



Healthforce
Center at UCSF

California's Midwives: How Scope of Practice Laws Impact Care

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ABOUT THIS SERIES

This paper is one of a series that examines the scope of practice of selected California health professions. The series looks at professions discussed by the California Future Health Workforce Commission and its subcommittees and workgroups during spring and summer of 2018. Each brief begins by describing the profession, including its legally permissible scope of work, and educational requirements. The brief then outlines how California's permissible scope of practice compares with that of other states and provides a summary of research studies on the impact of the profession's scope of practice on access to care, care quality, and costs. Finally, it summarizes demographic characteristics, practice settings, and geographic distribution.

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Introduction

California and the United States face shortages of qualified clinicians to provide prenatal, labor, and postpartum care, as well as women’s health services.¹⁻³ There has been no growth in the number of obstetricians nationwide since 1980 despite increases in the number of women of childbearing age and the number of births.⁴ To ensure that women’s health care needs are met, national organizations recommend that the midwifery workforce increase and that midwives work within a system of care that fosters collaboration among licensed, independent providers.⁵

Historically, midwifery has been a profession that focuses on care for mothers and infants during prenatal, labor, and postpartum periods. The word “midwife” means “with woman,” and the midwife model of care is, fundamentally, woman-centered. Midwifery recognizes pregnancy and childbearing as normal physiological processes and seeks to deliver care that empowers women to assume responsibility for their health and their families’ health. Increasingly, midwifery practice — especially that of nurse-midwives — has expanded its focus to include primary care and sexual and reproductive health.

Across the United States, midwives practice subject to each state’s licensing and regulatory environments. In California, midwives may practice either as nurse-midwives (NMs) or licensed midwives (LMs). These are officially two distinct professions with different education requirements, certifying organizations, enabling

statutes, regulatory bodies, licensing policies, and often different practice environments. Consequently, the two professions’ respective scopes of practice differ as well. In 2019 there were 386 LMs licensed in California,⁶ and in October 2019 there were 753 NMs in California.⁷ As seen in Table 1, the number of births in California attended by LMs and NMs between 2007 and 2017 rose, while the number attended by doctors of medicine declined. In 2017, LMs attended 0.6% of births, with 21% of these occurring in freestanding birth centers and 74% occurring in residences; in that year, NMs attended 10.5% of births in California, with more than 97% occurring in hospitals (Table 2).

Table 2. Birth Settings, by Practitioner, California, 2017

| | DOCTOR OF MEDICINE (MD) | DOCTOR OF OSTEOPATHY (DO) | NURSE-MIDWIFE (NM) | OTHER MIDWIFE |
|---------------------------|-------------------------|---------------------------|--------------------|----------------|
| In Hospital | 386,581 (99.98%) | 27,414 (100.00%) | 48,402 (97.76%) | 84 (2.89%) |
| Freestanding Birth Center | 0 | 0 | 781 (1.58%) | 618 (21.25%) |
| Residence | 44 (0.01%) | 0 | 310 (0.63%) | 2,157 (74.17%) |
| Other | 21 (0.01%) | 0 | 19 (0.04%) | 49 (1.69%) |
| Unknown | 0 | 0 | 0 | 0 |

Notes: *Other midwife* is the terminology the CDC uses for non-nurse midwives. There may be errors in the data associated with hospital birth attendance. California birth certificates also do not state the planned birth location.

Table 1. Number of Annual Births, by Practitioner, California, 2007–17

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Doctor of Medicine (MD) | 501,262 | 486,714 | 461,951 | 443,563 | 435,221 | 434,621 | 421,882 | 426,326 | 411,158 | 405,219 | 386,646 |
| Doctor of Osteopathy (DO) | 16,187 | 16,854 | 16,423 | 17,220 | 18,661 | 19,575 | 22,243 | 23,959 | 25,027 | 26,860 | 27,414 |
| Nurse-Midwife (NM) | 42,966 | 42,162 | 42,239 | 42,974 | 41,782 | 42,510 | 43,123 | 45,023 | 47,642 | 48,895 | 49,512 |
| Licensed Midwife (LM) | 929 | 1,372 | 1,447 | 1,645 | 1,907 | 2,168 | 2,396 | 2,657 | 2,849 | 2,821 | 2,908 |
| Other (e.g., paramedic) | 4,746 | 4,363 | 4,626 | 4,423 | 4,209 | 4,489 | 4,713 | 4,538 | 4,755 | 4,679 | 4,759 |
| Unknown or not stated | 285 | 270 | 288 | 331 | 313 | 349 | 312 | 332 | 302 | 332 | 394 |

Source (Tables 1 and 2): United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics, Division of Vital Statistics, *Nativity Public-Use Data 2007–2017*, on [CDC WONDER Online Database](#), October 2018.

Midwives are common providers for prenatal care and birth in many countries, including most European countries, Canada, and Australia.⁸ It has been reported that 50% to 75% of births are attended by midwives in other developed countries.^{9,10} Midwifery has been described as a healing or holistic model of care in comparison with the medical model of care that physicians practice. Direct comparisons between midwives and physicians can be challenging because the philosophies of these models of care are different. Nevertheless, a large body of research (discussed later in this paper) finds that midwife care results in comparable or improved health outcomes for low- and moderate-risk mothers and infants compared with physician care. Additionally, the literature suggests that midwives help improve access to care for underserved communities and can help achieve health care expenditure savings. The research also finds that restrictions on midwives' scope of practice may limit their supply and, consequently, the utilization of midwives.

This paper provides information on the different professional licensures, regulatory schemes, and scopes of practice for midwives in California and briefly reviews how midwifery regulations differ across other states. Additionally, the paper summarizes recent research on how these laws impact health care access, quality, productivity, and costs.

Overview of the Profession

There are two categories of licensees authorized to provide midwifery services in California: licensed midwives (LMs) and nurse-midwives (NMs). Licensure is the formal process that grants midwives the right to practice. Midwives may also attain certification from an organization, which indicates that they have the proper training and skills. Certification is required for NM applicants. In contrast, while the majority of LM licensees are certified, certification is not necessary for LM applicants; rather, licensure requirements are equivalent to and or exceed national certification

requirements.¹¹ Table 4 summarizes the key facets of LM and NM education and practice in California, which the following paragraphs describe in detail (see page 5).

An LM is a professional health care practitioner who offers primary care to healthy women and their normal unborn and newborn babies throughout normal pregnancy, labor, and birth, and the postpartum, neonatal, and inter-conceptional periods (for instance, family planning care).¹² LMs are “direct-entry” midwives, meaning that they receive their midwifery education through programs of study that are distinct from nursing. LMs provide comprehensive care within the childbearing cycle (including postpartum and newborn care). This includes (but is not limited to) performing physical exams, ordering and interpreting lab tests and ultrasounds, coordinating care with other providers, lactation consultation, providing health education and counseling, and serving as emergency first responders in the community setting. Although LMs may practice in hospitals, they usually practice in other settings such as birth centers, offices, clinics, and homes. California LMs are regulated by the California Board of Medicine. While “licensed midwife” is the official title for non-nurse midwives in California, other states may license them using different terminology. Other terms used for these professionals in licensure and colloquially include “direct-entry midwives” and “registered midwives” (see Table 3). Additionally, if they received certification from the North American Registry of Midwives (NARM), they may be referred to as “Certified Professional Midwives” (CPMs).

