have followed a client to the hospital for a transfer situation in Massachusetts.

Midwives are often credited with helping women avoid cesarean birth.⁴⁹ Based on self-reported rates provided by respondents (shown in Table 16), 18.8% of CNMs and 68.8% of CPMs/DEMs work in practices with a primary cesarean delivery rate of less than 11%. Twenty-three percent of CNMs and 12.5% of CPMs/DEMs reported a rate of 12-17%. No CPM/DEM reported a practice primary cesarean rate greater than 17%. A surprising number of CNMs (41.4%) and CPMs (18.8%) indicated that they did not know their practice's primary cesarean rate. All respondents who provided a rate indicated that their practice's primary cesarean rate was lower than the 2007 national rate of 32% or the Massachusetts 2007 rate of 33.5%.⁵⁰ Total cesarean delivery rates for midwives' practices may be found in Table 37 (Appendix B).

For women interested in the option of a VBAC (vaginal birth after cesarean), it is important to have access to providers and a site of birth for care. All CPMs/DEMs and nine out of ten CNMs who responded to the VBAC survey question indicated that they care for women requesting a VBAC.

Table 16. Primary Cesarean Delivery Rate, CNMs and CPMs/DEMs

Cesarean Delivery Rate	Working CNMs	Working CPMs/DEMs
<12%	18.8%	68.8%
12-17%	23.1%	12.5%
18-23%	9.1%	0%
24-28%	3.2%	0%
Don't know	41.4%	18.8%
Not applicable	4.3%	0%
N	186	16

Note: Respondents were asked for practice's primary cesarean section rate in 2009.

Table 17. Advanced Practice Techniques, CNMs and CPMs/DEMs

Advanced Practice Technique	Working CNMs	Working CPMs/DEMs
Repair of 1st and 2nd degree lacerations	90.1%	94.1%
Intermittent electronic intrapartum monitoring	88.5%	76.5%
Continuous intrapartum monitoring	87.4%	0%
Internal intrapartum monitoring	85.9%	0%
Insertion of IUD	82.7%	0%
Episiotomies and repair	77.5%	17.6%
Assistance at cesarean sections	41.9%	0%
Twin deliveries (personally attend)	34%	47.1%
Sterile water papules for back pain in labor	34%	29.4%
Intermittent fetoscope intrapartum monitoring	30.9%	76.5%
Repair of 3rd degree lacerations	29.3%	23.5%
Water birth	28.3%	100.0%
Ultrasounds – Other	25.1%	0%
Endometrial biopsies	20.4%	0%
Ultrasounds – Limited obstetrical trained and certified	18.3%	0%
Other	16.4%	5.9%
Colposcopies	7.9%	0%
Use of vacuum extractors	4.2%	0%
Version	3.7%	35.3%
Repair of 4th degree lacerations	2.6%	0%
Breech deliveries	2.1%	52.9%
Circumcision	1%	0%
Ultrasounds – Fully trained and certified	0.5%	0%
N	191	17

Childbirth and Advanced Practice Techniques

As demonstrated in Table 17, there is variation in procedures used in the care of pregnant and birthing women by CNMs and CPMs/DEMs.

The vast majority of CNMs (77.5%) perform and repair episiotomies if needed, nine out of ten repair first and second degree lacerations and less than one-third (29.3%) repair third degree lacerations. More than four out of ten (41.9%) CNMs assist at cesarean deliveries. Over one-quarter (28.3%) attend water births, thirty-four percent personally attend twin deliveries, 4.2 percent will use a vacuum extractor and very few – only 2.1 percent – deliver breech

presentations. Other procedures performed by CNMs include intrauterine device (IUD) insertion (82.7%), version (3.7%), limited ultrasound after training and certification (18.3%), other types of ultrasound (25.1%), and endometrial biopsies (20.4%).⁵¹

For CPMs/DEMs, three-quarters engage in fetal monitoring in labor with either a mechanical device, fetoscope or handheld electronic device. All CPMs/DEMs indicated that they attend water birth, the vast majority (94.1%) repair first and second degree perineal tears, more than half (52.9%) will deliver babies in the breech position and nearly half (47.1%) will personally attend women with twins. More than one-third

(35.3%) will engage in version, almost a quarter (23.5%) repair third degree lacerations and 17.6% repair episiotomies.

Time Spent with Women

The Institute of Medicine’s report, *Crossing the Quality Chasm: A New Health System for the 21st Century*, suggested the following to improve the quality of health care: establish healing relationships, provide care based on clients’ needs, educate clients with sufficient information to make informed decisions, provide evidence-based care and engage in open sharing of information between clients and providers⁵²– recommendations similar to the principles of the Midwives Model of Care. In order to provide such client-centered care, midwives need sufficient time to both address the care recipient’s physical and psychosocial needs as well as to provide education and support. In this area, CPMs/DEMs provide an exceptional level of time commitment to their clients.

For new obstetrical visits, CPM/DEM visits start at one hour and may extend up to 150 minutes. The majority of CNMs (52%) reported new obstetrical visit lengths between 40 and “90 or more” minutes. For return obstetrical visits, 69% of CPMs/DEMs reported visits of 60 minutes and for CNMs the majority of return visits were 15 minutes (67%). The postpartum visit for

Table 18. Number of Patients/ Clients Seen Daily, CNMs and CPMs/DEMs

Number of Patients	Working CNMs	Working CPMs/DEMs
Fewer than 6	1%	75%
7 to 12	9.9%	12.5%
13 to 18	31.8%	0%
19 to 24	38.5%	0%
25 to 30	8.3%	0%
31 to 36	1%	0%
37 to 42	1%	0%
More than 42	0.5%	0%
Don't work in office/ambulatory setting	7.8%	12.5%
N	192	16

CPMs/DEMs is somewhat shorter with the majority (59%) reporting visits of 30 to 60 minutes.⁵³ For CNMs, the majority of postpartum visits are longer than 30 minutes (53%). Forty-seven percent of CNMs plan postpartum visits between 15 to 20 minutes. Table 40 (Appendix B) provides additional data on visit length. With the arrival of managed care, many established health care sites have shortened visit lengths.⁵⁴ Consequently, providers at those sites now have limited flexibility regarding the length of patient visits.⁵⁵

A CNM working in a private practice explained the significance of time spent with women in the context of time pressures imposed on nurse-midwives: “we take the time to listen...And our stuff is scheduled every 15 minutes like everybody else and we run late and it stinks and I’m not home before 8:00 on a regular day. But at least I feel like I’ve given good care.”

In terms of the daily average number of patients/clients seen by midwives, Table 18 on page 22 demonstrates that 31.8% of CNMs see 13 to 18 patients per day and 38.5% see 19 to 24 per day. Approximately one in ten see 12 or fewer patients per day. The majority of CPMs/DEMs (75%) see six or fewer women per day.

Primary Care: Delivery and Barriers

Primary care is defined as the “provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community.”⁵⁶ Prior to 1997, CNMs provided primary care to women based on the configuration of their practices and patient need. However, based on the Report of the Pew Health Commission and an Institute of Medicine report in 1994, the scope of

practice for CNMs formally expanded in 1997 to include primary care.⁵⁷

In 2006, a Massachusetts Medical Society report identified a shortage of primary care physicians in the Commonwealth for the first time.⁵⁸ This shortage was most acute in community hospitals. In assessing the impact of this finding, researchers found a two-month wait time for a primary care visit grew by 6% over the course of one year. There was also a substantial increase in the percentage of women waiting one month for an OB/GYN visit – the rate doubled from 20% to 40%. One solution to this shortage was suggested by a recent Institute of Medicine report, *The Future of Nursing*, which recommended that all scope-of-practice restrictions be removed from the practice of Advanced Practice Registered Nurses (APRN), including CNM/CMs, as a way to increase access to primary care and preventative health care services.⁵⁹

