CHARTING A COURSE
FOR THE 21ST CENTURY:

THE FUTURE OF MIDWIFERY

A Joint Report of the
PEW HEALTH
PROFESSIONS COMMISSION
and the
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PREFACE

In early 1998, the Center for the Health Professions at the University of California, San Francisco convened a taskforce of national experts to study the midwifery profession and the impact that recent changes in health care delivery have had on the profession. The work of the Taskforce was staffed by the Center and supported by a grant from The Pew Charitable Trusts. Upon finishing its work, the Taskforce submitted the following report and recommendations for review by the Pew Health Professions Commission. The Commission approved the document in late 1998. The Future of Midwifery is a joint publication of the Pew Health Professions Commission and the UCSF Center for the Health Professions.

ACRONYMS USED IN THIS REPORT

AAT	auscultated acceleration test
ACC	ACNM Certification Council, Inc.
ACNM	American College of Nurse-Midwives
CM	certified midwife
CNEP	Community-Based Nurse-Midwifery Education Program
CNM	certified nurse-midwife
CPM	certified professional midwife
DEM	direct entry midwife
DOA	ACNM Division of Accreditation
FHR	fetal heart rate
FNS	Frontier Nursing Service
GHC	Group Health Cooperative of Puget Sound
HSCB	Health Science Center at Brooklyn
MANA	Midwives Alliance of North America
MCH	Maternal and child health
MEAC	Midwifery Education Accreditation Council
MPH	Master of public health
MSN	Master of science in nursing
NARM	North American Registry of Midwives
ND	doctor of nursing
NST	non-stress test
RN	registered nurse
SMS	Seattle Midwifery School
SUNY	State University of New York

EXECUTIVE SUMMARY

Recent changes in health care delivery and reimbursement systems have affected everyone, from the consumer, to the payor, to the health care professional. In an effort to explore the effect market-driven reform of health care delivery and financing systems has had on midwives and how managed care may affect the profession in the future, the Center for the Health Professions convened a Taskforce on Midwifery in early 1998.

In meeting its charge, the Taskforce has reviewed the available literature and analyzed recent market changes. It is the finding and vision of the Taskforce that **the midwifery model of care is an essential element of comprehensive health care for women and their families that should be embraced by, and incorporated into, the health care system and made available to all women.**

To fully realize this vision, a number of actions need to be taken. The Taskforce offers fourteen recommendations for educators, policy makers and professionals to consider. The Taskforce on Midwifery proposes these recommendations in the spirit of improving health care and hopes that the report will benefit women and their families through increased access to midwives and the midwifery model of care. The report should serve to inform managed care organizations, health care professionals and others who employ, collaborate with, and reimburse midwives about the midwifery model of care and its benefits. In addition, the authors hope to inform the profession of midwifery about the opportunities and challenges it faces in today's health care delivery environment.

FIVE ISSUE AREAS WITH RECOMMENDATIONS

PRACTICE

Health care practice, the ultimate delivery of services by the professional to the consumer, reflects the efforts of the professional, regulatory, education and research worlds to provide optimal care. However, practice settings and professional practices themselves are not neutral sites; they can either facilitate or impede the provision of high quality care. For example, interprofessional disputes, communication breakdowns, and inappropriate

management can limit access to care, increase costs and lower quality. Four recommendations are offered to health care system administrators and practitioners—including midwives and other professionals—to help ensure that practice structures are designed to provide the best health care possible by making the midwifery model of care readily available to women.

1. Midwives should be recognized as independent and collaborative practitioners with the rights and responsibilities regarding scope of practice authority and accountability that all independent professionals share.

2. Every health care system should integrate midwifery services into the continuum of care for women by contracting with or employing midwives and informing women of their options.

3. When integrating midwifery services, health care organizations should use productivity standards based on the midwifery model of care and measure the overall financial benefits of such care.

4. Midwives and physicians should ensure that their systems of consultation, collaboration and referral provide integrated and uninterrupted care to women. This requires active engagement and participation by members of both professions.

REGULATION AND CREDENTIALING

The regulation and credentialing of midwives, as with all health care professionals, is complicated, challenging and often contradictory. Optimally, laws and regulations would permit full access to midwifery services while protecting the public. Once regulatory parameters are in place, private sector credentialing bodies must avoid unnecessarily limiting midwives within their statutory scope of practice. Building on the four recommendations proposed in the section on practice, the following recommendations offer specific strategies for the appropriate regulation and credentialing of midwives.

5. State legislatures should enact laws that base entry-to-practice standards on successful completion of accredited education programs, or the equivalent, and national certification; do not require midwives to be directed or supervised by other health care professionals; and allow midwives to own or co-own health care practices.

6. Hospitals, health systems, and public programs, including Medicare and Medicaid, should ensure that enrollees have access to midwives and the midwifery model of care by eliminating barriers to access and inequitable reimbursement rates that discriminate against midwives.

7. Health care systems should develop hospital privileging and credentialing mechanisms for midwives that are consistent with the profession's standards, recognize midwifery as distinct from other health care professions, and recognize established processes that permit midwives to build upon their entry-level competencies within their statutory scope of practice.

EDUCATION

Midwifery education not only provides students with the academic and clinical expertise they need to provide care; it also serves as the pipeline of professionals to practice settings. The current evolution of health care will mean a shift in orientation for educators from a supply-driven perspective to one driven by demand. It will also mean a shift in the way health care professionals are educated. The following recommendations will challenge educators to continue to develop faculty, programs, curricula and recruitment policies to meet consumer demands in a changing health care arena.

8. Education programs should provide opportunities for interprofessional education and training experiences and allow for multiple points at which midwifery education can be entered. This requires proactive intra- and interprofessional collaboration between colleges, universities and education programs to develop affiliations and complementary curriculum pathways.

9. Midwifery education programs should include training in practice management and the impact of health care policy and financing on midwifery practice, with special attention to managed care.

10. The profession should recognize and acknowledge the benefits of teaching the midwifery model of care in a variety of education programs and affirm the value of competency-based education in all midwifery programs.

11. The midwifery profession should identify, develop and implement mechanisms to recruit student populations that more closely reflect the U.S. population and include cultural competence concepts in basic and continuing education programs.

RESEARCH

The field of health professions research must continually grow and evolve in order to make its necessary contributions to health care. As with other professions, critical midwifery workforce and practice data remain to be gathered and analyzed. In some cases, relatively minor shifts in focus will result in useful information. Other recommendations will require a significant policy reorientation, creativity or infusion of financial or academic support to realize results.