Table 3. Alternative or Equivalent Titles for Nurse-Midwives and Licensed Midwives

| PROFESSION TITLE AS REFERRED TO IN THIS REPORT | ALTERNATIVE/EQUIVALENT TITLE |
|---|--|
| Nurse-midwife | Certified Nurse-Midwife (CNM) |
| Licensed midwife | Direct-entry midwife, Certified Professional Midwife (CPM) |

Table 4. Overview of Nurse-Midwife and Licensed Midwife Regulations in California

| | NURSE-MIDWIFE (NM) | LICENSED MIDWIFE (LM) |
|--|--|--|
| Education | | |
| Minimum degree or education required for certification and/or licensure in California | Graduate degree (both BRN-approved NM programs in the state are master's programs) | Completion of approved education program in which they completed at least 20 new antepartum visits, 75 return antepartum visits, 20 labor management experiences, 20 deliveries, 40 postpartum visits, 20 newborn assessments, and 40 postpartum/family planning/gynecology visits and attended 20 births. ¹³ |
| Minimum education requirements for admission to midwifery education program | Hold an RN license; additional education requirements vary by program | High school diploma or equivalent. Prerequisites vary by program but generally include courses in statistics, microbiology, anatomy, and physiology and experiences such as childbirth education doula certification. Many LMs have bachelor's degrees in a variety of disciplines and have worked in other professions either related or not related to health care. |
| Education program accrediting organization | Programs are approved by BRN; optional national accreditation by the Accreditation Commission for Midwifery Education (ACME) | Programs are approved by Medical Board; optional national accreditation by the Midwifery Education Accreditation Council (MEAC). |
| Requirements prior to taking certification and/or licensing exam | Graduation from a midwifery education program accredited by ACME AND Verification by program director of completion of education program AND Verification of master's degree or higher | Graduation from a midwifery education program accredited by MEAC OR Completion of an equivalent state licensure program and evidence of current adult CPR and neonatal resuscitation certifications NARM currently offers an "Experienced Midwife" route of entry for applicants with extensive nonconventional training and experience; however, this will be discontinued December 31, 2019. ¹⁴ |
| Scope of Practice | | |
| Range of care provided | Primary health care services for women from adolescence beyond menopause, including: <ul style="list-style-type: none"> ▶ Preconception care ▶ Prenatal care, childbirth, postpartum and newborn care ▶ Gynecologic and family planning services ▶ Treatment of male partners for sexually transmitted infections ▶ Physical examinations ▶ Initial comprehensive assessment, diagnosis, and treatment of conditions ▶ Prescribing medications including controlled substances and contraceptives ▶ Ordering and interpreting laboratory and diagnostic tests ▶ Ordering the use of medical devices ▶ Health promotion, disease prevention, and individualized wellness education and counseling | Primary health care services, education, counseling, and support to women, babies, and their families during pregnancy, birth, and postpartum periods. Services also include: <ul style="list-style-type: none"> ▶ Initial and ongoing comprehensive assessment, diagnosis, and treatment of conditions requiring consultation with and/or referral to physicians or other health care professionals when the mother's or fetus's condition warrants ▶ Physical examinations ▶ Administration of medications ▶ Ordering and interpreting laboratory and diagnostic tests ▶ Use of medical devices ▶ Health promotion, disease prevention, and individualized wellness education and counseling |
| Practice settings | Primarily hospitals; also can practice in homes, birth centers, and offices | Primarily homes and birth centers; also can practice in hospitals and offices |

Notes: NMs are already licensed nurses and only need certification. LMs must attain a license and do not need certification from a national organization.

Source: American College of Nurse-Midwives, *Comparison on Certified Nurse-Midwives, Certified Midwives, Certified Professional Midwives Clarifying the Distinctions Among Professional Midwifery Credentials in the U.S.*, n.d., www.midwife.org (PDF).

Throughout this report, California non-nurse midwives will be referred to as “licensed midwives.” “Direct-entry midwives” will be used to refer to non-nurse midwives nationally.

An NM is an advanced practice registered nurse (APRN) who is a graduate of a midwifery program approved by the California Board of Registered Nursing (BRN) and who holds a certificate issued by the BRN.¹³ Like LMs, NMs conduct independent, comprehensive management of women’s health care in various settings with a specific focus on sexual and reproductive health care, including pregnancy, childbirth, postpartum, care of

newborns, family planning, and women’s gynecological needs. In addition, NMs are prepared to provide a broad array of health services, including taking health histories and performing physical exams; diagnosing and treating common health problems, including mild and/or stable presentations of chronic conditions; providing immunizations; performing procedures; ordering and interpreting lab tests and ultrasounds; coordinating patient care with others across multiple providers; providing health education and counseling; and prescribing and managing medications and other therapies. NMs most often deliver babies in hospitals and practice in offices with obstetrician-gynecologists. NMs are regulated by the BRN and may also be known as “Certified Nurse-Midwives” (CNMs) if nationally certified by the American Midwifery Certification Board (see Table 5).

Table 5. Overview of National Nurse-Midwife and Licensed Midwife Licensing, Regulation, and Certification in California

| | NURSE-MIDWIFE (NM) | LICENSED MIDWIFE (LM) |
|--|--|---|
| National Licensing and Regulation | | |
| Legal status | All 50 states plus DC as midwives, nurse-midwives, advanced practice registered nurses, or nurse practitioners | Licensure available in 33 states Can practice legally but no licensure available in one state Implementation in progress for licensure process in one state |
| Licensure agency | Boards of midwifery, medicine, nursing, nurse-midwifery, or departments of health | Boards of midwifery, medicine, nursing, complementary health care providers or departments of health or departments of professional licensure |
| Prescriptive authority | All US jurisdictions | No prescriptive authority, but may obtain and administer prophylactic and emergency medications in select states |
| Third party reimbursement | Most private insurance; Medicaid coverage mandated in all states; Medicare, TRICARE | Coverage varies across states: private insurance mandated in six states; 13 states’ Medicaid plans include CPMs |
| National Professional Certification | | |
| Credential | Certified Nurse-Midwife (CNM) | Certified Professional Midwife (CPM) |
| Certifying organization | American Midwifery Certification Board (AMCB) | North American Registry of Midwives (NARM) |
| Recertification requirement | Every five years | Every three years |
| Other Associations | | |
| Professional associations | American College of Nurse-Midwives (ACNM) | Midwives Alliance of North America (MANA), National Association of Certified Professional Midwives (NACPM) |
| Midwifery organization | International Center for Traditional Childbearing (ICTC) | ICTC |

National certification as a CNM is one of two ways that RNs can become nurse-midwives in California; in other words, not all nurse-midwives are CNMs. Therefore, throughout this report, all NMs will be referred to as such, unless discussion or cited research specifically focuses on CNMs.