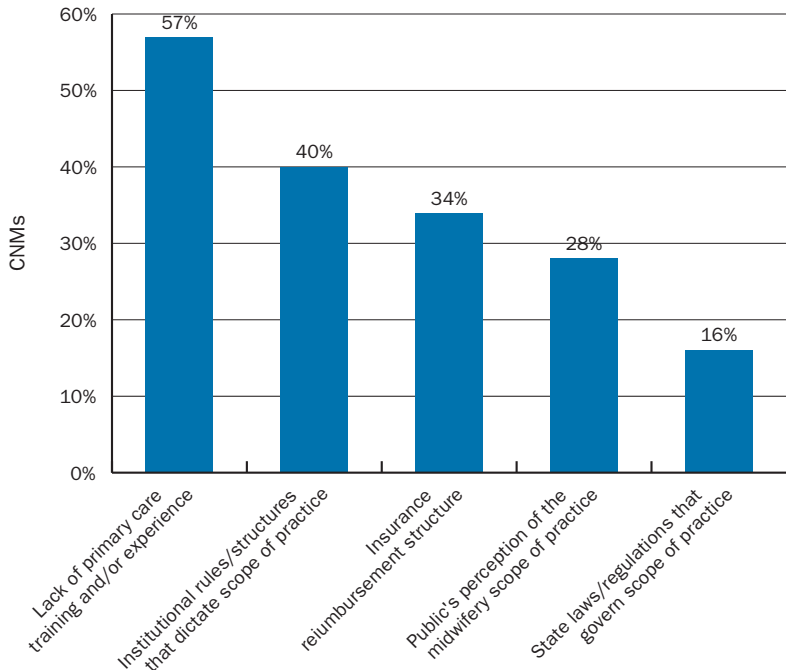
One CNM interview respondent

Table 19. Education and Management of Selected Conditions, CNMs

Condition	N	Formal Education	Independently Manage	Consult	Screen/Refer	Pregnancy Only
Menstrual disorders	179	93.3%	78.5%	48.4%	28.0%	7.1%
Lactation	181	92.8%	86.8%	27.5%	25.8%	14.8%
Pre/peri/postmenopause	180	85.0%	69.7%	50.0%	38.2%	7.3%
Nutrition	177	84.2%	70.2%	26.4%	51.1%	20.8%
Breast	177	80.2%	38.5%	46.1%	62.6%	14.6%
Sexual/domestic violence	178	79.8%	53.6%	24.9%	65.7%	11.6%
Urinary issues	172	79.7%	59.6%	44.4%	60.7%	12.4%
Acute URI	177	54.2%	39.5%	20.8%	36.4%	39.9%
Asthma/allergy	173	46.2%	18.6%	34.9%	51.7%	33.7%
Psychiatric	171	46.2%	16.9%	38.6%	75.6%	15.7%
Dermatologic	173	39.9%	24.0%	32.9%	68.7%	20.4%
Acute GI	175	39.4%	20.0%	30.6%	48.8%	36.5%
Hepatitis	171	34.5%	4.2%	35.4%	64.2%	23.6%
Hematologic	172	34.3%	13.7%	36.3%	61.9%	23.2%
Cardiovascular	171	27.5%	2.4%	27.7%	68.7%	18.1%
Chronic URI	171	23.4%	6.1%	23.2%	64.6%	14.0%
Neurologic	169	20.1%	3.7%	27.0%	71.8%	16.6%
Chronic GI	172	17.4%	1.2%	25.5%	67.9%	14.5%

Note: Respondents were asked to “check all that apply.”

Figure 17. Top 5 Barriers to Providing Primary Care, CNMs



Working CNMs N=190
 Note: Respondents were asked to “check all that apply.”

remarked about the vital role of midwives in the delivery of primary care – particularly for low-income and/or underserved women: “midwives spend a great deal of time exploring the social and psychological and financial chal-

lenges that our patients are experiencing, in addition to just providing them medical care...we’re able to develop relationships with the women for whom we care and we see them for a lot of their primary care needs. They don’t

otherwise have primary care providers. If they’ve been assigned primary care providers by Mass Health or by Healthy Start, it takes a long time for them to...get in to see their primary care providers. So there’s a large population of women who only come to see us for their colds and their back pain and their bladder infections and their sexually transmitted infections, whether these problems are occurring during pregnancy or outside of pregnancy.”

Data on CNMs practicing in the Commonwealth confirm that a substantial segment of the CNM workforce engages in the delivery of primary care. As demonstrated in Table 14 on page 21, nearly four out of ten CNMs (38.5%) indicated that primary care is one of their areas of practice. In order to better understand the scope of midwifery practice beyond pregnancy and childbirth, midwives were asked about their formal education and level of management of specific health conditions. Table 19 on page 23 contains the complete list of conditions and respondent rates.

Both midwifery groups identified seven health issues in which more than 50% of the respondents had formal education: lactation, menstrual disorders, pre/peri/postmenopause, nutrition, breast health, sexual/domestic violence, and urinary issues. More than half of CNMs independently manage those

Table 20. Top 10 Obstacles to Practice in Massachusetts, CNMs and CPMs/DEMs

Obstacle	Working CNMs	Obstacle	Working CPMs/DEMs
Requirement for physician supervision	44.2%	Insurance reimbursement structure*	81.3%
Hospital protocols	37.9%	Finding supportive back-up physicians	56.3%
Insurance reimbursement structure*	32.6%	Insurance reimbursement rates	50%
Insurance reimbursement rates	27.9%	Lack of clients	50%
Lack of autonomy from own covering physicians	20.5%	Hostility from healthcare specialties**	37.5%
Finding supportive back-up physicians	20.5%	Access to medical supplies***	37.5%
Hostility from hospital nursing staff	18.9%	Other	33.3%
Hospital privileging	18.9%	Birth center accreditation	18.8%
No significant obstacles	18.8%	Hospital protocols	18.8%
Other	18.7%	Hostility from hospital nursing staff	18.8%
N	190	N	16

*particular to midwives

**other than own covering physicians

*** in out-of-hospital settings (i.e. oxygen and prescription drugs)

Note: Respondents were asked to check all “biggest obstacles to your preferred style of practice of midwifery in Massachusetts” that apply.

conditions with the exception of breast issues. More than 90% of CPMs/DEMs (not shown) reported independently managing lactation and nutrition issues; however in the management of other conditions, CPMs/DEMs are more likely to screen and refer. Nearly 40% of CNMs independently manage acute URI and 24% independently manage dermatologic conditions. As shown in Table 19, as the rate of formal education on certain conditions decreased for CNMs, their management is more likely to be “screen and refer.” Furthermore, there were few conditions in which large percentages of CNMs manage “pregnancy only.”

The survey also inquired about barriers to providing primary care to the women for whom they care and Figure 17 shows that the majority of CNMs (57%) identified lack of primary care education as a barrier.⁶⁰ Other barriers included institutional rules and structure, insurance reimbursement rates, the public’s perception of midwifery, state law governing midwifery practice and lack of physician understanding.

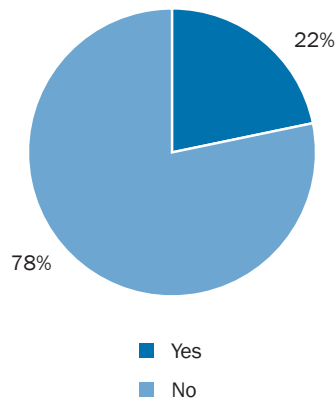
Midwifery Practice Obstacles

In addition to barriers in the delivery of primary care, the study also sought to identify obstacles to the practice of midwifery care more generally. Every CPM/DEM and the majority of CNMs (81.2%) stated that there were significant obstacles to their preferred practice style. However, there were clear distinctions between the midwifery groups, as shown in Table 20 on page 24.

For CPMs/DEMs, insurance rate structures were cited as the most commonly identified problem (81.3%). For CNMs, the physician supervision requirement was the most commonly reported practice barrier (44.2%). Other issues identified by CPMs/DEMs included finding supportive back-up physicians, lack of clients, insurance reimbursement rates, access to medical supplies, hostility from health care workers, hospital protocols and privileges.

Good working relationships with team members, particularly physicians, have been identified as an important factor in creating a successful midwifery practice.⁶¹ All CNMs collaborate with physicians and most develop a strong trust and respect for each other’s professional capabilities. In Massachusetts, the statute governing nurse-midwifery

Figure 18. Back-Up Coverage Challenges, CNMs



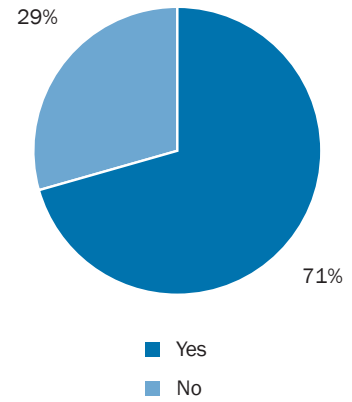
Working CNMs N=184

practice is one of only five in the United States that continues to require physician supervision in order to practice midwifery.

Although removing the physician supervision mandate is an important issue for nurse-midwives, 78% of CNMs in this study stated they had no problems with back-up coverage, suggesting that the vast majority of CNMs are satisfied with their MD-CNM partnerships and the removal of supervisory language from enabling legislation is a separate issue. Those who identified problems in the midwife-physician relationship noted several important areas of concern such as a differing philosophy of care which can lead to practice differences, clinical disagreements and/or limited trust; poor group dynamics; and other practice issues such as limited back-up, poor midwife support and, at times, inadequate MD or CNM coverage.

For CPMs/DEMs, 71% stated they face back-up challenges. Since CPMs/DEMs work in the client’s home and only enter the medical system when a patient is transferred to the hospital setting due to a problem situation there is limited opportunity for building team relationships and mutual trust. One issue identified by CPMs/DEMs was the difficulty in finding “official back-up.” Communication style, such as encounters with adversarial or hostile physicians and MDs who try to scare women when they inquire about a homebirth, were also

Figure 19. Back-Up Coverage Challenges, CPMs/DEMs



Working CPMs/DEMs N=17

noted by CPMs/DEMs. In the words of one CPM interviewed in the study: “not being able to have a working relationship with obstetricians easily and being able to transfer our care or send in people for referrals really makes it difficult for us to practice in many ways.”