12. Midwifery research should be strengthened and funded in the following areas:
    - Demand for maternity care, demand for midwifery care, and numbers and distribution of midwives;
    - Analyses of how midwives complement and broaden the woman's choice of provider, setting, and model of care;
    - Cost benefit, cost-effectiveness, and cost utility analyses, including the relationship between knowledge of economic/cost analyses and provider practices;
    - Midwifery practice and benchmarking data (among midwives) with a goal of developing appropriate productivity standards;
    - Descriptions and outcome analyses of midwifery methods and processes;

- Analysis of midwifery practice outcomes, from pre-conception through infancy, using an evidence-based perspective;
- Normal pregnancy, normal labor and birth, healthy parent-infant relationships, and breastfeeding; and
- Satisfaction with maternity and midwifery care.

13. Federal and state agencies should broaden systematic data collection, which has traditionally focused on medicine and physicians, to include midwifery and midwives.

POLICY

Some of the most pressing issues regarding midwifery go beyond the current scope of state regulators, professional associations, educators and practice settings. These issues should be addressed in order to improve health care for women and their families. An already existing body, external to the profession, is best positioned to address and offer objective guidance on these concerns.

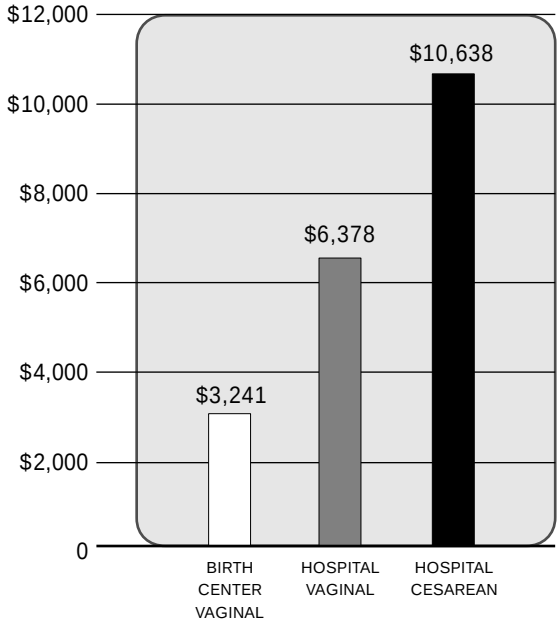
14. A research and policy body, such as the Institute of Medicine, should be requested to study and offer guidance on significant aspects of the midwifery profession including:
    - Workforce supply and demand;
    - Coordination of regulation by the states;
    - Funding of research, education and training; and
    - Coordination among the federal agencies whose policies affect the practice of midwifery.

PART I MIDWIFERY CARE IN THE UNITED STATES

OVERVIEW

Midwifery is the approach to childbirth and women's health care that is used extensively in many parts of the world, including Europe, Australia, New Zealand, and Japan. The United States and Canada stand apart as being the only two countries in this peer group where midwives do not play a central role in the care of all or most pregnant women (Rooks, 1997 pp. 393-446; Declercq, 1994). Midwives who are able to fully practice the midwifery model of care may offer choices for women that have not been fully explored or used by health plans or consumers. The subject of this report is whether better care management in today's health care environment can provide opportunities to expand women's access to midwives in the United States.

With almost 4 million children born in the U.S. every year (Ventura *et al.*, 1998), childbirth is one of the most common reasons to use a health care professional and to access the health care system. The costs associated with this care are significant. A 1996 study of 40,000 insured women found that average charges were $7090 for an uncomplicated vaginal birth and $11,450 for a cesarean delivery. Of these totals, the average percentage of charges attributed to physicians was 40-45%. The hospital component of care accounted for the remaining portions (Mushinski, 1998). Although alternative settings for childbirth include homes and birth centers, ninety-nine percent of U.S. deliveries occur in hospitals (Ventura *et al.*, 1998). Childbirth is the single most common cause for hospitalization, accounting for over 20% of all hospital discharges for women (US Bureau of the Census, 1998). As can be seen, however, hospitals are expensive settings for childbirth. (*See Figure 1*)



Source: National Association of Childbearing Centers, 1997.

FIGURE 1 *Birth Charges in the U.S., 1995*

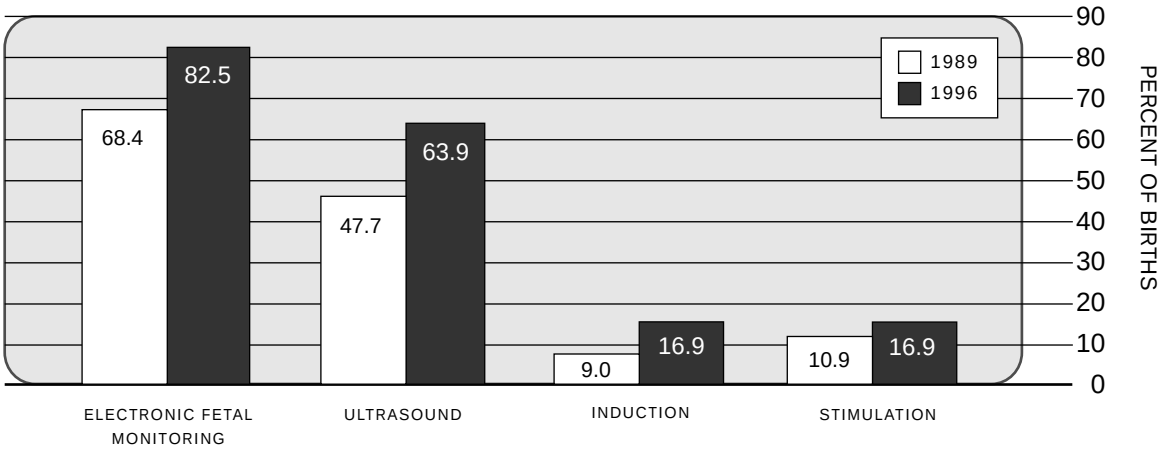


FIGURE 2
Frequency of Use of Obstetric Procedures in the U.S., 1989-1996

Source: NCHS Natality Data for 1989 and 1996 (NCHS, 1993c; Ventura et al, 1998)

Despite these costs, and although the U.S. spends more per capita on health care than any other country, 24 other countries had lower infant mortality rates in 1994[1] (National Center for Health Statistics, 1998) and the maternal death rate in the U.S. has not improved in 15 years even though 50% of those deaths are estimated to be preventable (National Center for Health Statistics, 1998; Chronicle News Services, 1998).

Childbirth is a medical event in the United States, with 93% percent of all U.S. births attended by physicians (Ventura *et al*., 1998). Most of these attending physicians are surgical specialists in obstetrics although the large majority of births are vaginal deliveries without complicating diagnoses (Agency for Health Care Policy and Research, 1997). Consistent with this approach to childbirth, the use of obstetric procedures increased between 1989 and 1996 (*See Figure 2*). In addition, despite a slight decrease in cesarean section rates (from 22.8% in 1989 to 20.7% in 1996), it seems unlikely that the U.S. will meet the Healthy People 2000 objective for a cesarean section rate of 15% or lower (Ventura *et al*., 1998).