How Scope of Practice Is Modified in California

Scope of practice laws establish the legal framework that controls the delivery of health and medical services. The reach of these laws encompasses the full range of licensed health professionals — ranging from physicians and physical therapists to podiatrists and dental hygienists. Scope of practice laws govern which services each category of licensed health professional is allowed to provide and the settings in which they may do so.

With few exceptions, scope of practice statutes are set by state governments. State legislatures consider and pass the statutes that govern health care practices. Regulatory agencies, such as medical and other health professions boards, implement the statutes through the writing and enforcement of rules and regulations.

Such laws and regulations vary widely from state to state. Some states allow individual professions broad latitude in the services they may provide, while other states employ strict limits. The nature of the limitations can either facilitate or hinder patients' ability to see a particular type of provider, which in turn influences health care costs, access, and quality.

Midwife Education

Licensed Midwives

In California, potential LMs can meet the educational requirements to apply for and receive their license to practice midwifery in several ways. Potential LMs can complete a three-year program at a medical board–approved midwifery school, attain certification by a board-approved organization, pass the National Association of Registered Midwives (NARM) comprehensive exam, and then apply for licensure. Licensed midwifery curriculum includes both academic and clinical preparation and addresses providing care in a variety of settings, including homes, freestanding birth centers, and clinics. (See Appendix A, The Landscape of Midwifery in California.) Although LMs are not prohibited from training and practicing in hospitals, that is not the focus of their expertise, and it is rare for LMs to practice and train in hospitals.¹⁶ In addition to relevant scientific and medical knowledge in topics including genetics, anatomy, physiology, prenatal care, labor and delivery, postpartum care, neonatal care, and gynecology, the curriculum also covers topics such as psychosocial, emotional, and cultural aspects of maternal and child care; human development; human sexuality; breastfeeding; family planning; relevant behavioral and social science topics; cultural diversity; preventive health; and community health. LM students also learn professional development skills and how to navigate the legal, social, and ethical aspects of midwifery.¹⁷

NARM also currently provides an “Experienced Midwife” route of entry for CPM certification for applicants with “extensive non-conventional training and experience” who have practiced for at least five years and attended at least 75 out-of-hospital births in the US or Canada within the previous 10 years. These applicants conduct a Portfolio Evaluation Process (PEP) and are individually evaluated to determine whether their training and experience are equivalent to NARM certification standards.¹⁸ However, this route of entry will be discontinued December 31, 2019.¹⁹

To be licensed in California, a candidate must graduate from an education program approved by the Medical Board of California (MBC) and subsequently pass an exam adopted by the MBC. The examination currently accepted by the MBC is offered by NARM. NARM requires that candidates submit a portfolio of their education and clinical experience before taking the examination; after passage of the examination they receive the nationally recognized title of “Certified Professional Midwife” (CPM).²⁰ At this time, potential LMs may apply to the Medical Board of California for a midwifery license.²¹ They must be recertified by NARM every three years.²²

Alternatively, potential LMs who completed their midwifery education or previously worked as midwives outside California can attain licensure in California without having to complete an education program again. To do so, they must provide documentation that they have had substantial midwifery clinical experience and education prior to coming to California, take a challenge exam at a board-approved institution, and pass the NARM exam.²³

Once licensed, LMs are required to complete 36 hours of continuing education every two years, contribute data on annual outcomes (Licensed Midwife Annual Report), and renew their licenses every two years.

Nurse-Midwives

Nurse-midwifery certification in California is conferred on licensed registered nurses by the Board of Registered Nursing (BRN).²⁴ This certification can be obtained by successful completion of a nurse-midwife education program that meets state BRN standards or by certification through a national organization whose standards are equivalent to those of the BRN. Although California does not require a master’s degree for NM certification, both of the state’s approved NM education programs are master’s degree programs. The two programs are situated within schools of nursing at the University of California, San Francisco and California State University, Fullerton.²⁵ San Diego State University previously had an approved NM program,

but the program is currently suspended and graduated its last class at the end of the 2018–2019 school year. Nurse-midwifery curriculum covers a common range of topics including physiology, various body systems, diagnosis and treatment of illnesses and conditions, and relevant clinical knowledge for caring for women and newborns in a variety of settings (hospitals, homes, and alternative birth centers), as well as the sociocultural topics mentioned earlier.²⁶

Alternatively, NMs with out-of-state education and/or licensure can qualify for licensure in California by proving that they have completed an equivalent midwifery program or specific courses approved by the BRN. The District of Columbia and all but two states (Pennsylvania and California) require completion of a master’s, postgraduate, or doctorate degree from an accredited NM program to be licensed. Candidates can also provide proof of certification as an NM by a national or state organization whose standards are satisfactory to the board.²⁷

Nurse-midwives in California may choose to be certified by the American Midwifery Certification Board, and 99% of the state’s nurse-midwives report that they have this certification.²⁸ All but four states (California, Kansas, New York, and Pennsylvania) require certification by the American Midwifery Certification Board for NM licensure.²⁹ The American Midwifery Certification Board also allows non-nurses to take the board’s certifying examination, conferring the nationally recognized certification of “Certified Midwife” (CM). However, CMs are not eligible to be licensed by the Board of Registered Nursing because they are not registered nurses, and the MBC does not recognize this examination for LM licensure.

Practice Oversight of Midwives in California

The practice and oversight of LMs versus NMs differs in California — largely because the professions are regulated by two different boards. LMs are regulated by the Medical Board of California, while NMs are regulated by the Board of Registered Nursing. California LMs are authorized to practice without any formal physician supervision or collaboration requirement, but NMs must practice with physician oversight.

Licensed Midwives

In 1993, California passed the Licensed Midwifery Practice Act (LMPA), which serves as the enabling statute for LMs.³⁰ In 2013, the statute was amended to give LMs the freedom to practice without physician supervision.³¹ Before the amendment, physician supervision was difficult to obtain because of liability concerns. Therefore, LMs have largely practiced without physician supervision since 1993. Nevertheless, some LMs do practice in collaboration with physicians. LMs are authorized to provide care in private offices, physician offices, clinics, client homes, maternity homes, birth centers, and hospitals, although only 3% of LM-attended births occur in hospitals.³² LMs are authorized to attend cases of normal pregnancy and childbirth and to provide prenatal, intrapartum, and postpartum care, including family planning care and immediate care for the newborn.³³ Additionally, LM care includes preventative measures and detection of complications in the woman and child, as well as protocols for variations and deviations from normal pregnancy.³⁴ The LMPA defines normal pregnancy as the absence of “any preexisting maternal disease or condition likely to affect the pregnancy” or “significant disease arising from the pregnancy.” If a client’s condition deviates from normal, an LM must immediately refer or transfer the client to a physician and surgeon trained in obstetrics but may continue collaborative care with the physician or surgeon after doing so. If the condition is resolved or the physician determines that the presented risk factors are unlikely to significantly affect the course of pregnancy and childbirth,

the LM may resume the client’s primary, pregnancy, childbirth, or postpartum care. If the condition is not resolved, LMs may provide collaborative care with the physician, be present during childbirth, and provide appropriate postpartum care; however, they cannot resume primary care.³⁵