Legislative Change

Respondents were asked to consider whether legislative change could help with primary care and/or preferred midwifery practice obstacles. As indicated in Table 21, most midwives (63.5% of CNMs and 56.3% of CPMs/DEMs) indicated that legislative change could address some obstacles cited. Most open-ended responses offered by CNMs related to the need for licensure as independent practitioners. As one CNM explained, “Independent practice

Table 21. Legislative Change to Address Midwifery Practice Obstacles, CNMs and CPMs/DEMs

	Working CNMs	Working CPMs/DEMs
Yes	63.5%	56.3%
No	9.9%	25%
Don’t know	26.5%	18.8%
N	181	16

Note: Respondents were asked if they believed that legislative change could help with primary care delivery obstacles or preferred style of midwifery practice obstacles cited in previous survey questions.

could help us immensely.” Another CNM respondent specified, “removal of supervisory language would allow us more legal privileges and make us more visible.” And another stated: “Loosening regulatory language regarding physician supervision of CNMs could create much more of a collaborative and supportive working relationship between MDs and CNMs, promoting women and newborn health without compromising public safety.” A similar comment was offered by a CNM who said, “I would like to have prescriptive authority without MD oversight; MD oversight pays lip-service only.” One CPM/DEM offered the following in response to the survey question about how legislative change could address cited obstacles: “There is no question that if CPMs were licensed, more clients would choose out of hospital births. It would simply be a matter of time before legislation would follow allowing for healthy women (insured via either state or private insurance programs) to be covered or reimbursed for their midwife attended births in the home setting or in birth centers.”

POPULATIONS SERVED

In addition to developing a profile of midwives, this study sought to provide information on the women who receive care from midwives in the Commonwealth. The following offers a snapshot of the populations served by survey respondents, with a particular focus on age, sexual orientation, racial and ethnic background, immigrant and English as a Second Language (ESL)

communities, as well as health insurance coverage status.

Across the Lifespan

While midwives are more commonly known for the care they provide to childbearing women, midwives often serve women in all stages of life. As one CNM interview respondent stated, “we take care of women throughout their lifespan, from adolescence to menopause.” This was confirmed through data on the ages of Massachusetts midwives’ youngest and oldest patients/clients. The youngest woman cared for by a CNM is 8 years of age (average age for youngest patients is 14.6) and the oldest 100 years of age (average age for oldest patients is 59). As indicated in Table 23, the mean percentage of patients under the age of 20 is close to 30%. CPM/DEM responses indicated that the youngest client is 18 years old and the oldest is 55. Additionally, over half of CPM/DEMs (59%) indicated that more than 10% of their client population is younger than 20 (not shown).

Lesbian, Gay, Bisexual, and Transgender Populations (LGBT)

Both CNMs and CPMs/DEMs care for women who identify as LGBT. According to survey data, CNM respondents estimated that their patient population is made up of an average of 6% LGBT patients. CPM/DEM respondents estimated that, on average, 2.5% of their clients are LGBT. While these data are not shown, Table 35 in Appendix B provides additional data on LGBT patient/client estimates provided by survey respondents.

Women of Color

Both CNM and CPM/DEM respondents indicated that they care for women of color in Massachusetts. As shown in Table 22, the mean percentage of white women cared for by CNMs is 50.7%. The other half of the CNM patient population, based on estimates provided by survey respondents, is a very diverse group in terms of ethnic and racial background with 27% of Hispanic origin, 17% non-Hispanic black, and 8% Asian. About one-third (33%) of surveyed CNMs indicated that at least 31% of their patients are Hispanic or Latina (not shown).

In a recent national study, 81% of those birthing at home were non-Hispanic white women.⁶² Similar to those national statistics, 91% of clients cared for by CPMs/DEMs are non-Hispanic white women (not shown). A smaller number of clients are of Hispanic origin (4%), non-Hispanic black (2%), and Asian (.9%).

Immigrant Women

Both CNMs and CPMs/DEMs care for immigrants and women for whom English is not their native language. Nearly 20% of CNMs estimated that immigrants and women for whom English is not their native language comprise at least 50% of their patient population (not shown). Table 23 shows that the mean percentage of immigrant patients served by CNMs is 22%, with CPM/DEM mean estimates much lower (1.3%). The mean percentages of ESL patients/clients are significant for both CNMs (30.7%) and CPMs/DEMs (7.5%).

In response to an interview question about the role of midwives in the care of vulnerable populations, one

Table 22. Race/Ethnicity of Patient/Client Populations, CNMs and CPMs/DEMs

Midwife Type		White	Black/African-American	Hispanic or Latina	Asian	Native Hawaiian/Pacific Islander	American Indian/Alaska Native
CNMs	Mean	50.7%	17%	27.2%	8%	.5%	.3%
	Median	50%	10%	20%	5%	0%	0%
	N	183	182	183	172	123	122
CPMs/DEMs	Mean	90.1%	2.3%	4%	.9%	.2%	.2%
	Median	97%	1%	.5%	0%	0%	0%
	N	15	12	12	10	10	10

Table 23. Young, Immigrant, and ESL Patient/Client Populations, CNMs and CPMs/DEMs

Midwife Type		Percent of Patients/Clients Younger than 20	Percent of Patients/Clients who are Immigrants*	Percent of ESL Patients/Clients
CNMs	Mean	29.9%	22%	30.7%
	Median	20%	20%	25%
	N	175	182	179
CPMs/DEMs	Mean	5.9%	1.3%	7.5%
	Median	1%	0%	1%
	N	15	15	15

*Nativity other than U.S.

Note: Respondents were asked to approximate the percentages of patients/clients who are younger than 20, are immigrants, and who speak English as a Second Language.

CNM working in a community health center explained that “midwives are naturally more capable of taking care of people in this role because there’s more cultural competence, there’s more open-mindedness...looking at a woman as a whole person and not just where they fall medically, which a lot of these underserved women need. They need that extra help.” While this CNM works in an urban setting with many underserved women, midwifery care is also seen as essential to underserved communities of women from other regions of the state.

A CNM from the western part of Massachusetts explained that, “we see a significant number of undocumented immigrant farm workers. They have adequate insurance to provide care during pregnancy, but once they get past six weeks following delivery, they do not have adequate insurance. Midwives are very important in continuing their ongoing care.” As the following analysis shows, midwives serve women with all types of insurance coverage and no coverage at all. In the case of the CNM patient population, survey data demonstrate that many of their patients rely on state or federal-assisted health care services.

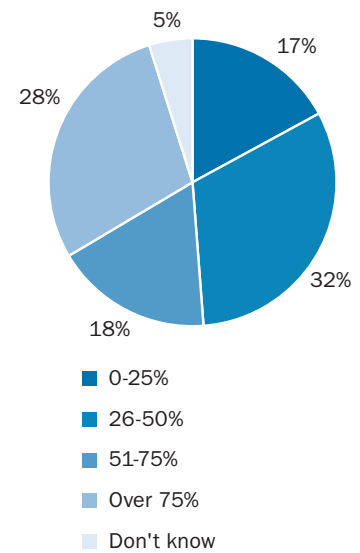
Insurance Coverage

CNMs care for a significant number of women who utilize government-assisted coverage to meet their health care needs. As demonstrated in Figure 20, almost half (46%) of CNMs estimated that over half their patients rely on state or federal assistance for the payment of health care services.

As one CNM explained, “I think that we’re invaluable to vulnerable populations. I think that when you look at midwifery and even the other advanced practice nurses, we’ve really developed as professions by caring for people that other people didn’t want to care for, that didn’t have insurance or were underinsured and who weren’t reimbursed well, that their insurance, if they reimbursed at all, didn’t reimburse well. And so we developed this expertise in caring for uninsured and underinsured women.”

Yet, as indicated earlier in the report, the issue of reimbursement structures and rates remains an important one for midwives. For example, a CNM interviewee working in a private practice explained “we accept Mass Health...especially now people losing their jobs and things like that, we have a lot of people with Mass Health and the reimbursement is terrible.” In a recent change under the federal Patient Protection and Affordable Care Act, CNMs will receive equitable reimbursement for their services under Medicare. The new law improved the reimbursement of CNMs to 100% for Part B services. Although most of CNM clients are not Medicare eligible, this legislation should encourage

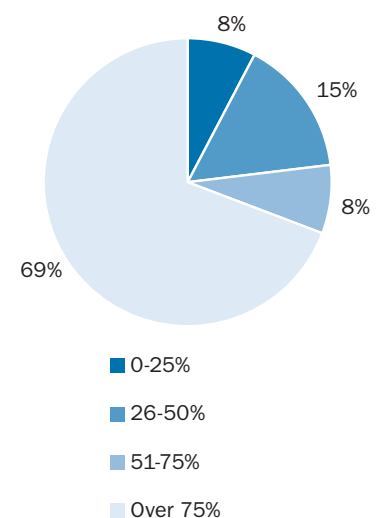
Figure 20. Patient Use of State/Federal Assisted Health Insurance, CNMs



Working CNMs N=164

Note: Respondents were asked for approximate percentage of patients using state or federal assisted insurance as payment method.

Figure 21. Client Use of Self-Pay, CPMs/DEMs



Working CPMs/DEMs N=13

Note: Respondents were asked for approximate percent of clients using self-pay as payment method.

Medicaid programs and private insurers to adopt similar reimbursement policies for midwifery services.⁶³

Unlike the nurse-midwifery patient population, CPMs/DEMs are much more likely to serve women who pay out-of-pocket for midwifery care. Figure 21 shows that 77% of CPM/DEM respondents indicated at least half of their clients “self-pay” for care. According to a CPM interview respondent, “all of my clients would like their insurance to reimburse them. Some of their insurance will but a lot of them who have HMOs cannot be reimbursed because I’m not an in-network provider. Even those with PPOs...I’m an out-of-network provider so the reimbursement is less.”