Based on the evidence, the current approach to pregnancy and childbirth in the United States is often not warranted. Appendix I includes excerpts from the results of an international effort to collect and synthesize information from randomized controlled trials of perinatal care and evidence regarding current labor and birth practices, including those that are frequently used inappropriately, or are harmful or ineffective (Enkin *et al*., 1995).

1. An alternative to the infant mortality rate in measuring pregnancy outcome is the feto-infant mortality rate, which reduces the effect of international differences in distinguishing between fetal and infant deaths. The U.S. ranks 25th on the infant mortality rate and 23rd on the feto-infant mortality rate (National Center for Health Statistics, 1998).

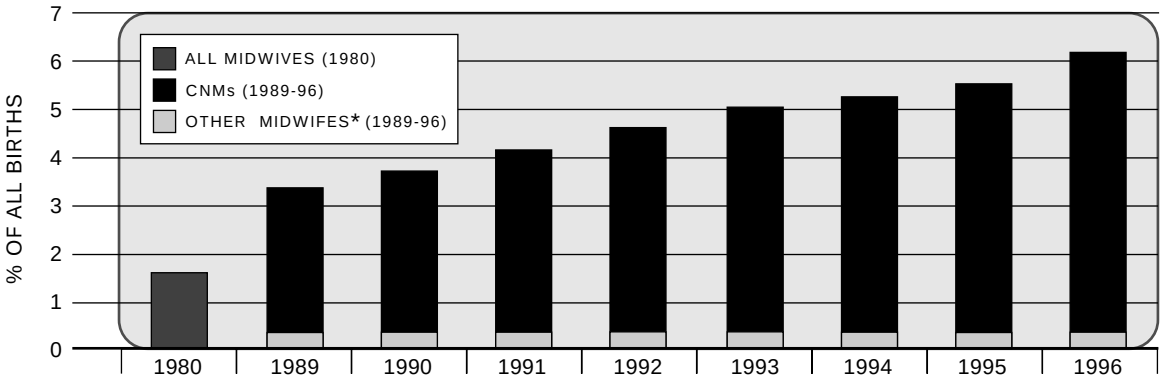


FIGURE 3
Percent of U.S. births attended by midwives, 1980-1996

Source: NCHS Advance Reports of Final Natality Statistics for years 1980, 1989-1996 (NCHS, 1982; NCHS, 1991; NCHS 1993a; NCHS, 1993b; Ventura et al, 1994; Ventura et al, 1994; Ventura et al, 1995; Ventura et al, 1996; Ventura et al, 1997; Ventura et al, 1998).
*"Other Midwives" includes both direct-entry midwives and graduate nurse-midwives not yet certified by the ACNM.

Furthermore, some elements of care that are known to be beneficial to mothers and babies, such as guaranteeing women the consistent presence of a trained caregiver to provide support and encouragement throughout labor and birth, are not available in many hospitals in this country (Maternity Center Association, 1998).

Even prenatal care as it is currently delivered in the U.S. may not be optimal. Kogan and colleagues (1998) found that prenatal care use increased steadily from 1981 through 1995 in the U.S., but suggest that because the rates of low birth weight and preterm birth worsened during the same period, "simply offering more prenatal care services without careful evaluation of the clinical significance of the services provided may not lead to improved birth outcomes."

While the vast majority of U.S. births are attended by physicians and take place in hospitals, this is not the only model available to women in the United States. An approach using the midwifery model of care is less common in this country although gaining in popularity. Midwives attended a quarter of a million U.S. births in 1996 or 6.5% of the total (Ventura *et al.*, 1998), up from 3.6% in 1989 (Rooks, 1997 p. 149).[2] (*See Figure 3*)

In hospitals, the midwifery model is often complementary to the more common medical approach and both models are employed to provide care to women and their families. In some cases and settings, such as with home births and birth center births, the midwifery model is an alternative to the medically oriented approach.

2. Most of these births were attended by nurse-midwives. While the percent of direct-entry midwife attended births has remained stable, the percent of U.S. births attended by nurse-midwives has grown steadily over the past decade. Additional information about direct-entry midwives and nurse-midwives can be found in the following pages.

The midwifery model of care 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 post-partum support; minimizing technological intervention; and identifying and referring women who require obstetrical attention (Burch, 1998).

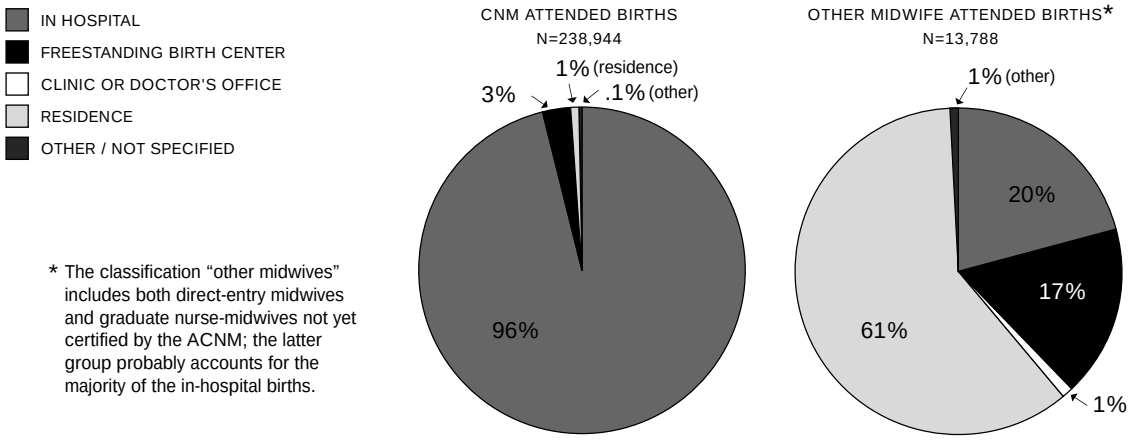
For several decades, researchers, policy analysts and consumer advocates consistently have found that the care provided by midwives differs from the medical model of care in ways that benefit women and their families in terms of quality, satisfaction and costs.[3] Data from the most recent research and preliminary findings from current studies on nurse-midwives reaffirm earlier works and highlight evidence that midwifery care can result in improved outcomes and decreased utilization of resources that translate into cost savings (MacDorman and Singh, 1998; Jackson *et al.*, 1998).