LMs are authorized to directly obtain supplies and devices, obtain and administer prophylactic and emergency drugs and diagnostic tests, order testing, and receive reports necessary to and consistent with their scope of practice.³⁶ They may also perform procedures such as amniotomies, episiotomies, resuscitation of the newborn, and repair of lacerations.³⁷ Additionally, LMs may provide emergency care in the absence of medical assistance.³⁸ LM practice does not include assisting childbirth by any artificial, forcible, or mechanical means — such as use of forceps — and LMs are not authorized to practice medicine or perform surgery.³⁹

Nurse-Midwives

In 1974, California established the state’s enabling statute for NMs by passing Article 2.5 of the state’s Nurse Practice Act. NMs practice under the supervision of a licensed physician and surgeon; the state’s Business and Professions Code (BPC) specifies that supervision does not require the physical presence of a physician.⁴⁰ In 1985, the BRN repealed the requirements for (1) a written agreement with a supervising physician to identify the respective responsibilities of the physician and NM and (2) a communication arrangement for hospital referrals. However, the requirement of physician oversight has remained even though LMs no longer are required to have physician supervision.

Under physician oversight, NMs are authorized to attend cases of normal childbirth and provide prenatal, intrapartum, and postpartum care, which includes family planning and newborn care. This includes preventative measures and detecting abnormal conditions in the mother or child.⁴¹ When indicators of abnormal pregnancy appear, the NM will obtain physician assistance and/or consultation. The NM may provide emergency care until physician assistance can be

obtained.⁴² NMs may obtain a furnishing number from the BRN that authorizes them to provide medications and devices to patients in accordance with standardized procedures outlined in the BPC, Nurse Practice Act, and California Code of Regulation (C.C.R.); this authorization includes Schedule II medications.⁴³

Similar to LMs, NMs may perform procedures such as amniotomies, episiotomies, resuscitation of newborns, and repair of lacerations. NMs may also administer intravenous fluids, analgesics, and local anesthetics. But unlike LMs, NMs may perform certain procedures in accordance with the provisions of the BPC. NMs may perform abortions by medication and aspiration techniques in the first trimester of pregnancy if they have completed required training. Other practices and procedures may be conducted when deemed appropriate by the NM and supervising physician.⁴⁴ NM practice does not include assisting childbirth by artificial, mechanical, or forcible means, which is considered to include vacuum or forceps delivery.

Overview of Regulations in Other States

The licensure, oversight, and regulation of midwives varies across states, with some states having a single board and set of regulations overseeing both direct-entry midwives and NMs, and other states having multiple designations and regulatory structures. Two important areas of variation are in whether and how direct-entry midwives are licensed, and whether physician oversight is required for midwife practice.

Direct-Entry Midwives

Across the US, direct-entry midwives may practice legally in 34 states. However, only 32 states allow direct-entry midwives to achieve licensure. See Table 6 for a summary of the licensure status of direct-entry midwives across states.

Table 6. Direct-Entry Midwives Licensure Across States

| | STATES |
|--|---|
| Licensure available | Alabama, Alaska, Arizona, Arkansas, California, Colorado, Delaware, Florida, Hawaii, Idaho, Indiana, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Montana, New Hampshire, New Jersey, New Mexico, New York, Oregon, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, Wisconsin, Wyoming (32) |
| Passed legislation allowing licensure, implementation in progress | Maine, South Dakota (2) |
| Can practice legally, but licensure not available (regulated by statute) | Missouri (1) |
| Not regulated by the state, no licensure available | Connecticut, Georgia, Kansas, Mississippi, Nebraska, Nevada, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, West Virginia (12) |
| No licensure available, but legislative efforts in current or recent legislative sessions | Illinois, Iowa, Massachusetts, DC (3 + DC) |

Source: Author review of individual state midwifery and Board of Medicine websites.

Physician Oversight of Nurse-Midwives

In 2011, the American College of Obstetricians and Gynecologists and the American College of Nurse-Midwives released a joint statement advocating for a health care system in which obstetrician/gynecologists (ob/gyns) and nurse-midwives collaborate to optimize women’s health care. The statement recognizes that nurse-midwives are “experts in their respective fields of practice and are educated, trained, and licensed independent clinicians.” More than half of all states allow nurse-midwives to practice without physician oversight (Table 7), and California is the only western state in which NMs must practice under physician supervision.

Recent Changes in Other States

Licensure for direct-entry midwives is available in more than 30 states. Since 2010, 10 states — Alabama (2017), Hawaii (2019), Indiana (2013), Kentucky (2019), Maryland (2015), Michigan (2017), South Dakota (2017), Maine (2016), Oregon (2015), and Wyoming (2010) — have passed and signed into law legislation allowing for the licensure of direct-entry midwives (LMs and CPMs). These legislative changes establish or direct existing midwifery boards to award licenses to eligible applicants and set terms for renewal. Occupational

licensing advocates frequently cite maintaining patient safety as a central objective of expanded practice authority. Indeed, recent research reported that state laws passed in the early 20th century requiring midwives to be licensed were associated with reductions in maternal and infant mortality.⁴⁵ However, direct-entry midwifery activists have also advocated for licensing as a means of establishing accountability and legitimacy of the profession. Licensure facilitates an environment in which eligible midwives can practice with full authority and can invest in their practice by hiring employees or taking on apprentices.

Since 2010, 11 states have granted NMs independent practice authority, allowing them to practice and prescribe without physician oversight. In eight states — Illinois (2017), Maryland (2014), Minnesota (2014), Nevada (2013), North Dakota (2011), Rhode Island (2013), Vermont (2011), and West Virginia (2016) — these changes were part of the broader effort to grant advanced practice registered nurses (APRNs) independent practice authority, consistent with the goals of the *Consensus Model for APRN Regulation* of the National Council of State Boards of Nursing (NCSBN) and the recommendations of the Institute of Medicine.⁴⁶ APRNs include nurse practitioners, clinical nurse specialists, and nurse anesthetists. In the other three states — Massachusetts (2014), South Dakota (2017), and Utah (2012) — only nurse-midwives received independent

Table 7. Selected Features of State Nurse-Midwife Scope of Practice

| | STATES |
|---|---|
| Full independent practice | Alaska, Arizona, Colorado, Connecticut, Hawaii, Idaho, Illinois, Iowa, Maine, Maryland, Massachusetts, Minnesota, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Oregon, Rhode Island, South Dakota, Utah, Vermont, Washington, West Virginia, Wyoming, DC (27 + DC) |
| Physician supervision required | California, Florida, Nebraska, North Carolina (4) |
| Collaborative agreement with physician required | Alabama, Arkansas, Delaware, Indiana, Kansas, Louisiana, Mississippi, Missouri, Ohio, Pennsylvania, South Carolina, Wisconsin (12) |
| Collaborative agreement with physician required for prescriptive authority | Kentucky, Michigan, Oklahoma, Tennessee, Texas (5) |
| Jointly regulated by both the Board of Medicine and Board of Nursing | Georgia, Virginia (2) |