Massachusetts Health Insurance Reform

Since the passage of the universal coverage reform measure in Massachusetts (Chapter 58 of the Acts of 2006), the state has achieved notable advances in reducing disparities in health care coverage for women.⁶⁴ In this survey, midwives were asked if Massachusetts health coverage reform has affected their work in any way. Approximately one-quarter of CNMs and 22% of CPMs/DEMs responded that it has (CNM response breakdown may be found in Table 24; CPM/DEM data are not shown).

For those midwives who responded that the reform measure has had an impact on their work and who offered written comments about what kind of change has taken place, the general theme is increased health insurance for women. Some midwives specified what this meant for their patients. Several midwives explained that there is clearly

“increased access to care.” As one CNM put it: “more patients are able to obtain care and meds they need.” Yet others cited some of the drawbacks of the law. One midwife noted that, “while more women are insured, there are more insurance policies that provide very little access to preventive or basic care that is non-catastrophic.” Another explained that “there are some insurance companies, like Essential, that do not cover midwives. The patient has to go to an MD even if I have a referral.” One CNM commented about the lack of affordability: “Everyone has insurance, but the deductibles can be so high that patients avoid coming to the office because they cannot afford the deductible. They have insurance but cannot afford to use it.”

Several CPMs/DEMs noted that the universal coverage mandate has served as an obstacle to accessing midwifery care. One CPM/DEM wrote: “People with insurance are often in a situation where they cannot justify paying for both insurance and service, so they allow insurance to dictate care.”

MIDWIVES NOT WORKING IN THE PROFESSION

Although this study’s major focus is on practicing midwives in Massachusetts, the survey allowed for some data

collection on certified nurse-midwives (CNMs) and certified professional midwives and direct-entry midwives (CPMs and DEMs) who are not currently working as midwives. The following discusses some of the key findings related to non-practicing midwives.

Non-Practicing Midwives

Nearly one quarter of all survey respondents indicated they are not currently working as midwives. All non-practicing midwives are CNMs except for one who is a CPM. The average age of non-practicing midwives (53 years old) is bit higher than the average age of midwives currently working in the profession (51 years old) (not shown). Just under a quarter (24%) of non-practicing CNMs are younger than 45, compared with 29% of working CNMs.

Asked whether they are interested in a midwifery position, 40% of non-working midwives answered positively, although only 13.5% indicated that they are seeking employment as a midwife. Nearly 37% indicated actively working in a non-midwifery position, and nearly 15% indicated they are retired. Table 25 lists reasons for not being able to find desired midwifery positions.

Seeking Midwifery Work

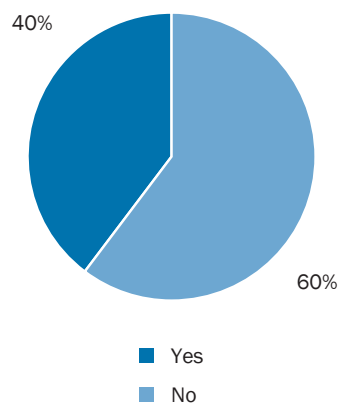
Although relatively few respondents indicated that they themselves are engaged in looking for a midwifery position, the findings show that the awareness about midwives who are actively seeking a midwifery position is quite high, particularly among CPMs/DEMs. Table 26 provides the percentages of CNMs and CPM/DEMs who are aware of midwives seeking a midwifery position.

Table 24. Effect of MA Health Coverage Law on Work, CNMs

Effect of Chapter 58	Working CNMs
Yes	24.9%
No	37.6%
Don't know	37.6%
N	189

Note: Respondents were asked if the Massachusetts universal health coverage law (Ch. 58) has affected respondent’s work in any way.

Figure 22. CNMs Interested in Working as Midwife



Non-working CNMs N=68

Table 25. Reasons Not Currently Working as Midwife, CNMs

Reason	CNMs
Other occupation	36.5%
Retired	14.9%
Seeking midwifery employment	13.5%
On leave	5.4%
Student	1.4%
Other	28.4%
N	74

Table 26. Awareness of Midwives Who Cannot Find Work, CNMs and CPMs/DEMs

	CNMs	CPMs/DEMs
Don't know	6.2%	18.8%
No	59.3%	25%
Yes	34.5%	56.3%
N	194	16

Note: Respondents were asked if they knew any midwives who want to be employed as midwives and cannot find work.

All survey respondents were asked why they believed midwives who want to work as midwives cannot find work. According to given response options, listed in Table 27, the majority (63.6%) of CNMs attribute midwives' inability to find work to too few positions. More than one out of five (21.5%) attribute midwives' inability to find work to lack of experience and 15% cite the inability to secure a consulting physician as a reason for difficulty in finding work.

Of the CNMs who listed "other" reasons for difficulty in securing a midwifery position, at least two CNMs cited each of the following reasons: don't speak second language (one respondent specified Spanish); inability to relocate; not the "right fit"; and demanding hours/inflexibility. A few

Table 27. Top Reasons Midwives Who Want to Work Cannot Find Work, CNMs

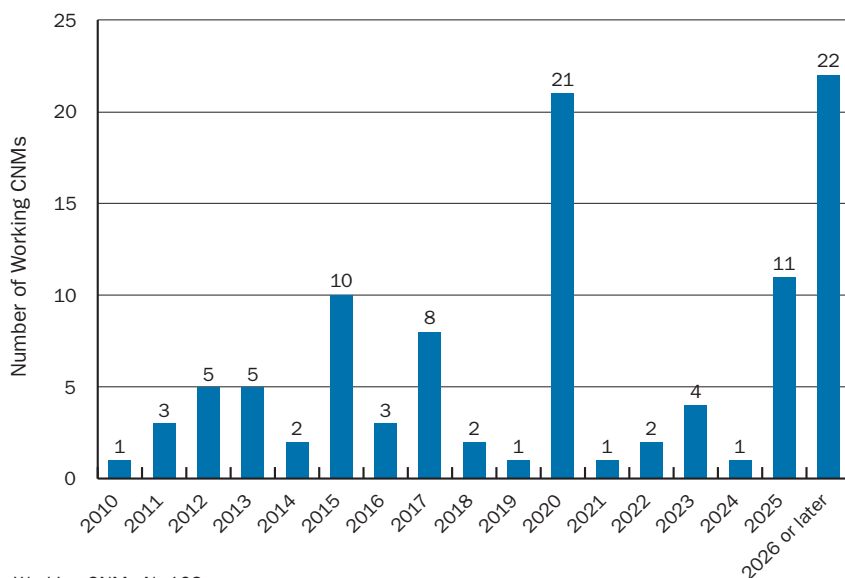
Reason	CNMs
Too few midwife positions	63.6%
Lack of experience	21.5%
Other	21.5%
Inability to secure consulting physician	15%
N	107

CNMs also offered additional reasons: some positions require Master's degree, age limited mobility, bad outcome, poor reputations, family issues, demanding work conditions, lack of consumer demand, and interest in working in saturated areas.

THE FUTURE

Looking ahead to the future of the midwifery workforce in Massachusetts, it is clear from survey data that the nurse-midwifery workforce in the Commonwealth is aging and that there will be a substantial number of retirements over the next decade. Additionally, this section discusses projections of certified nurse-midwives about their group practice's workforce needs in the short-term.

Figure 23. Projected Retirement Year, CNMs



Working CNMs N=102

Note: Respondents were asked what year they envision retiring from practice.



Table 28. Anticipated Year of Retirement, CNMs and CPMs/DEMs

Year	Working CNMs	Working CPMs/DEMs
Don't know	46.1%	81.3%
2010-2015	13.6%	0%
2016-2020	18.3%	12.5%
2021-2030	14.7%	6.3%
2031 and beyond	7.3%	0%
N	191	16

Retirement

As Table 28 demonstrates, when asked about the year in which they envision retiring from practice, nearly half (46.1%) of working CNMs indicated that they “don’t know.” Yet a significant number of CNMs – over thirty percent – provided a projected retirement year between 2010 and 2020. Most working CPMs/DEMs who responded to the retirement inquiry (81.3%) did not know in what year they envision midwifery practice retirement. More than one in ten (12.5%) of working CPMs/DEMs indicated that they plan to retire between 2016 and 2020.

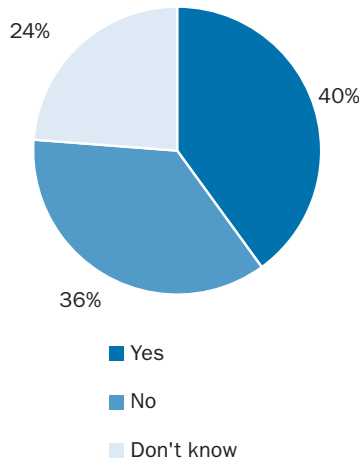
Figure 23 on page 29 shows that 21 out of 102 CNMs who provided an anticipated retirement year expect to stop practicing in 2020. Of all CNMs who indicated a retirement year (N=102), only 33 envision retiring in 2025 or later.