The Midwifery Model for Pregnancy and Maternity Care

"Whereas medicine focuses on the pathologic potential of pregnancy and birth, midwifery focuses on its normalcy and potential for health. Pregnancy, childbirth and breastfeeding are normal bodily and family functions. That they are susceptible to pathology does not negate their essential normalcy and the importance of the nonmedical aspects of these critical processes and events in people's lives. Midwives know about the medical risks, identify complications early, and collaborate with physicians to assure medical care for serious problems. But attention to the medial aspects of these complex processes, while essential, is not sufficient. Midwives focus on each woman as a unique person, in the context of her family and her life. The midwife strives to support the woman in ways that empower her to achieve her own goals and hopes for her pregnancy, birth and baby, and for her role as mother. Midwives believe that women's bodies are well designed for birth and try to protect, support, and avoid interfering with the normal processes of labor, delivery, and the reuniting of the mother and newborn after their separation at birth."

(Rooks, 1997 p. 2. Used by permission of Temple University Press from Midwifery and Childbirth in America *by Judith Rooks.*

3. Steele, 1941; Laird, 1955; Frontier Nursing Service, 1958; Metropolitan Life Insurance Company, 1958; Levy et al., 1971; Browne and Isaacs, 1976; Reid and Morris, 1979; Cherry and Foster, 1982; Tom, 1982; Office of Technology Assessment, 1986; Krumlauf et al., 1988; Bell and Mills, 1989; Brown and Grimes, 1995; Margolis and Kotelchuck, 1996; Oakley et al., 1996.



* The classification "other midwives" includes both direct-entry midwives and graduate nurse-midwives not yet certified by the ACNM; the latter group probably accounts for the majority of the in-hospital births.

FIGURE 4
Midwife attended U.S. births by place of delivery, 1996

Source: NCHS advance report of final natality statistics for 1996 (Ventura et al, 1998).

The midwifery model of care views childbirth and well-woman care as normal processes that do not require medical intervention unless there are signs of pathology or deviations from normal. Whether early or late in the pregnancy, it is at the point where medical intervention is indicated that the midwife makes the appropriate transfer, referral or consultation. This effective collaboration between the midwife and the physician, where the expertise of both professions is valued, is key to ensuring optimal outcomes for women and their infants.

WHO IS A "MIDWIFE"?

Two broad categories of midwives exist in the United States: nurse-midwives and direct-entry midwives. Nurse-midwives are educated in both nursing and midwifery, while direct-entry midwives focus their professional preparation on midwifery alone. The practice of midwifery in the United States is regulated by state law and largely influenced by national certification. In order to practice as a nurse-midwife, one must be a certified nurse-midwife (CNM). Direct-entry midwives might be CPMs (certified professional midwives) or CMs (certified midwives), or might practice without national certification.[4]

Neither the two broad categories of nurse-midwifery and direct-entry midwifery, nor the certification acronyms, are interchangeable. Differences exist in midwifery education and certification mechanisms, as well as in scopes of practice authority and practice settings. Policymakers, regulators and consumers should be aware of these differences when making

4. Some states recognize direct-entry midwifery without the need for national certification. Some direct-entry midwives practice in states that do not recognize direct-entry midwifery.

Education and Certification Standards for Midwives

Nurse-midwives (certified nurse-midwives)

Standards for the education and certification of certified nurse-midwives are set by the American College of Nurse-Midwives (ACNM) and the ACNM Certification Council, Inc. CNMs are required to complete an ACNM Division of Accreditation accredited educational program that is university-based or affiliated and assures mastery of the core competencies for nurse-midwifery practice as described by the ACNM. Graduates of accredited programs are eligible to take a national certification examination. There are 46 educational programs for CNMs and over 7,000 individuals have earned this credential since it was first established 30 years ago. Certified nurse-midwives are licensed to practice in all fifty states and the District of Columbia. (See Appendix III for a list of ACNM accredited programs.)

(continued)

decisions about recognizing and employing midwives. For example, most nurse-midwives are trained and practice in hospitals while most direct-entry midwives are trained and practice in homes. This difference can affect employment status, mechanisms for third party payment, style of practice and interprofessional relationships. (*See Figure 4*)

Despite their differences, most midwives have much in common, including a philosophical adherence to the midwifery model of care. For the purpose of this report, the term "midwifery" is generally used to describe the practice of CNMs, CPMs and CMs, i.e. midwives who have earned a nationally established credential. When necessary the report will clarify if the statement refers only to an individual group of midwives.[5] Additional information about CNMs, CMs, and CPMs can be found in the sidebar about the education and certification standards for midwives and from the organizations listed in Appendix II.

5. There is extensive research and descriptive data on the outcomes of care and scope of practice of CNMs in the U.S. (see for example references listed at footnote 3). Only a small amount of data has been collected to describe the practice of CPMs and CMs. One exception is the state of Washington, where licensed direct-entry midwives have been educated and recognized for over 20 years. Evidence exists that these midwives have contributed to the provision of safe maternity care (see the sidebars regarding Washington in the sections on practice and education).

(continued from page 6)

Direct-entry midwives

(including certified professional midwives and certified midwives)

National standards for direct-entry midwives were established more recently and, to date, are less widely recognized than those for certified nurse-midwives. The North American Registry of Midwives (NARM) created a mechanism for credentialing certified professional midwives in 1994 and over 400 midwiveshave become CPMs. Twelve of the sixteen states where direct-entry practice is regulated either require or recognize the NARM written examination. NARM certification for entry-level midwives requires that they be evaluated on the knowledge and skills that comprise the core competencies described by the Midwives Alliance of North American. NARM certification does not require completion of an accredited educational program. However, a sister organization, the Midwifery Education Accreditation Council, has established an accrediting mechanism and accredited or pre-accredited eight programs. These programs require either a high school diploma or a GED for entering midwifery students and some programs have additional requirements as well. (See Appendix IV for a list of MEAC accredited schools.)

In 1996 the American College of Nurse-Midwives adopted standards for the certification of direct-entry midwives to be known as certified midwives (CMs). The standards and certification mechanism are equivalent to those set for CNMs. As of 1998, one direct-entry program had been pre-accredited by the ACNM and ten CMs had been certified (See the education section for a sidebar describing this ACNM direct-entry program).

The 16 states that currently use regulation to recognize and permit direct-entry midwives to practice generally have laws that pre-date either of these national certification mechanisms, and the requirements for licensure differ from one state to another. About 700 direct-entry midwives are regulated in these 16 states.[6] Some of these state licensed or registered midwives are also CPMs or CMs. Approximately 10 states prohibit, by statute or judicial interpretation, direct-entry midwifery practice. About 25 states either allow midwifery practice without licensure or have statutes that require licensure but do not have a mechanism in place to issue the license.

6. Alaska, Arizona, Arkansas, California, Colorado, Florida, Louisiana, Montana, New Hampshire, New Mexico, New York, Oregon, Rhode Island, South Carolina, Texas, Washington

MIDWIFERY AND MANAGED CARE

The movement to managed systems of care continues almost unabated. By mid-year 1998 over 85% of the population insured by medium and large employers was enrolled in some form of managed care (Levitt and Lundy, 1998), followed by 40% of those insured through Medicaid (Holahan *et al.*, 1998) and about 15% of the Medicare population (Medicare Payment Advisory Committee, 1998). While the movement has provoked serious questions from the public and elected representatives, the alteration of systems of care to be more intensively managed seems inevitable.