Source: Author review of individual state midwifery and Board of Medicine websites.

practice authority. The Massachusetts Board of Nursing revised its regulations in 2014 to specify that NMs do not require a supervising physician or written guidelines for prescriptive practice.⁴⁷ In South Dakota, NMs may practice independently once they have completed 1,040 licensed practice hours under an approved collaboration agreement with an experienced physician, nurse practitioner, or NM.⁴⁸ In Utah, the Nurse Midwife Practice Act Rules were amended to state that the scope and standards of practice for NMs follow those published by the American College of Nurse-Midwives.⁴⁹ These changes broadly reflect the recommendations outlined in a 2014 policy paper from the US Federal Trade Commission (FTC), *Policy Perspectives: Competition and the Regulation of Advanced Practice Nurses*, which states, “APRN scope of practice limitations should be narrowly tailored to address well-founded health and safety concerns, and should not be more restrictive than patient protection requires. . . . Expanded APRN scope of practice is good for competition and American consumers.”⁵⁰

Examining the Evidence for Practice Expansion: A Summary of Research

A body of research has examined the relationship between scope of practice for midwives (both nurse and direct-entry midwives) and access to care, quality of care, and health care costs. The research cited in this report primarily comes from peer-reviewed scientific and medical journals, and most of this research is on nurse-midwives. Emphasis was placed on including articles that employed rigorous study designs, such as randomized controlled trials and natural experiments. In addition, although a large body of research links midwifery care to better birth outcomes, including cross-national studies, the research discussed here is derived primarily from studies conducted in the United States.^{51,52}

Some discretion should be exercised when reviewing research on midwifery care because of limitations affecting the research process that are especially

salient to research on midwives. First, research findings regarding midwife care are confounded by selection bias. Selection bias occurs when individuals or groups studied are selected in a nonrandom way. For instance, a study may use insurance claims data to compare birth outcomes by type of provider. However, a woman’s choice of health care provider is determined by health insurance coverage, personal and cultural background, location, wealth, and health characteristics, all of which also may be associated with the risk of a bad birth outcome. Many data sets do not include detailed information about these variables, and thus a finding that midwife-attended births result in better outcomes may reflect the underlying characteristics of mothers as much as the practice of midwifery.

The environment in which midwives work also can facilitate or impede midwife practice and confound research results. For instance, different health insurance coverage environments may result in different providers being available to women. Previous research has found that the biggest predictor of the distribution and practice activities of NMs is the degree to which state policy restricts or facilitates NM practice.⁵³ One study found that state laws mandating insurance coverage of midwifery services were associated with an 18% rise in midwife-attended births. In contrast, any willing provider laws, which prohibit insurers from discriminating against medical provider classes or individual providers by excluding them from their networks, were not found to be related to midwife usage.⁵⁴ Additionally, hospitals that employ large numbers of midwives may be different from hospitals that do not.⁵⁵ This difference could drive differences in how the hospitals provide maternity care. Moreover, rural and other underserved communities may face a shortage of obstetricians, with midwives the only local care providers. These selection bias issues complicate researchers’ ability to control for differences in demographics and socioeconomic status.

Another challenge to research on midwifery care is accurate measurement of which births are attended by midwives. Research has found that midwife birth attendance reporting practices are inconsistent and

can result in underreporting.⁵⁶ The meaning of birth attendance may be vague, particularly if both midwives and physicians were actively attending to the patient during labor and delivery. Additionally, midwives who work in collaborative practice agreements with physicians may bill under the physician's provider code; this practice could result in underreporting. Moreover, understanding the impact of midwives requires more than just understanding their presence in birth attendance, as they also provide prenatal care; however, prenatal care provider type is not a data field on the US Standard Certificate of Live Birth. Furthermore, most published research on midwifery outcomes is specific to nurse-midwives, not direct-entry midwives.

Access to Care

Midwives are a growing component of the maternity care workforce in California and the US and thus play an important role in improving access to care. Midwives can take on low- to moderate-risk pregnancy cases, enabling ob/gyns to focus on higher-risk patients. Previous research has found some evidence of complementary behavior between midwives and ob/gyns. While the majority of visits to NMs were for maternity care, the majority of visits to ob/gyns were for gynecologic and or family planning.⁵⁷ In addition, approximately half of California's NMs also are licensed as nurse practitioners, which prepares them to provide a full range of services to women, including primary care.⁵⁸

Recent research has found that states that required physician oversight of midwives between 2012 and 2016 had a lower concentration of midwives as compared with states that allowed autonomous practice; the research also found that counties in states with restrictive practice were less likely to have a midwife than counties in autonomous-practice states.⁵⁹ Similarly, an analysis of data from 2009 through 2011 found both a greater concentration of NMs and higher percentage of births attended by NMs in states with more favorable regulatory environments.⁶⁰ One study reported that autonomous practice regulations for NMs were associated with increased midwife-attended

births in rural hospitals compared with states requiring physician oversight.⁶¹

Midwives can play particularly important roles in expanding access to care in low-income communities and for underrepresented minorities. Compared with physicians, a greater proportion of NMs practice in rural areas and Health Professional Shortage Areas (HPSAs).⁶² Community health centers are twice as likely to employ at least one nurse practitioner (NP), physician's assistant (PA), or NM compared with other provider settings. Likewise, one-third of community health center visits are to an NP, PA, or NM.⁶³ Midwives are also more likely to care for women who are insured by Medicaid or from underserved populations. In a 2017 survey of California NPs and NMs, 72.6% of NMs responded "always," "almost always," or "to a considerable degree" when asked the extent to which they worked with underserved populations, and about one-third responded that between 76% and 99% of their patients were Medicaid beneficiaries.⁶⁴ This fact is crucial, given that Medi-Cal funds more than half of the state's births. One study found that women whose births were covered by Medicaid in 2014 were more likely to be at hospitals with higher proportions of midwife-attended births, while women with private insurance were more likely to give births at hospitals with no midwife-attended births.⁶⁵ Similarly, the 2018 *Listening to Mothers in California* survey found that women with Medi-Cal coverage were twice as likely as women with private insurance to report not having a choice of prenatal care provider, as were Latina and Black women as compared with White women. Women who reported not having a choice of prenatal care provider were less likely to report having an obstetrician and more likely to report having midwifery care.⁶⁶

Although 99% of California births take place in hospitals, it is important to note that midwives, and particularly licensed midwives, are more likely to attend births in out-of-hospital settings.⁶⁷ The *Listening to Mothers in California* survey conducted in 2017 found that 40% of respondents were interested in a future birth center birth; Black women expressed the greatest interest,

with a combined 48% saying they would definitely choose a birth center or consider it.⁶⁸ The preference of Black women for birth center care is aligned with the rich history of “granny midwives,” who attended nearly all births to Black mothers through the mid-1900s.⁶⁹ There is growing recognition that midwives can play a central role in addressing disparities in birth outcomes. For example, the CenteringPregnancy model of care, which provides midwifery-led prenatal care to groups of women who are near the same due date, has demonstrated consistently positive outcomes in engagement with prenatal care, satisfaction with care, breastfeeding rates, and infant weight gain.⁷⁰ Similarly, the Strong Start study found that the midwife-led birth center model of prenatal care was associated with improved health outcomes for Black mothers and infants.⁷¹ Midwives will likely play a crucial role in addressing continued growth in demand for nonhospital births and racially sensitive care.