New Midwifery Positions

The survey also asked midwives about new midwifery positions anticipated in their practice over the next two years and, as shown in Figure 24, 40% of working CNMs indicated that they do expect new positions. This suggests that a substantial number of CNMs see some level of growth in their practice – at least in the short-term.

Figure 25 provides a breakdown of CNM responses about the number of midwifery positions anticipated to be created in their practice over the next two years. Forty-three percent of CNMs answering this question expect one position to be created. Many respondents indicated that they don’t know how many positions will be created.

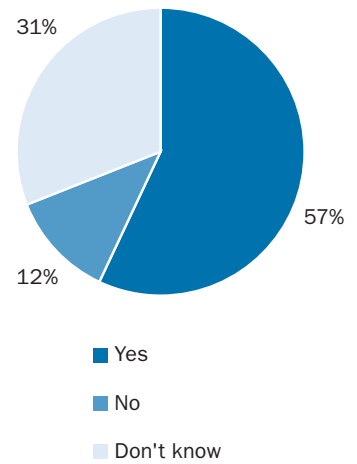
Figure 24. New Midwifery Positions Anticipated, CNMs



Working CNMs N=185
 Note: Respondents were asked if they anticipated any midwifery positions in their practice in the next two years.

Finally, survey data demonstrate that most CNMs (57%) believe that the expected pool of midwife applications is adequate to fill anticipated vacant positions over the next two years. Only 12% indicated that the pool of applicants is not adequate to fill vacant positions during this period.

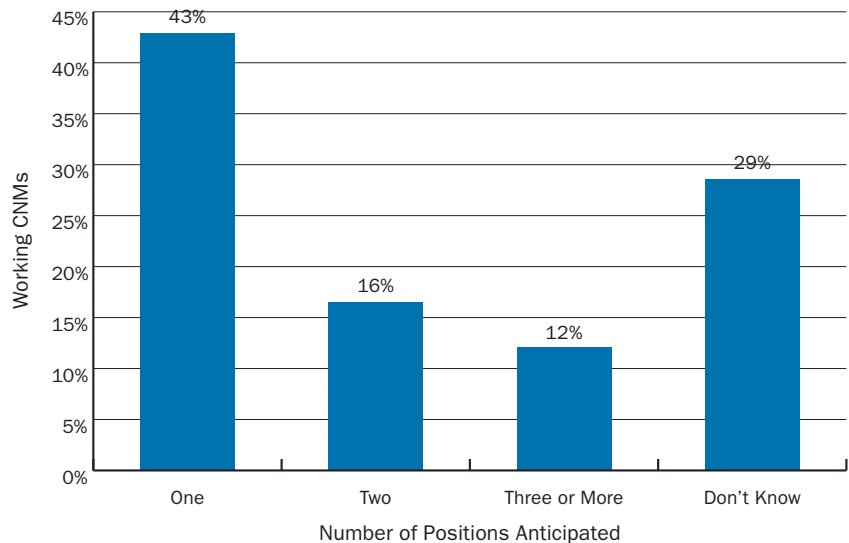
Figure 26. Adequacy of Midwife Applicant Pool, CNMs



Working CNMs N=100
 Note: Respondents were asked if the expected pool of midwife applicants is adequate to fill anticipated vacant positions over the next two years.

Given the retirement projections of CNMs in this study, Massachusetts will likely face a nurse-midwifery workforce shortage in the near future. The final section of the report addresses this and other significant findings from this study in the context of public policy.

Figure 25. Anticipated Number of Midwifery Positions, CNMs



Working CNMs N=91

CONCLUSIONS AND POLICY CONSIDERATIONS

This study is the first to explore the midwifery workforce inclusive of both nurse-midwives (CNMs) and direct-entry midwives (CPMs/DEMs) on a state level. Based on employment context, practice scope, and the demographics of midwives and of populations served, there are some substantial differences between these groups of midwives. Yet there are also many commonalities. Similarly, several public policy issues are relevant to the workforce generally while some are more specific to particular types of midwives.

As the report demonstrates, midwives primarily care for childbearing women, yet a significant segment of nurse-midwives in Massachusetts deliver primary care, especially to vulnerable and underserved populations of women. In terms of childbirth, given that CPMs/DEMs care for women who birth at home and CNMs care for women in hospitals and birth centers, there are variations in work structure and the nature of employment. CPMs/DEMs are often self-employed and most CNMs work for large organizations. These employment variations, coupled with the fact that CPMs/DEMs are not part of the formal health care system (which is particularly significant in terms of credentialing and reimbursement), result in a notable income disparity between the two groups.

Caring for Women

As shown, CNMs make a significant contribution to the care of women of color across Massachusetts as well as vulnerable and underserved women. About one-third (33%) of CNMs indicated that at least 31% of their patients are Hispanic or Latina. A substantial number of CNMs care for young women, recent immigrants, and women whose first language is not English. The majority of CNMs noted that a significant proportion of their service reimbursement comes through government-assisted health care. In addition, many CNMs provide care in safety net hospitals. Six of the eleven hospitals in which CNMs attend over 20% of the births received 40% to 80% of their payment from a public source in 2008.⁶⁵ Without nurse-midwives, many of these hospitals may not be able to maintain a sufficient pro-

vider base to care for these women.

Furthermore, the capacity to deliver primary care services across the Commonwealth may be enhanced with further integration of nurse-midwives into the primary care delivery system and appropriate reimbursement to such providers.

Future of the Workforce

The most pressing concern for both groups of midwives is that they collectively represent an aging workforce. Nearly half of all midwives in Massachusetts have been practicing for over 10 years and many for more than two decades. Over 30% of CNMs indicated possible retirement by 2020. With an average age of 53, it is likely that CPMs/DEMs will also soon face a workforce shortage.

During the 1980s, in response to a rising infant mortality rate in Massachusetts, the Commonwealth assisted in the development of several CNM education programs. Although highly successful at the time, there have recently been program closures and decreasing enrollment in the remaining program. A midwifery workforce shortage would pose challenges in meeting women's reproductive and maternal health needs, particularly for the vulnerable populations served by CNMs. Policymakers and health care system stakeholders should consider how to replace that level of skill and ensure maintenance of the essential relationships that midwives have with both their patients/clients *and* the communities in which they work.

Additionally, there must be consideration of how to increase the racial and ethnic diversity of the midwifery workforce and how to ensure that there is ample opportunity and financial resources for interested individuals to pursue midwifery as a career. Moreover, there needs to be attention to the formal and informal educational needs of midwives.⁶⁶ It is also important for policymakers to consider the issue of licensure for certified midwives (CMs) in Massachusetts.

Internationally, many countries track the midwifery workforce and support the educational programs that produce the next cohort of midwives.

Massachusetts needs to do the same.

Practice Challenges

One of the study's key findings is that all CPMs/DEMs and 81% of CNMs identified obstacles to their preferred style of practice and the majority of midwives indicated that legislative change could address identified practice constraints. The data demonstrate that current regulatory statutes or lack thereof in the Commonwealth serve as a barrier to the preferred style of midwifery practice. First, many CNMs articulated a concern about physician supervisory language in their prescriptive authority that restricts their ability to become Licensed Independent Practitioners (LIPs) and limits access to hospital admitting privileges. A second barrier identified by CNMs was the lack of enabling legislation for CMs (a group described in detail in the "Introduction") to practice in Massachusetts.

For CPMs/DEMs, the data indicate that the absence of enabling legislation poses challenges both in terms of women for whom they care and their own practices. Specifically, CPMs/DEMs do not always have access to adequate emergency supplies and when they have to transfer a client to the hospital they often do not have relationships with accepting providers, making an uncommon but stressful situation more problematic.⁶⁷ Another practice challenge is the potential liability that one may encounter while working. Almost all CNMs had malpractice insurance coverage usually paid for by their employer. Given the limited liability insurance for home birth, only 5.9% of CPMs have self-purchased malpractice insurance.

Changing Health Care Environment

As documented earlier in the report, midwifery care has long been identified as being cost-effective and of high quality. For more than fifty years, researchers have been evaluating the care provided by CNMs and found that midwifery care was of high quality, cost effective, and improved access to care especially for vulnerable women.⁶⁸ The Commonwealth faces a rising cesarean rate, rapidly increasing health care costs, and stark and persistent racial/

ethnic disparities in infant and maternal health outcomes. Policymakers and health care stakeholders should consider the significant contributions of midwives to the Massachusetts health care system when engaged in efforts to increase quality of care, reduce costs, and ensure access to essential services, particularly to vulnerable populations of women.

With passage of the federal Patient Protection and Affordable Care Act (PPACA), many women's health care stakeholders have been advocating for adoption of evidence-based maternity standards and practices. Policymakers should take into account the importance of midwifery care to women across the United States – and, specifically, here in Massachusetts – during the PPACA implementation process.

A related policy change at both the federal and state levels pertains to the concept of a Patient Centered Medical Home (PCMH) which is designed to promote comprehensive, coordinated, patient-centered care delivered by teams of primary care providers, including physicians, nurses, and others involved in the individual's care. Over the next few years in Massachusetts there will be PCMH demonstration projects at several community health centers (CHC).⁶⁹ Since many CNMs work in those CHCs, this represents an important opportunity to document the advantages of midwifery care in PCMHs.