Analysts suggest that the system that is emerging is built on three concerns or values: lowering or controlling costs, enhancing patient satisfaction as a consumer, and improving the overall quality of care (Pew, 1998). Most of the emphasis to date has been on the first of these values, with some on satisfaction and little on improvement of quality. Competition among health plans and providers on the basis of quality is likely to remain a lower priority until cost competitiveness is no longer possible and alternative methods of deploying health care resources can demonstrate that they do improve quality.

The effect of the movement to managed systems has led to three important developments that impact midwifery in different ways. First, the **consolidation of providers** has created larger and larger aggregations of hospitals, physicians, and other providers. These systems of care have come about in no small measure as a way to give providers—hospitals and professionals—more control over the changes. As such, the systems may represent powerful combinations of those who would protect the status quo and maintain the medical or disease approach to birth. As these systems evolve, however, they may become more interested in the benefits that accrue from providing opportunities for midwives to contribute to health care.

As systems consolidate they must eventually demonstrate that they can add value to the overall health care production process or be challenged by other more productive or effective ways of organizing and delivering care. To meet this challenge most systems plan to integrate the formerly disparate and isolated services into an **integrated continuum of care** that can lower costs, increase patient satisfaction and maintain or improve quality of care. Midwives represent an important resource in creating such systems. They have traditionally enjoyed high levels of patient satisfaction and quality and, when considered in an overall continuum of care, the costs of midwifery services compare favorably to others.

As the systems integrate services, there are early signs that they are positioned to evaluate the contributions of various professions and institutions toward the goals of cost, satisfaction and quality in an empirical and unbiased manner. This has led to new **opportunities for innovative, creative and non-traditional approaches.** While midwifery is a well-established profession, it has had difficulty gaining full recognition in the health system to date because it calls for different approaches to the birthing process and for shared authority between physicians and midwives over that process. Health care administrators, payors and other professions may also lack a full understanding and appreciation of the midwifery model of care and its benefits. The new system represents some redistribution of power that may provide midwives greater opportunity to demonstrate what they can contribute.

At its core, managed care is about managing the risks associated with care delivery and the costs that are associated with those risks.[7] As health plans have long understood and providers are increasingly coming to recognize, the effective management of risk is where real change can be brought to the system. This leverage can be used to lower costs, improve outcomes, improve profitability, enhance consumer satisfaction, or some combination of these objectives depending upon the mission and strategies of the organization that assumes the risk. Historically, health plans have the most experience with the management of risk utilizing their knowledge of the actuarial process, marketing, provider contracting and member relations.

Midwives have an opportunity to more fully participate in the delivery of care by assuming some part of the financial risk associated with their patients' health care. To do so, they must fully understand the implications of financial risk management and will more likely be successful in larger aggregations of practitioners and perhaps with other partners. Individual independent practitioners will find it more difficult to manage financial risks associated with delivery of care than will those in large groups or organizations. In part, this has to do with the creation of a larger insurance pool and in part with being large enough to have or afford managerial controls.

By and large, managed care systems are shifting the professional training and employment system from a supply dominated approach, controlled by the professional communities and policy makers, to one that is more demand-driven and informed by institutions that must

7. This concept is also known as "risk sharing", or the distribution of financial risk among parties furnishing a service.

meet the new system goals in order to survive. While this means new opportunities for midwifery, it also means new challenges. For example, the successful professional will need excellent one-on-one clinical skills as well as population-based skills in clinical epidemiology, biostatistics and behavioral sciences and their application to defined populations for whom health professionals share responsibility. Health care professionals must also be able to comprehend various financing arrangements for managed care and how they can be fully incorporated into the methods for delivering midwifery service. The difficulties some midwives have experienced in establishing contracts with managed care organizations or with conforming to productivity standards that were developed for physicians and medically-oriented care challenge both midwives and administrators to find ways to work together.

Challenges also extend to midwifery researchers and others interested in midwifery, women's health, and maternity care. Emerging systems of care will increasingly be moved by empirical data that point to cost savings, satisfaction and quality improvement. Research must include a focus on these goals in order to document the benefits of current midwifery practice and continuously improve the effectiveness of midwifery care.

THE TASKFORCE ON MIDWIFERY

In an effort to explore the effect market-driven reform of health care delivery and financing systems has had on midwives and how managed care may affect the profession in the future, the Center for the Health Professions convened a Taskforce in early 1998.

The Taskforce was charged with:

> *Exploring the impact of changes in health care delivery and financing systems on midwifery, identifying issues facing the profession and the role it plays in women's health care, and offering recommendations in the interest of providing the best possible care to women and their families.*

In meeting its charge, the Taskforce reviewed available literature and analyzed recent developments. It is the finding and vision of the Taskforce that **the midwifery model of care is an essential element of comprehensive health care for women and their families that should be embraced by, and incorporated into, the health care system and made available to all women.** The midwifery model includes safe, high quality care with the same

or better outcomes at lower costs than comparable alternatives, and a philosophy that emphasizes wellness, preventive care, and interprofessional collaboration.

The Taskforce hopes this report will lead to fuller provision of high quality health care to women who choose midwifery services. The report should serve to inform managed care organizations, health care professionals and others who employ, collaborate with, and reimburse midwives about the midwifery model of care and its benefits to women and their families. In addition, the report has been prepared to inform the profession of midwifery about the opportunities and challenges it faces in today's health care delivery environment.

WHAT'S IN THE REPORT?

The remainder of this report is organized by sections addressing issues of practice, regulation and credentialing, education, research, and policy. The **Practice** section covers the "where and how" of midwifery services, and the recent changes to practice arrangements where the movement to managed care is most acutely felt; **Regulation & Credentialing** deals with the variance of state laws and regulations and hospital privileging mechanisms; the section on **Education** addresses curriculum content and student recruitment; **Research** includes information about immediate and future midwifery research needs; the final section, **Policy,** discusses the need for an overarching course of action regarding midwifery in this country.

Each of these five sections concludes with a short list of recommendations most pertinent to that topic. Taken together, the recommendations provide a comprehensive approach to improving women's health care. Although the issues overlap and intersect, each recommendation may be explored on an individual basis.

The report is written for a wide audience, including administrators of hospitals, health plans and health care delivery systems; policy makers; health professions educators (of midwives and others), researchers, and practicing and student midwives. In spite of the diversity of education, regulations and practice within the midwifery profession, some sections in this report are pertinent to all members of the profession; other sections of the report, and some of the recommendations, apply only to specified sub-groups of the profession.