Quality of Care

Birth Procedures and Interventions

Midwifery care is intended for mothers with low-risk, normal pregnancies; midwives refer mothers who develop complications during pregnancy to ob/gyns and transfer patients to ob/gyn care if complications arise during birth. Thus, it is not surprising that many studies report that women receiving midwifery care experience fewer interventions and procedures in labor and delivery. In addition, a large body of research has found that birth outcomes are similar between midwives and physicians. This has been found for both LMs, who practice primarily in nonhospital settings, and NMs, who practice primarily within hospitals.

Research on interventions and procedures during labor and delivery is complicated by differences in the patient populations served by midwives and physicians. Moreover, settings in which midwives play a large role may be systematically different from physician-dominated settings. Nonetheless, there is some evidence of differences in procedure use between NMs and physicians, even when controlling for the setting of birth. For example, a 2012 systematic review of

research comparing labor and delivery care outcomes between NMs and physicians reported lower rates of induction for NMs.⁷² However, a 2016 Cochrane review of studies conducted in the United Kingdom, Ireland, and former Commonwealth countries compared health outcomes of midwife-led continuity models (in which the midwife is the lead provider from the prenatal period through the postpartum period) with other models of care and reported no statistically significant differences between groups in labor induction rates.⁷³ Similarly, a study of births taking place in New York in 2014 found that hospital-level percentage of midwife-attended births (both NM and direct-entry midwives) was not associated with reduced odds of labor induction.⁷⁴ Two systematic reviews (one focusing on American NMs and the other on midwives in the UK, Ireland, and former Commonwealth countries) reported that midwife care was significantly associated with lower or comparable rates of other procedures, such as episiotomies, amniotomies, operative vaginal deliveries (for both forceps and vacuum), labor analgesia use, and epidural usage.^{75,76} It is important to note that these studies’ findings do not capture whether women who were receiving midwife care had to be transferred to a physician due to their conditions. Moreover, these studies generally focus on hospital-based births and thus apply primarily to NMs; inductions and other related procedures are not in the scope of practice of direct-entry midwives. Thus, it is not surprising that research has found that planned home births attended by direct-entry midwives are associated with lower rates of medical intervention.⁷⁷

Cesarean births are of particular interest due to the rapid increase in their use since the 1990s, which was not accompanied by decreases in maternal or neonatal morbidity or mortality. There is reason to believe that increased use of cesarean birth has been driven mainly by differences in physician practice patterns and concerns about malpractice liability rather than increases in patient risk.^{78–80} Moreover, maternal elective cesarean sections account for less than 5% of all cesarean births. In 2014, the American College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine released a joint consensus statement voicing concerns that cesarean births are overused

and called for efforts to reduce the rates of cesarean births through other management approaches such as operative vaginal delivery, manual rotation, external cephalic version, pregnancy weight management, and providing continuous support for women during labor and delivery. These are all types of care that fall under NMs' training and expertise, and some of these processes fall under LMs' scope of practice.⁸¹⁻⁸⁶

There is evidence suggesting that women receiving care from midwives are less likely to have cesarean births and more likely to experience spontaneous vaginal delivery.⁸⁷⁻⁸⁹ Of course, cesarean birth rates may be influenced by women's care preferences and risks. Women who have or perceive themselves to have high-risk pregnancies are more likely to choose a physician. Thus, the difference between midwives' and physicians' cesarean birth rates may be partly explained by differences in patients. Systematic reviews have reported that high-quality research studies that control for patient characteristics find similar cesarean birth rates between midwives and physicians.^{90,91} Other research has considered the potential effect on the practice culture of organizations that have relatively high shares of midwife-attended births. For instance, the aforementioned study of New York hospitals with greater percentages of midwife-attended births reported significantly lower odds of cesarean sections.⁹² Similarly, states with higher levels of integration of midwife care into health care delivery systems have significantly lower rates of cesarean birth and higher rates of vaginal birth after cesarean birth for multiparous mothers.⁹³ However, research has also found that state laws mandating insurance coverage of midwifery services passed prior to and during 1989 to 1999 did not lead to decreased C-section rates in births during that period.⁹⁴

Maternal-Infant Morbidity and Mortality

Several systematic reviews of the research literature have found that the health outcomes of NM-led care are comparable to physician-led care.⁹⁵⁻⁹⁷ Research studies report that newborn health outcomes such as incidence of preterm birth, birth weight, Apgar scores, and NICU admissions are comparable or better for midwifery care as compared with physician care.⁹⁸⁻¹⁰⁰

Research regarding differences in morbidity and mortality suggest that midwife-led and physician-led care result in similar morbidity and mortality.¹⁰¹ Similarly, a study of planned home births attended by direct-entry midwives in North America reported intrapartum and neonatal mortality rates similar to low-risk hospital births.¹⁰²

The relationship between birth outcomes and the integration of midwives into perinatal care also has been examined. One study found that state insurance laws mandating coverage of midwife services were associated with an increase in midwife-attended births of 18 percentage points, a statistically significant decline in neonatal deaths, and no changes in maternal mortality.¹⁰³ A study examining the relationship between the hospital-level percentage of midwife-attended births and birth outcomes in New York State found that the percentage of midwife-attended births was not associated with any difference in the odds of severe maternal morbidity.¹⁰⁴ A more recent study evaluating the relationship between states' integration of midwifery care into maternal health care delivery systems found that higher integration was strongly correlated with lower rates of neonatal mortality and race-specific neonatal mortality for Black mothers.¹⁰⁵ That same study also reported a significant relationship between midwife integration and lower rates of preterm birth and low birth weight. Additionally, the Strong Start study found that, compared with group prenatal care and maternity home models, women receiving prenatal under the midwife-led birth center model experienced lower rates of gestational diabetes and preeclampsia and were less likely to give birth to preterm infants and infants with low birth weights.¹⁰⁶

Two studies have examined whether there is a relationship between state scope of practice regulations for NMs and various outcomes. One study found no statistically significant differences in average birth weights in states with full practice authority for NMs compared with states with physician oversight requirements and also reported no differences in the probabilities of low and very low birth weights in medically underserved areas.¹⁰⁷ This study also did not find significant differences between women in states with different

midwifery scope of practice environments for maternal health behaviors, such as tobacco use, alcohol use, first trimester prenatal care, and adequate weight gain during pregnancy. However, another study found that women in states with full practice authority for NMs had significantly lower odds of giving birth to babies with low birth weights compared with women in states without NM autonomy.¹⁰⁸