Finally, given that there is now considerable attention to increasing the active participation of consumers into health care decision-making, the midwifery model of personalized patient/client-centered care encounters will be an additional strength that midwives bring to health care teams in the future.

In order to assure that midwifery continues to have a focal role in the care of women and families as the health care system continues to evolve, informed state regulation will become increasingly important. As indicated in the "Introduction," a supportive state regulatory climate facilitates the growth in the midwifery workforce and allows midwives to fully meet both individual patient/client needs as well as those of the health care team and the system more generally.

NOTES

¹ According to national birth data, CNMs/CMs attended 316,811 births in 2007, representing 10.8% of all vaginal births J. A. Martin et al., "Births: Final Data for 2007," National Vital Statistics Reports 58, no. 24 (2010), 1.

² In addition, after a decline from 1990 to 2004, the percentage of home births increased by 5% in 2005 to .59% and remained steady in 2006. Marian F. MacDorman and Gopal K. Singh, "Midwifery Care, Social and Medical Risk Factors, and Birth Outcomes in the USA," *Journal of Epidimial Community Health* 52 (1998), 310.

³ In 2008, 53.3% of CNMs/CMs identified reproductive care and 33.1% identified primary care as main responsibilities in their full-time positions. Kerri Durnell Schuiling, Theresa Ann Sipe, and Judith & Fullerton, "Findings from the Analysis of the American College of Nurse-Midwives' Membership Surveys: 2006-2008," *Journal of Midwifery & Women's Health* 55, no. 4 (2010), 299.

⁴ Carol Sakala and Maureen P. Corry, *Evidence-Based Maternity Care: What it is and What it Can Achieve* (New York, NY: Milbank Memorial Fund, 2008). Marie Hatem et al., "Midwife-Led Versus Other Models of Care for Childbearing Women (Review)," *The Cochrane Library* 2008, no. 4 (2008), 1.

⁵ *ibid.* p. 14.

⁶ Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation and Division of Research and Epidemiology, *Massachusetts Births 2008* (Boston, MA: Massachusetts Department of Public Health, 2010), http://www.mass.gov/Eeohhs2/docs/dph/research_epi/birth_report_2008.pdf.

⁷ Sakala and Corry, *Evidence-Based Maternity Care: What it is and What it Can Achieve*, 5.

⁸ *ibid.* p. 62.

⁹ Jane Sandall et al., "Discussions of Findings from a Cochrane Review of Midwife-Led Versus Other Models of Care for Childbearing Women: Continuity, Normality and Safety," *Midwifery* 25, no. 1 (2009), 8.

¹⁰ Sakala and Corry, *Evidence-Based Maternity Care: What it is and What it Can Achieve*, 2.

¹¹ Massachusetts Division of Health Care Finance and Policy, *Massachusetts Health Expenditures Accelerating* (Boston, MA: Commonwealth of Massachusetts, 2006), http://www.mass.gov/Eeohhs2/docs/dhcfp/r/pubs/analysisbrief/aib_10.pdf.

¹² *ibid.* p. 2.

¹³ American College of Nurse-Midwives, *Quickinfo: Cost-Effectiveness* (Silver Spring, MD: American College of Nurse Midwives, 2008), http://www.midwife.org/siteFiles/education/Cost_Effectiveness_6_08.pdf.

¹⁴ The Foundation reports that fewer medical graduates are choosing to enter primary care and nearly half of the counties in the United States had no obstetrician/gynecologist providing direct patient care in 2004. Kaiser Family Foundation, "Women's Health and Election 2008," http://www.kff.org/womenshealth/h08_7822.cfm (2009).

¹⁵ "While the state's average primary care to population ratio is high, there is significant variation in the distribution of PCPs across the state. Fourteen percent of Massachusetts residents are living in areas federally designated as primary

care health professional shortage areas (HPSAs)." Massachusetts Division of Health Care Finance and Policy, *Measuring Health Care Quality and Cost in Massachusetts* (Boston, MA: Commonwealth of Massachusetts, November 2009).

¹⁶ Eugene R. Declercq et al., "State Regulation, Payment Policies, and Nurse-Midwife Services," *Health Affairs* 17, no. 2 (1998), 190.

¹⁷ American Midwifery Certification Board, 2009 Annual Report (Silver Spring, MD: American College of Nurse Midwives, 2010, October 7).

¹⁸ Katherine Camacho Carr, "Status Report: Midwifery Education, the Midwifery Workforce & ACNM," http://www.midwife.org/siteFiles/news/JF_06_Pres_Pen.pdf (accessed November 5, 2010).

¹⁹ Suzan Ulrich, "Applicants to a Nurse-Midwifery Education Program Disclose Factors that Influence their Career Choice," *Journal of Midwifery and Women's Health* 54 (2009), 127.

²⁰ Eugene R. Declercq, "The Trials of Hanna Porn: The Campaign to Abolish Midwifery in Massachusetts," *American Journal of Public Health* 84, no. 16 (1994), 1022.

²¹ H. Kennedy, A. Rousseau, and L. K. Low, "An Exploratory Metasynthesis of Midwifery Practice in the United States," *Midwifery* 19 (2003), 204.

²² Raymond DeVries, "The Contest for Control: Regulating New and Expanding Health Occupations," *American Journal of Public Health* 76, no. 9 (1986), 1147.

²³ C. M. Dower et al., *Charting a Course for the 21st Century: The Future of Midwifery* (San Francisco, CA: Pew Health Professions Commission and the UCSF Center for the Health Professions, April 1999), 5.

²⁴ *ibid.* p. 6.

²⁵ Hatem et al., *Midwife-Led Versus Other Models of Care for Childbearing Women (Review)*, 1-40 4.

²⁶ Judith Rooks, "The Midwifery Model of Care," *Journal of Nurse-Midwifery* 44, no. 1 (1999), 370.

²⁷ Citizens for Midwifery, "The Midwives Model of Care," <http://cfmidwifery.org/mmoc/define.aspx> (accessed March 2, 2011).

²⁸ C. M. Dower et al., *Charting a Course for the 21st Century: The Future of Midwifery* (San Francisco, CA: Pew Health Professions Commission and the UCSF Center for the Health Professions, April 1999).

²⁹ Sakala and Corry, *Evidence-Based Maternity Care: What it is and What it Can Achieve*, 51.

³⁰ Eugene R. Declercq, "The Trials of Hanna Porn: The Campaign to Abolish Midwifery in Massachusetts," *American Journal of Public Health* 84, no. 16 (1994), 197.

³¹ The state scores were based on whether or not the state addressed regulatory (board membership and prescription authority) or reimbursement issues (Medicaid and private insurers); rankings were designated as low, medium, or high levels of support for CNM practice.

³² Midwives who have multiple midwifery certifications (i.e. CNM and CPM) are not reflected as a distinct category in this approximate breakdown.

³³ While 309 surveys were completed and returned, one respondent did not indicate midwife type and is not included in most of the midwife-group based analyses contained in the report.

³⁴ One respondent was dropped from this 'years worked' chart and analysis as she indicated that she had not worked in the field as midwife.

³⁵ Schuiling, Sipe, and Fullerton, Findings from the Analysis of the American College of Nurse-Midwives' Membership Surveys: 2006-2008, 299-307.

³⁶ While the survey only provided information about Massachusetts residence, we know from the mailing addresses of approximately 40 respondents who do not live in the Commonwealth that most live in New England, including ten who reside in Rhode Island and six in New Hampshire.

³⁷ The majority of both CNMs and CPMs/DEMs reported working in Central American and/or Caribbean countries. In addition, CNMs have worked in Europe, India, Africa and the Far East and CPMs/DEMs have practiced in Canada and Africa.

³⁸ Specifically, 81% of OB/GYNs were accepting new patients, down from 92% in 2008. Among OB/GYN physicians accepting new patients, the average wait time was 46 days. Richard Gulla, "Massachusetts Medical Society Study Records Shortages of Primary Care Physicians for the First Time [News Release]," http://www.massmed.org/AM/Template.cfm?Section=News_Releases&CONTENTID=15224&TEMPLATE=/CM/ContentDisplay.cfm (accessed February 22, 2011).

³⁹ When compared to national data, more than twice as many Massachusetts CNMs as the national sample of CNMs work in the hospital setting (32.7% for ACNM respondents) and a slightly higher number of Massachusetts CNMs compared to ACNM respondents worked in non-profit organizations (4.1% for ACNM respondents). Comparative data were more similar in regard to those working in physician practices (30.5% for ACNM survey respondents) and midwife-owned practices (3.1% for ACNM respondents).

⁴⁰ Over a quarter of CNM respondents indicated that they were involved in precepting "others." The majority of other responses were advanced practice nurses (APRNs), with adult, family, and women's health APRN students being the most common. A few CNMs noted that they also mentored high school, nursing, emergency medical technician, and physician assistant students.

⁴¹ Both CNMs and CPMs/DEMs develop staffing plans to ensure that adequate resources are available for this most variable of times. In large hospital-based services with many births, CNMs often work shifts to ensure that there is a skilled attendant waiting for a woman arriving in labor. For home birth services, a birthing team, usually a primary midwife and a birth attendant, must be on call and available when needed.

⁴² It is likely that self-employment income for CNMs may be from childbirth education class teaching and expert witness testimony compensation.