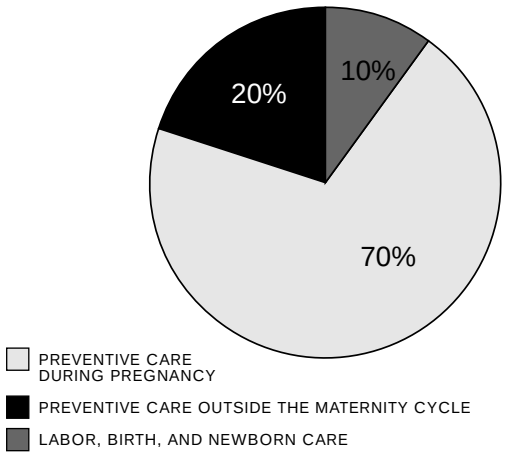
PART II FIVE ISSUE AREAS *with* RECOMMENDATIONS

PRACTICE

Though universally grounded in the midwifery model of care, midwifery practice arrangements—where and how midwives provide services—are varied and evolving. The vast majority of midwives focus their clinical practice on pregnancy and childbirth (Walsh and Boggess, 1996). In addition, many also provide primary women's health care (ACNM, 1994); a 1991-92 study found that 20% of visits to nurse-midwives are for care that is not pregnancy-related (Paine *et al.*, 1999). The majority of midwives practice in hospitals, but some attend births in birth centers and homes (Ventura, 1998). Those providing "well-woman" gynecological care and primary care may work in offices and clinics (Walsh and Boggess, 1996). (*See Figure 5*)

Reimbursement structures and employment arrangements can affect interprofessional relations and how midwives function in their practice settings. Where permitted by law, some midwives own independent practices and contract with physicians for consultation and with managed care organizations for reimbursement. Others may co-own practices with physicians. Many are salaried and employed by hospitals or physician-owned practices. In these settings, the employer bills for services provided by the midwife on a contracted fee-for-service basis or as a covered service under a capitated agreement.

Practice arrangements are in flux. Today's managed care organizations are willing to try new combinations of health workers who can deliver the same or better quality of care as that delivered under traditional models if the cost is lower. For midwives, this approach is promising but will require ongoing research and documentation of practice outcomes. It may be under these newer practice arrangements that midwifery care excels. One arrangement worth encouraging and researching is the midwife-physician team, because many will agree that neither profession can provide comprehensive care without the other.



Source: ACNM, 1994.

FIGURE 5
Range of care provided during visits to CNMs, 1992

Midwifery in a Practice Management Company

Athena HealthCare is a Boston-based practice management company dedicated to improving women's health care. This is accomplished by partnering with obstetric, midwifery and gynecologic practices that share a vision of providing an excellent service experience to women. The organization promotes the benefits of "equal-partner" collaboration; first between physicians and midwives, second between clinicians and managers. Athena believes that physicians and midwives, in collaboration, are best equipped to define and lead the next generation of health care delivery based on quality, service, choice and efficiency.

It is Athena's belief that in a managed care environment, physician-midwife collaborative practices will flourish, sharing the economic benefits derived from improved outcomes and decreased resource utilization. Athena brings to these groups personalized management services. These services include:

a) region specific market analysis and the development and execution of a marketing plan;
b) implementation of "best demonstrated practices" in clinical care;
c) introduction of information technology to improve workflow, decision analysis and assist with data collection;
d) opportunities for global case rates through strategic partnerships with managed care organizations and payors.

Practice management companies such as Athena can play a role in providing opportunities for collaborative practices to build partnerships between providers and facilities to create competitive global rates based on historic measures. For example, savings can be recognized in the historic measures of a collaborative practice's use of anesthesia services in labor, neonatal

(continued)

Midwives and payors also need to explore the possibilities of risk sharing[8] and negotiated global case rates.[9] Practice management companies should also be investigated for their potential contributions. *(See the sidebar on Midwifery in a Practice Management Company.)*

8. Risk sharing: the distribution of financial risk among parties furnishing a service.
9. Global case rates refer to negotiated rates between payors and providers for an entire health care event. The rates can include professional services (ranging for example from prenatal care and psychological counseling to anesthesia in labor, neonatal and pediatric care) as well as facility charges (a global rate for a vaginal birth would cover all services provided for a patient delivering vaginally; a cesarean section global rate would be facility charges for all expenses related to a cesarean birth.

(continued from page 13)

admissions to a neonatal intensive care unit, cesarean section rates, and average hospital length of stay when compared to traditional physician practices. These savings can translate into profits for providers and into savings for payors.

Athena's flagship practice is in San Diego, California.[10] The practice includes five obstetrician/gynecologists and 16 certified nurse-midwives who provide prenatal and gynecologic care in 12 offices and attend 2500 births each year in a free-standing birth center, two community hospitals and a tertiary care center. Nationally, Athena is actively developing relationships with other, like-minded, medical groups.

For information about how to contact Athena Healthcare, see Appendix II.

Today's practice environment emphasizes productivity. However, some of the tools and standards currently used to measure productivity, such as number of visits per hour or number of births attended, may not adequately capture the benefits that professions bring to health care practice. Published research on nurse-midwifery practice has consistently shown cost advantages (Reid and Morris, 1979; Cherry and Foster, 1982; Krumlauf *et al.*, 1988; Oakley *et al.*, 1996; Bell and Mills, 1989; Rosenblatt *et al.*, 1997). Recent and ongoing research reaffirms the cost benefits of collaborative practices (CNM/obstetrician-gynecologist) at birth centers that employ the midwifery model of care (Jackson *et al.*, 1998).

Traditional productivity demands challenge midwives and all health care practitioners who want to provide the best care to the patient or client without being forced to limit time and costs associated with that care. Productivity demands on one professional may also affect the practice of another. For example, a managed care organization that sets productivity standards for its obstetricians may create incentives for physicians to take away potential clients from the midwife partners and discourage or limit the benefits of the midwifery model of care.

Under models of collaboration, productivity is improved as evidenced by improved outcomes and decreased utilization of resources, which translate into cost savings. By looking at costs for an entire episode of pregnancy, the long-term benefits of comprehensive prenatal care and a less high-technology intervention orientation to birth may be evident in lower cesarean section rates, lower epidural rates, and lower usage of

10. Outcomes from the San Diego Birth Center Study (Jackson et al., 1998) can be found in the sidebar in the research section.

neonatal intensive care units relative to other health care practitioners. Savings on these facility- and technology-related services can outweigh the potentially higher professional costs associated with time-intensive midwifery services.