Breastfeeding

Several studies have examined whether midwifery care supports increased breastfeeding rates among new mothers; the research to date is inconclusive. A 2012 systematic review found that women who received care from NMs had higher rates of breastfeeding than those cared for by physicians;¹⁰⁹ however, an international review found no differences in breastfeeding initiation between women who received care from midwives and women who received care from other providers.¹¹⁰ A recent study evaluating midwifery care integration with a state's health care delivery system found that higher integration index measures were associated with significantly higher rates of breastfeeding.¹¹¹

Patient Experience and Satisfaction

Several studies have found that midwifery care is associated with improved patient-provider communication and decreased likelihood of patient mistreatment and that women may prefer midwifery care. Such findings can translate into improved patient experience and satisfaction, which may be especially beneficial to women from marginalized groups. A systematic review citing studies in the UK, Ireland, Australia, New Zealand, and Canada found evidence suggesting greater satisfaction during childbirth with midwife-led care compared with other models of care, including maternal satisfaction with information, advice, explanation, delivery setting, preparation for birth and labor, and pain management.¹¹² Similarly, a US-based study found that, compared with ob/gyn visits, NM visits included longer face-to-face visit time and more client education or counseling.¹¹³ Another US study found that women receiving midwifery care were less likely to report that they refrained from asking their

provider questions because their preference for care differed from the provider's recommendation, that the provider used difficult-to-understand medical jargon, or that the women were not encouraged to discuss all their concerns.¹¹⁴

Women may prefer midwifery care or be open to considering it because of its holistically supportive model; mothers' choices of care providers may confound efforts to determine whether midwives communicate more effectively than physicians. A tenet of patient-centered decision making, which has been linked to improved health outcomes, is that patients should be able to select a provider who they perceive will respect their preferences.¹¹⁵ This is of particular importance for marginalized populations; the 2016 *Listening to Mothers in California* survey found that Medi-Cal beneficiaries, women of color (especially Black and Latina women), and women who were not primary English speakers were more likely to report perceived unfair treatment during childbirth — for instance, through harsh language and rough handling, feeling pressured to have birth interventions, not feeling encouraged to make their own decisions about how their birth would progress, not feeling supported during birth, or not feeling that hospital staff communicated well.¹¹⁶ The survey found that a majority of women surveyed would either definitely want a midwife (17%) or would consider a midwife (37%) for their next pregnancy — only 9% had a midwife for their previous birth. When this measure was examined by race and ethnicity, Black women were found to have the greatest contrast between actual and desired care, with 66% interested in a midwife compared with only 6% who had had one (11 times as many were interested). Another large study concluded that protective factors against mistreatment included having a midwife as the primary prenatal provider and giving birth at home or in a freestanding birth center. Being threatened by care providers or having treatment withheld or forced was twice as likely to occur in hospital settings compared to community settings.¹¹⁷

Productivity and Cost of Care

As discussed earlier, midwifery care is associated with fewer (unnecessary) procedures during birth, which could contribute to lower health care costs. For example, calculations based on Medical Expenditure Panel Survey data found that the costs of births at delivery totaled \$39 billion in 2013, with the largest cost driver being whether a birth was vaginal or cesarean section.¹¹⁸ Additionally, the evaluation of the Department of Health and Human Services' Strong Start for Mothers and Newborns initiative found that midwife-led care is associated with lower health care costs. The five-year study compared the health outcomes and costs of women Medicaid beneficiaries who received prenatal care from maternity care homes, group prenatal care, or birth centers (midwife-led care) with other Medicaid beneficiaries who had similar characteristics. The birth center model was associated with lower average costs of \$2,010 per mother-infant pair. The birth center model was also associated with fewer infant emergency department visits and hospitalizations, which may have resulted in additional cost savings through better health outcomes.¹¹⁹

The supervision of nurse-midwives can add costs to the health care system. Although the Medical Board of California has given LMs independent practice authority, NMs continue to be required to have physician oversight (despite having equivalent or more training). This restriction on NM practice may affect health care costs in several ways, based on examples and evidence for other APRNs. First, scope of practice regulations limit the supply of midwives; when supply is lower than demand, prices will tend to be higher.¹²⁰⁻¹²² In addition, women with low-risk pregnancies who might prefer a NM may see an ob/gyn instead, which may be costlier. The Bureau of Labor Statistics reports that the average annual earnings for NMs in California is \$139,990,¹²³ while the average for ob/gyns is \$216,800.¹²⁴

Moreover, the time physicians spend supervising NMs also may increase health care costs. Physician compensation is often based on personal productivity, and time spent supervising NMs is time that the physician

is not spending seeing the physician's own patients. Physicians thus often expect payment to compensate for their supervisory work; a recent survey of APRNs found that the median fee paid to physicians to maintain a collaboration agreement was \$500 per month.¹²⁵ This supervision cost is consequently passed onto patients in the form of higher health care prices.¹²⁶

Another factor linking physician oversight requirements for NMs with higher costs is malpractice insurance. Obstetrics is one of the medical specialties with the greatest number of malpractice claims and indemnity payments.¹²⁷ When physicians supervise an NM, they also have liability for any malpractice claims against the NM. Consequently, ob/gyns may try to minimize litigation risk and overhead costs by avoiding collaboration with NMs, because the physicians do not want to assume the liability of NMs under the physicians' supervision. This avoidance could reduce the supply of NMs and further raise health care costs. Research on nurse practitioner regulations has found that removal of scope of practice restrictions between 1999 and 2012 decreased the number of malpractice payments made by physicians by as much as 31%.¹²⁸ In theory, independent practice authority for NMs could also lead to substantial decreases in malpractice expenses for physicians and thus for the health care system.

Lower Cost of Care

Under the Affordable Care Act, pregnancy coverage is an essential health benefit, but midwifery care for pregnancy is not necessarily covered by all private insurance plans. However, federal regulations require that Medicaid plans include coverage of NM services and freestanding birth centers.¹²⁹ Any midwife — LM or NM — who works in a freestanding birth center can bill for professional services through Medicaid, in addition to the facility fee. More than half of all California births are financed by Medi-Cal.^{130,131} Although NMs must practice under the general supervision of a physician, they may enroll as independent Medi-Cal providers. California is one of 29 states in which the Medicaid fee-for-service reimbursement rate for NMs

is equivalent to physicians' rates.^{132,133} California LMs may also enroll as independent Medi-Cal fee-for-service providers and be reimbursed for up to 100% of physicians' rates.^{134,135} All Medi-Cal managed care plans (MCPs) are required to provide access to at least one NM and one LM in the MCP's provider network. However, if there are no NMs or LMs in the network, the MCP must reimburse the out-of-network NMs and LMs at no less than the applicable Medi-Cal fee-for-service rate for services provided.¹³⁶⁻¹³⁸

Because Medi-Cal reimburses NMs at 100% of the physician rate, prices for Medi-Cal beneficiaries who receive NM care may not change much if NMs achieve full practice authority. However, the greater supply of NMs that would result from affording them full practice authority could lead to lower costs for private insurance due to greater utilization of less expensive NMs (relative to physicians). Moreover, NM care is associated with lower cesarean birth rates and fewer procedures during birth, and there is some evidence that greater integration of midwifery care within the health care system could lead to improved birth outcomes. These benefits all could produce additional cost savings. The midwifery-led models of care dominant in other industrialized nations — all of which have lower health care costs than the United States — are consistent with the likelihood that expanded midwifery care would reap economic benefits.