⁴³ Most hospitals require any practicing provider to have, as a minimum, a malpractice insurance policy before they can provide care to patients in that institution.

⁴⁴ Based on an Internet search, only one insurance company could be identified as providing home birth malpractice insurance to both CPMs/DEMs and CNMs. One had to be licensed to apply for that coverage. (<https://www.cisinsurance.com/Midwives/free-quote.cfm>).

⁴⁵ U.S. Congress, Office of Technology Assessment, Defensive Medicine and Medical Malpractice OTAH-602 (Washington, DC: U.S. Government Printing Office, 1994), iotech.law.lsu.edu/policy/9405.pdf.

⁴⁶ T. Bodenheimer, "High and Rising Health Care Costs. Part 3: The Role of Health Care Providers." *Annals of Internal Medicine* 142 (2005), 996, www.annals.org/content/142/12_Part_1/996.full.pdf.

⁴⁷ Antepartum care is provided during pregnancy; intrapartum care is provided during labor and birth; postpartum indicates after childbirth.

⁴⁸ The median and mode for CNMs is 50 births per year; the median and mode for CPMs/DEMs is 25 births per year.

⁴⁹ Sakala and Corry, Evidence-Based Maternity Care: What it is and What it Can Achieve. *The Medical News*, "Midwives Credited with Lowering C-Section Rate at New Jersey Hospital," <http://www.news-medical.net/news/2005/04/04/8909.aspx> (accessed February 22, 2011).

⁵⁰ F. Menacker and Brady Hamilton, Recent Trends in Cesarean Delivery in the United States (Hyattsville, MD: National Center for Health Statistics, March 2010), <http://www.cdc.gov/nchs/data/databriefs/db35.pdf>.

⁵¹ Certain procedures are not taught as part of a basic CNM/CM education. In order to ensure patient/client safety and document midwifery skill, CNMs/CMs must follow the Standards of Midwifery Practice when expanding their skill set to incorporate advanced procedures such as assisting at cesareans, and performing endometrial biopsies and circumcisions.

⁵² Institute of Medicine, *Crossing the Quality Chasm: A New Health System for the 21st Century* (Washington, DC: National Academy of Science, 2001).

⁵³ This shortening of the visit time may be surprising given that their clients deliver at home and it is possible that several postpartum encounters occur between the CPM/DEM and her client but that information was not collected in this survey. Similar to the CPMs/DEMs, the CNMs may have more than one postpartum visit with their clients.

⁵⁴ D. Dugdale, R. Epstein, and S. Pantilat, "Time and the Patient-Physician Relationship," *Journal of General Internal Medicine* 14, no. S1 (1999), S34.

⁵⁵ In a study completed before the shift to managed care, Paine and colleagues examined the difference between CNM and physician visits. They found that CNMs had longer face-to-face encounters with patients and involved their clients with more teaching and counseling during the visit. L. Paine et al., "A Comparison of Visits and Practices of Nurse-Midwives and Obstetrician-Gynecologists in Ambulatory Care," *Journal of Midwifery and Women's Health* 45, no. 1 (2000), 37.

⁵⁶ M. Donaldson, K. Yordy, and N. Vanselow, eds., *Defining Primary Care: An Interim Report* (Washington, DC: National Academy Press, 1994).

⁵⁷ R. W. Grant and L. J. Finnochio, California Primary Care Consortium Subcommittee on Interdisciplinary Collaborative Teams in Primary Care (San Francisco, CA: Pew Health Professions, 1995).

⁵⁸ Massachusetts Medical Society, 2010 Physician Workforce Study (Boston, MA: Massachusetts Medical Society, 2010), <http://www.massmed.org/>

[AM/Template.cfm?Section=Research_Reports_and_Studies2&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=36166](http://www.massmed.org/AM/Template.cfm?Section=Research_Reports_and_Studies2&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=36166) (accessed November 16, 2010).

⁵⁹ Institute of Medicine, *The Future of Nursing: Leading Change, Advancing Health* (Washington, DC: The National Academy Press, 2011).

⁶⁰ In a 2002 national survey, lack of primary care education was identified by 60% of the CNMs as the leading barrier to providing primary care. Deborah Stuart and Sachiko Oshio, "Primary Care in Nurse-Midwifery Practice: A National Survey," *Journal of Midwifery and Women's Health* 47 (2002), pp 104-109.

⁶¹ Judith Rooks, *Midwifery and Childbirth in America* (Philadelphia, PA: Temple University Press, 1997).

⁶² Marian F. MacDorman, Eugene R. Declercq, and F. Menacker, "Trends and Characteristics of Home Births in the United States by Race and Ethnicity, 1990-2006," *Birth* 38, no. 1 (2011), 17.

⁶³ American College of Nurse-Midwives, "Midwives Celebrate Equitable Reimbursement," <http://www.midwife.org/hr3590.cfm> (accessed March 15, 2011).

⁶⁴ Tracy Hyams and Laura Cohen, *Massachusetts Health Reform: Impact on Women's Health* (Boston, MA: Brigham and Women's Hospital; The Massachusetts Health Policy Forum, June 2010), http://masshealthpolicyforum.brandeis.edu/forums/Documents/Issue%20Brief_ConnorCenter.pdf.

⁶⁵ Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation, and Division of Research and Epidemiology, *Massachusetts Births 2008*.

⁶⁶ As explained more fully in the "Introduction," educational programs for direct-entry midwives vary and there is a current debate focusing on the legitimacy of apprenticeship and self study in contrast to a formal educational program for entry into the discipline of midwifery. Since any midwife (CNM/CM or CPM/DEM) must gain skills through both study and practice, this particular aspect of preparation and training will likely be resolved by future midwives requesting both formal and informal education in all practice sites.

⁶⁷ Transfer from home to a hospital occurs in 7-17% of home births. MacDorman, Declercq, and Menacker, Trends and Characteristics of Home Births in the United States by Race and Ethnicity, 1990-2006, 17-31.

⁶⁸ L. Paine and D. Williams, *Positioning Midwifery in Health System Reform* (Silver Spring, MD: American College of Nurse Midwives, February 2010).

⁶⁹ Massachusetts Office of Health and Human Services, "Mission and Goals of the Massachusetts PCMH," http://www.mass.gov/?pageID=eohhs2terminal&L=5&L0=Home&L1=Government&L2=Special+Commissions+and+Initiatives&L3=Healthcare+Reform&L4=Massachusetts+Patient-Centered+Medical+Home+Initiative&sid=Eoehhs2&b=terminalcontent&f=eohhs_healthcare_reform_medicalhomes_medical_home_mission&csid=Eoehhs2 (accessed March 24, 2011).

APPENDIX A. DETAILED METHODOLOGY

This research design included a survey administered to midwives living and/or working in Massachusetts supplemented by interviews with five midwives (four CNMs and one CPM), an obstetrician, and a state public health official for a total of seven interviews.

IRB Approval

The study received approval from the University of Massachusetts Boston Institutional Review Board (IRB) in November 2009. Consent for participation in the survey component of the study was indicated through completion and return of the survey. Consent for participation as an interview respondent and for recording of the interview was indicated by signed approval of consent forms.

Study Participant Solicitation

The sampling frame included midwives of all backgrounds and types (including CNM, CM, CPM, and DEM) residing in Massachusetts. Researchers collected all available names/ mailing addresses of midwives working in Massachusetts but living in another state, midwives living and working in Massachusetts, and midwives living in Massachusetts but working elsewhere. Names and mailing addresses of midwives were collected from three different data sources: 1) The Division of Health Professions Licensure (DHPL), Department of Public Health of the Commonwealth of Massachusetts Executive Office of Health and Human Services (a list of nurse-midwives was obtained in January 2010); 2) The American College of Nurse-Midwives (ACNM) (Massachusetts list of CNMs/CMs who are members of the ACNM was obtained in April 2010); 3) Directory of DEMs (including CPMs) available from the Massachusetts Midwives Alliance (MMA) website (accessed in December 2009 and again in April 2010) and an Internet search of midwifery practices in Massachusetts.

One of the limitations of the study was in obtaining a complete listing of direct-entry midwives. The MMA website served as the only source of names and contact information for this group of midwives, and it was not possible to obtain mailing addresses for all of the names listed on the website. Electronic mail requests for postal mailing addresses for DEMs found through the Internet were only partially successful. It is important to note that two different data sources were utilized for survey mailings to CNMs (DHPL/MA DPH and ACNM). Consequently, there was a brief delay in the survey administration to some potential study participants whose name and contact information were not obtained through the DHPL list but was provided through the ACNM Massachusetts membership list once principal investigators received ACNM approval for the project and use of ACNM data.

Data Collection Instruments

The paper survey instrument was developed by principal investigators with input from the project advisory board, a survey specialist from University of Massachusetts Boston's Center for Survey Research, and five pilot testers (including four CNMs and one CPM). Several questions included in the survey were based on questions from other surveys of midwives, including the American College of Nurse-Midwives Annual Membership Core Data Survey, the Practice and Compensation of Nurse-Midwives in Connecticut Survey, the Retirement Survey for Florida CNMs, the Obstetrical Providers' Career Satisfaction Survey and a Michigan Obstetric Care Supply Survey. The final survey was ten pages long and was comprised of a total of 79 questions in five areas: professional background (17 items), work settings (10 items), work (28 items), patients/clients (10 items), and respondent demographic characteristics (14 items). For questions regarding birth rates, areas of practice, and income, respondents were asked to provide 2009 data. All other questions sought current information. For some questions, respondents were able to provide further descriptive information as in the case of response option of "other." Only five questions were fully open-ended.