Most midwives work as independent and collaborative practitioners with other health care professionals to ensure coordinated care of the patient, including referral for complications. Health care systems evaluating the benefits that collaborative practice brings to consumers in the form of measurable improvements in care (Roberts, 1997) might look to collaborative midwifery practices in health maintenance organizations, nurse-midwifery practices, community obstetric/ gynecological residencies, and birth centers as models (Jacobs Institute of Women's Health, 1997). In the future, as midwives continue to teach, train and collaborate with other health care professionals and refer their patients as necessary, so too physicians and other health care professionals should be taught and trained to practice collaboratively with midwives. This would include ensuring that practitioners inform their patients of their choices regarding their primary pregnancy care professional and place of birth, and refer patients to midwives when the woman chooses or when her condition

Definitions Regarding Inter-professional Care of Women Within a Midwifery Model of Care

Consultation is the process by which one health care professional, who maintains primary management responsibility for the woman's care, seeks the advice of another health care professional or member of the health care team.

Collaboration is the process in which two health care practitioners of different professions jointly manage the care of a woman or newborn who needs joint care, such as one who has become medically complicated. The scope of collaboration may encompass the physical care of the client, including delivery, by the midwife, according to a mutually agreed-upon plan of care. If a physician must assume a dominant role in the care of the client due to increased risk status, the midwife may continue to participate in physical care, counseling, guidance, teaching and support. Effective communication between the health care professionals is essential for ongoing collaborative management.

Referral is the process by which one health care professional directs the client to another health care professional for management of a particular problem or aspect of the client's care.

Source: ACNM, 1992.

The Impact of Managed Care on Certified Nurse-Midwives (CNMs): A Case Study of Oregon

A recent case study examined the impact of managed care on certified nurse-midwives in one community in Oregon. Information was gathered during interviews with key informants in the community, including CNMs, physicians, business managers, clinic and office managers, marketing directors, hospital medical directors, and representatives of the hospitals and the county Individual Practice Association (Hartley, 1998). The study focused on two main issues: (1) barriers to CNM practice and autonomy within a managed care context, and (2) strategies for CNM survival within such a context.

The state of Oregon provided a particularly rich backdrop for assessing managed care on CNMs for three specific reasons: (1) state policy regulating the scope of practice for CNMs is rapidly evolving, serving to increase their legal autonomy; (2) Oregon provides an example of a highly developed managed care environment; and (3) Oregon provides insight into the important question of the impact of Medicaid managed care on CNM practice.

Hartley found that not being able to establish contracts with managed care plans was a significant barrier to CNM practice. The following factors either served as obstacles to developing contracts with managed care plans or functioned as barriers to practice after such contracts were in place: lack of independent hospital admitting privileges; inability to establish credentialing mechanisms with a contracting agency or physician-hospital organization; not being listed independently in plan provider directories; lack of knowledge of managed care on the part of CNMs; lack of marketing; and increased professional tension between physicians and CNMs.

indicates that midwifery care would be appropriate. *(See definitions on page 15 regarding interprofessional care.)*

Even though research is confirming the value of midwifery services in today's health care environment, some voices are expressing concern over perceived negative impacts of managed care competition on midwifery practice and patient services. Recent sociological research indicates that midwives continue to experience significant barriers to practice within managed care settings. Hartley's 1998 case study of the impact of managed care on certified nurse-midwives in Oregon provides some examples *(see sidebar)*.

The evolution and emergence of professions, therapies and delivery systems have brought a new range of choices to consumers. Not everyone has the same access to those choices however. Limitations on choice range from ability to pay to the length of managed care provider panel lists. Researchers have focused on the use trends and out-of-pocket expenditures on alternative health care (Eisenberg *et al.*, 1993; Eisenberg *et al.*, 1998), legislators have mandated direct access to specialty care providers, and some managed care plans have loosened policies regarding gatekeepers and referrals. For the profession of midwifery, this activity may translate into increased attention to consumer choice of practitioner, professional philosophy and birth setting. For example, a description of the practices of licensed direct-entry midwives in Washington, where policies have supported expanded consumer choice of practitioner, can be found on the right.

To take advantage of this opportunity for expanded access to midwives through strong consumer choice policies, patients, clients, payors, practitioners and employers will have to be educated about available options. Increased information about choices will result in increased competition among the

Practice of Licensed Direct-Entry Midwives in Washington State*

Public policies in Washington State have supported the development of direct-entry midwifery as well as choice and access to care for childbearing women. Licensed Midwives have benefited from this support and believe that barriers to practice are changing as managed care plans become more prevalent (Myers-Ciecko, 1998).

Licensed Midwives are qualified providers in the state Medicaid program, which implemented reimbursement for birth center deliveries in 1986 and will begin covering home births in early 1999. Direct-entry midwives surveyed in 1998 reported that Medicaid had paid for 34% of their services in 1997 (18% fee-for-service reimburse-ments and 16% through managed care contracts).

Direct-entry midwifery students who commit to work in underserved areas have been eligible for state health professional scholarships since 1989; approximately 20% of all survey respondents had received state scholarships. Scholarship recipients reported on average that 48% of their payments were for Medicaid clients.

A Joint Underwriting Association was created by the state legislature in 1993 to assure that licensed midwives, certified nurse-midwives and licensed birth centers are able to obtain malpractice insurance. Eighty percent of midwives who responded to the survey carry malpractice

(continued)

professions and efforts to compare and contrast the practices of different professions and individual practitioners. Of particular importance to midwives is the comparison of the midwifery model of care with the medical model. Also of significance will be the need to differentiate among the various types of midwives and to educate consumers and others about those differences.

Many consumers are not well informed about midwives, the midwifery model of care, or the benefits associated with the midwifery model. Midwives may be invisible to women who want, or may potentially want, access to them. In some cases, patients are being assigned to managed care plans and providers without consideration for their preference, current health care professionals or ability to access care. These practices can negatively affect quality of care, continuity of care and access to culturally competent care. Active marketing to women and enrollees should include clear descriptions of the midwives' collaborative agreements with physicians, which assure timely access to medical care when needed.

(continued from page 17)

insurance and participate in a quality assurance mechanism that includes periodic practice reviews (Taylor, 1998).

Another law, which requires certain insurance carriers to provide for the inclusion of every category of licensed health professional, including licensed midwives, was also passed in 1993. The Office of the Insurance Commissioner has worked closely with midwives and insurance companies to assure compliance. Most survey respondents reported having one or more managed care contracts, and reimbursement through managed care organizations (combining privately and publicly-funded clients) represented 37% of all payment received. Even so, survey respondents reported the three most significant barriers to practice were (1) difficulty obtaining third party reimbursement, (2) inadequate compensation, and (3) difficulty obtaining contracts with managed care plans.