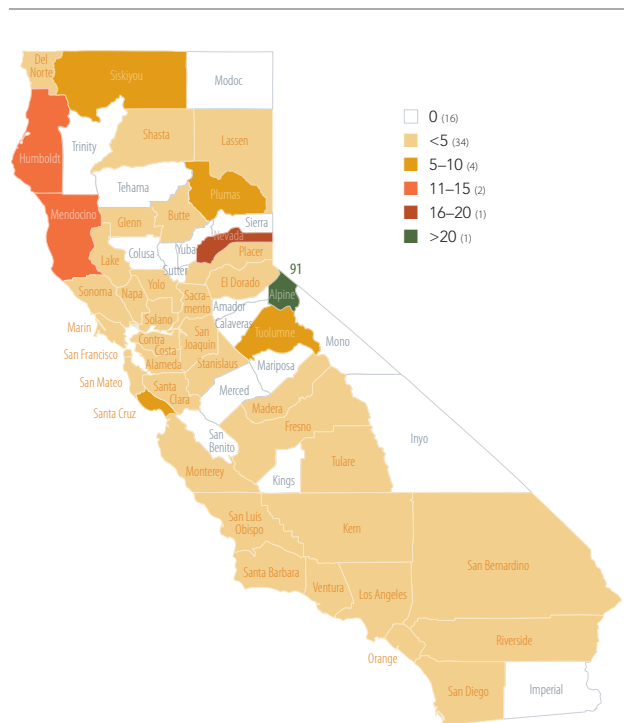
Appendix. The Landscape of Midwifery in California

Current Number of Midwives and Their Geographic Distribution

In 2019, there were 386 LMs with active licenses in California.¹³⁹ In October 2019, there were 753 NMs in California.¹⁴⁰ Approximately half of California’s CNMs are also licensed as nurse practitioners.¹⁴¹

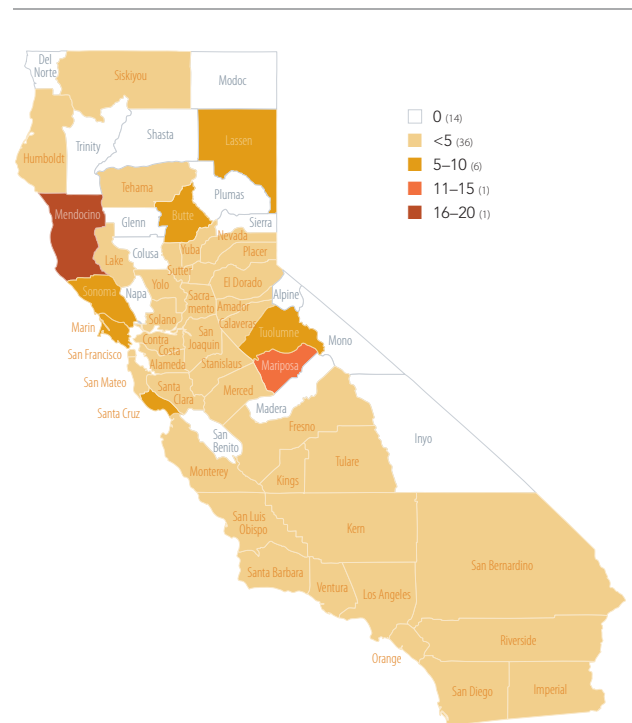
The per capita distribution of midwives across California varies widely by region.

Figure A1. Licensed Midwives per 100,000 Population, by California County, 2019



Sources: Annual Estimates of the Resident Population for Selected Age Groups by Sex for the United States, States, Counties, and Puerto Rico Commonwealth and Municipalities: April 1, 2010 to July 1, 2018, 2018 Population Estimates. Data request from the Medical Board of California (July 2019).

Figure A2. Nurse Midwives per 100,000 Population, by California County, 2019



Sources: Annual Estimates of the Resident Population for Selected Age Groups by Sex for the United States, States, Counties, and Puerto Rico Commonwealth and Municipalities: April 1, 2010 to July 1, 2018, 2018 Population Estimates. Data request from the Board of Registered Nursing (September 2019).

Demographic Characteristics

Table A provides information about the demographics of nurse-midwives and licensed midwives in California. The Board of Registered Nursing collected information about NM demographic characteristics through a sample survey conducted in early 2017; comparable data on the racial/ethnic and gender characteristics of LMs are not available.

Nearly all NMs are female (98.9%), and it is likely that nearly all LMs are female as well. The NM workforce is somewhat older than the LM workforce; 48% of NMs are 55 years and older, while only 27% of LMs are 55 years and older. The NM workforce is predominantly white, but 5.9% of NMs are Black, which is high compared with many other health professions.

Educational Pipeline in California

There are currently two NM education programs in California, at California State University, Fullerton, and the University of California, San Francisco.¹⁴² These programs graduate approximately 30 students per year. There is only one LM program accepted by the Medical Board of California as meeting the educational requirements for a licensure, the Nizhoni Institute of Midwifery, based in San Diego. The Medical Board also has approved programs in other states: two in Florida and one each in Idaho, Maine, New Mexico, Oregon, Texas, Utah, Vermont, and Washington. The Medical Board also has approved two midwifery schools that allow students to obtain credit by examination for previous midwifery education and clinical experience, based in Texas and Vermont.

Table A. California Midwives, by Demographic

| | NURSE- MIDWIVES | LICENSED MIDWIVES |
|------------------------------------|--------------------|----------------------|
| Gender | | |
| ▶ Male | 1.1% | — |
| ▶ Female | 98.9% | |
| Age Group | | |
| ▶ Under 35 | 10.0% | 12.2% |
| ▶ 35–44 | 21.3% | 37.3% |
| ▶ 45–54 | 20.8% | 24.4% |
| ▶ 55–64 | 21.2% | 16.6% |
| ▶ 65 and older | 26.7% | 9.6% |
| Racial/Ethnic Group | | |
| ▶ White, non-Hispanic | 82.4% | — |
| ▶ Hispanic | 4.3% | |
| ▶ Asian | 3.8% | |
| ▶ Black/African American | 5.9% | |
| ▶ Native Hawaiian/Pacific Islander | 0.7% | |
| ▶ Mixed/Other | 2.9% | |

Source: Authors' analysis of the 2017 Survey of Nurse Practitioners and Certified Nurse Midwives public-use data file.

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