The survey was intended to collect information primarily from midwives currently employed in Massachusetts. Therefore, midwives living in Massachusetts but not currently working as a midwife were asked to complete only the first section of the survey. The survey was developed to capture perspectives, experiences, and background information from various types of midwives, although there were some questions in the survey that only applied to CNMs and not DEMs. The survey in its entirety may be found online at www.mccormack.umb.edu/centers/cwppp/mamidwives.php.

The semi-structured interview guide utilized for the supplemental interviews conducted in the study contained 20 questions covering three main topics: respondent background, midwifery care and midwifery workforce.

Survey Administration

The survey was sent through the United States Postal Service with an IRB-approved introduction letter in March 2010 for midwives identified through the DHPL and MMA sources. Follow-up postcards were mailed to non-respondents approximately four weeks later, and the second round of the survey mailing for non-respondents occurred in late April. Final follow-up postcards were sent in May 2010. For additional CNMs identified through the ACNM Massachusetts list, the first mailing was sent in April 2010 with follow-up postcards and second survey mailings sent by the end of May 2010. Survey administration was completed by mid-June 2010.

Response Rate

A total of 536 surveys were mailed and 15 were undeliverable. Out of 521 delivered surveys, 311 were completed and returned. Two of the returned surveys were ineligible due to student status (either direct-entry or nurse-midwifery student). Therefore, excluding those that were undeliverable and ineligible, the following analysis is based on 309 surveys out of 519 for a 60% response rate. One of the reasons for non-completion of the survey based on electronic, phone, and written correspondence between potential survey respondents and researchers was residence. A number of midwives indicated that they were no longer living and/or working in the Commonwealth of Massachusetts. Sensitivity surrounding personal information, such as income, was identified as another reason for survey non-completion. Additionally, it is possible that the survey length posed a challenge for some potential respondents who felt that they did not have the time to complete the survey.

Interviews

Three researchers were involved in conducting interviews. Interviews were conducted in a private and confidential room primarily at the work setting or home of the participant. On average, the interviews lasted for 43 minutes and ranged from 32 minutes to 65 minutes. All interviews were recorded with a digital recorder.

Data Analysis

A comprehensive coding manual was developed for data entry of survey data. Survey data were entered into Statistical Package for the Social Sciences (SPSS) 18 and several coding checks were conducted to ensure inter-coder reliability and accurate data entry.

Open-ended responses for each survey were recorded in Word documents and uploaded to NVivo for coding and analysis. Interviews were transcribed by a professional transcriptionist and checked for accuracy. The transcripts were also uploaded to NVivo for analysis.

As indicated by the number of survey responses provided for each table/figure included in this report, some survey respondents did not answer every question. Therefore, only valid percents were utilized and missing responses are generally not reported in the data provided. Several questions allowed for multiple responses ("check all that apply") and this is indicated in the table/figure generated.

Visual displays of data (tables/figures) generally distinguish between the two main groups of midwives analyzed in this report: certified nurse-midwives (CNMs) and direct-entry midwives (DEMs), including certified professional midwives (CPMs). CNMs who were also a CPM or DEM were included in the CNM category for analytical purposes. Tables and figures based on midwives currently working as midwives include labels such as "Working CNMs" and/or "Working CPMs/DEMs." Some tables present data according to most common response for ease of reading the table, but most present data using alphabetical ordering of response options.

APPENDIX B. SUPPLEMENTAL TABLES

Table 29. Additional Employment, CNMs and CPMs/DEMs

Additional Employment	Working CNMs	Working CPMs/DEMs
Yes	14.5%	50%
No	85.5%	50%
N	193	16

Note: Respondents were asked if they had additional employment, other than midwifery work.

Table 30. Supplemental Income from Midwifery Activities, CNMs and CPMs/DEMs

Supplemental Income Amount	Working CNMs	Working CPMs/DEMs
None	57.5%	28.6%
\$1-5,000	26.9%	64.3%
\$5,001-10,000	9%	0%
\$10,001-20,000	3.7%	7.1%
Over \$20,000	3%	0%
N	134	14

Note: Supplemental income in 2009 from midwifery-related activities reported by respondents, such as extra compensation for precepting, teaching/lecture compensation, bonuses, and other sources of income.

Table 31. Midwifery Work Outside Commonwealth, CNMs and CPMs/DEMs

	Working CNMs	Working CPMs/DEMs
Yes	5.1%	47.1%
No	94.9%	52.9%
N	198	17

Table 32. Insurance Company Credentialing, CNMs and CPMs/DEMs

	Working CNMs	Working CPMs/DEMs
Yes	84.1%	6.3%
No	5.1%	68.8%
Don't know	10.8%	25%
N	195	16

Table 33. Number of Managed Care Contracts in Practice, CNMs and CPMs/DEMs

	Working CNMs	Working CPMs/DEMs
None	0%	78%
1 to 3	5%	6%
4 to 10	21%	11%
More than 10	14%	0%
Don't know	60%	6%
N	191	18

Note: Respondents were asked "roughly, how many managed care contracts does your practice have such as HMOs, PPOs, IPAs, and point-of-service plans?"

Table 34. Majority of Patients/Clients Seeking Midwifery Care, CNMs and CPMs/DEMs

	Working CNMs	Working CPMs/DEMs
Yes	43.6%	100%
No	50%	0%
Don't know	6.4%	0%
N	188	17

Note: Respondents were asked "Do most women come to your practice specifically because they are seeking midwifery care?"

Table 35. LGBT Population, CNMs and CPMs/DEMs

Percent of Population	Working CNMs	Working CPMs/DEMs
Don't know	34.2%	11.8%
None	7.1%	41.2%
1-10%	53.5%	47.1%
11-20%	2.6%	0%
Over 21%	2.6%	0%
N	155	17

Note: Respondents were asked to approximate the percent of their patients/clients who are Lesbian, Gay, Bisexual or Transgender (LGBT).

Table 36. Location of Births Attended, CNMs and CPMs/DEMs

	CNMs	CPMs/DEMs
Community hospital	83.2%	38.9%
Tertiary hospital	70.5%	22.2%
Birth center	44.2%	66.7%
Home	26.7%	94.4%
Other	3.2%	11.1%
N	285	18

Note: Respondents were asked to indicate where they have ever attended births.

Table 37. Overall Cesarean Delivery Rate, CNMs and CPMs/DEMs

Cesarean Delivery Rate	Working CNMs	Working CPMs/DEMs
<12%	9.2%	76.5%
12-17%	16.3%	0%
18-23%	14.7%	11.8%
24-29%	5.4%	0%
30-35%	6.5%	0%
Don't know	42.9%	11.8%
Not applicable	4.9%	0%
N	184	17

Note: Respondents were asked for practice's total cesarean section rate in 2009.

APPENDIX B. SUPPLEMENTAL TABLES *Continued*

Table 38. Data Collection on Race, Ethnicity, Language of Patients/Clients, CNMs and CPMs/DEMs

	Working CNMs			Working CPMs/DEMs		
	Race	Ethnicity	Language	Race	Ethnicity	Language
Yes	53.6%	54.9%	49.5%	60%	53.3%	53.3%
No	32.3%	31.1%	36.3%	40%	46.7%	46.7%
Don't know	14.1%	14%	14.2%	0%	0%	0%
N	192	193	190	15	15	15

Note: Respondents were asked if they collect self-reported data on race, ethnicity and language from the women for whom they care.

Table 39. Patient/Client Payment Methods, CNMs and CPMs/DEMs

Percent of Population	Working CNMs			Working CPMs/DEMs		
	Private Insurance	State/Federal Assisted Insurance	Self-pay	Private Insurance	State/Federal Assisted Insurance	Self-pay
0%	1.2%	0%	30.8%	18.2%	77.8%	0%
1-25%	33.7%	17.1%	61.5%	27.3%	11.1%	7.7%
26-50%	24.5%	31.7%	0%	45.5%	0%	15.4%
51-75%	23.9%	17.7%	0.9%	0%	11.1%	7.7%
Over 75%	11.7%	28.7%	0%	9.1%	0%	69.2%
Don't know	4.9%	4.9%	6.8%	0%	0%	0%
N	163	164	117	11	9	13

Note: Respondents were asked to approximate percentage of patients/clients who use private insurance (i.e., indemnity, PPO, MCO/HMO), state or federal assisted insurance (i.e., Medicaid, Medicare, Commonwealth Care, Champus), and self-pay methods of payment. The "other" category is not included in table.

Table 40. Appointment Lengths for Maternity Patients/Clients in Minutes, CNMs and CPMs/DEMs

	Working CNMs			Working CPMs/DEMs		
	New OB Patients	Return OB Patients	Postpartum Patients	New OB Patients	Return OB Patients	Postpartum Patients
Mean	41.3	16.2	25.5	102.2	70.9	70.8
Median	40	15	30	90	60	60
Range	80	23	50	90	60	90
N	173	174	172	16	16	16

Note: Respondents were asked how many minutes were normally scheduled for each visit type.





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