* *Washington is one state where the requirements for state licensure exceed the national standards for certification as a certified professional midwife. Approximately 1/3 of the licensed midwives in Washington have also chosen to become CPMs.*

The practice of health care generally continues to evidence a high incidence of errors, over-utilization of care and widespread use of unproven practices (Leape, 1994). Consumers and payors have reacted to this evidence with demands for better accountability for the quality of care delivered. Professions that have taken a lead in establishing and ensuring quality standards of their members are well-positioned in the new health care systems. For midwifery to maintain high standards of safety and quality, the profession is exploring the use of peer review processes, quality assurance systems and quality improvement mechanisms.

RECOMMENDATIONS

for PRACTICE

Health care practice, the ultimate delivery of services by the professional to the consumer, reflects the efforts of the professional, regulatory, education and research worlds to provide optimal care. However, practice settings and professional practices themselves are not neutral sites; they can either facilitate or impede the provision of high quality care. For example, interprofessional disputes, communication breakdowns, and inappropriate management can limit access to care, increase costs and lower quality. Four recommendations are offered to health care system administrators and practitioners—including midwives and other professionals—to help ensure that practice structures are designed to provide the best health care possible by making the midwifery model of care readily available to women.

1. Midwives should be recognized as independent and collaborative practitioners with the rights and responsibilities regarding scope of practice authority and accountability that all independent professionals share.

2. Every health care system should integrate midwifery services into the continuum of care for women by contracting with or employing midwives and informing women of their options.

3. When integrating midwifery services, health care organizations should use productivity standards based on the midwifery model of care and measure the overall financial benefits of such care.

4. Midwives and physicians should ensure that their systems of consultation, collaboration and referral provide integrated and uninterrupted care to women. This requires active engagement and participation by members of both professions.

REGULATION, CREDENTIALING AND REIMBURSEMENT

As with all health professions in the United States, midwives are regulated on a state-by-state basis. This has resulted in differences among the states regarding, for example, whether nurse-midwives have prescriptive authority and whether direct-entry midwifery may be practiced legally. Commentators have noted that state-to-state differences among a single profession, far from unique to midwifery, may not be justified to protect the public and can be burdensome to professionals, employers, payors and consumers of health care (Finocchio *et al.*, 1995; Jost, 1997; Safriet, 1992). Such variances provide natural experiments for researchers to study the significant impact that state laws and regulations have on workforce supply and health care practice. For example, Declercq and colleagues (1998) found that, when compared to states with low regulatory support for nurse-midwifery practice, states with high regulatory support had three times the nurse-midwifery workforce, three times the number of midwife-attended births, and two times as many midwife-patient contacts.

State-to-state regulatory differences for nurse-midwives pale in comparison to those for direct-entry midwives. The legal status for direct entry midwives ranges from full licensure (with associated reimbursement policies) in some states to illegality in others.[11] The states are at different points on the continuum regarding legal recognition of direct-entry midwives and must consider whether, for example, to decriminalize direct-entry midwifery, to establish registration requirements so basic data can be collected, or to establish licensure requirements and governing boards for direct-entry midwives.

Beyond state variation is the issue of intra-professional variation. The historical evolution in the United States of two separate categories of midwives, nurse-midwives and direct-entry midwives, has produced two separate types of legislation and regulation. These types reflect differences in education, practice setting, and outcomes research, and add yet another layer of potential confusion for employers, payors, professional colleagues and consumers. Proposals for the two groups to merge in some way are far from being accepted or implemented. Anyone involved in decisions to recognized, employ or use midwives must be aware of the relevant differences. Midwives and the midwifery profession bear primary responsibility for informing and educating people about those differences.

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11. See the section on "Who is a Midwife" at the beginning of this report for differences in state regulation of direct-entry midwives.

In addition to regulation by the states, public and private hospitals and health plans have their own credentialing requirements for health care professionals. Applying these credentialing standards, administrators and medical staff determine who may have hospital admitting privileges, who may be employed by health systems, and who may be listed on managed care provider panels. These policies can artificially hamper midwives within their statutory scope of practice. For example, when the Alabama state Medicaid program moved from a fee-for-service system to a primary case management (PCCM) system, administrators chose not to use nurse-midwives as PCCMs, although CNMs have traditionally cared for Medicaid populations in the state (Summers, 1998). On the other hand, the sidebar description of the Group Health Cooperative of Puget Sound's efforts to provide midwife-attended home births to its members provides an example of coordinated health system credentialing and state regulation.

Managed care administrators have the opportunity to develop and use credentialing mechanisms that are consistent with state scope of practice laws.

Coordinated credentialing and regulation

Group Health Cooperative of Puget Sound (GHC), one of the country's oldest health maintenance organizations, was one of the first managed care plans in Washington to respond to a 1993 "every category of provider law." Although certified nurse-midwives were well-established in GHC hospitals, the law required that enrollees also have access to licensed midwives (i.e., direct-entry midwives attending births in out-of-hospital settings). In addition, GHC members had for years been requesting access to home birth services, so a panel of physicians, managers, and midwives was created to examine the evidence concerning safety of home birth, the qualifications of licensed midwives, and the demand for home births among GHC members.

GHC concluded that it should contract with licensed midwives as the preferred providers for home birth services, created a credentialing mechanism, and circulated a memo to inform enrollees about this option (excerpts follow):

- Why does Group Health use licensed midwives for home births?

  Licensed midwives are specially trained for home births. They provide excellent care and preparation for having your baby at home.

- Do I need a referral to see a licensed midwife?

(continued)

These mechanisms would include initial and continuing education, training and experience in the criteria for hospital privileges, provider panel lists and reimbursement standards. Credentialing mechanisms may ultimately be tailored to effectively evaluate individual practice over an individual's entire career. In all health professions, the range of practice may be broad relative to initial competence, and competence varies from person to person and over time for individuals. At all points during the career of a health care professional, practice responsibilities should be in accord with education, training, background, experience and competence.

Midwives face some particular challenges in the arena of payment and reimbursement for services. For example, under federal law, state Medicaid programs must pay for nurse-midwifery care as long as the service provided is allowed under state laws and regulations. However, the states may set their own payment rates. Thus, while just over half of the state Medicaid programs reimburse CNMs at 100% of the physician fee schedule for Medicaid, some states pay for CNM care at 70-90% of the physician fee schedule (Cohen and Williams, 1998). In the private sector, midwives have faced various payment barriers, including not being reimbursed directly by insurers (Summers, 1998).

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No. You can make your appointment directly with a licensed midwife who has a contract with Group Health.

- What does the preparation for home birth include?

  You will receive counseling and information about labor, delivery, and newborn care. You will also learn about breast-feeding and family relationships. Your midwife may refer you to a childbirth class or suggest books to read. She will also suggest that you arrange for someone to be at home to help you after the birth of your baby. If you develop any health problems during your pregnancy, your midwife will consult a Group Health doctor. You need to give a written informed consent for having your baby at home.

One of the most important factors in the credentialing and integration of Licensed Midwives into managed care plans in Washington state has been the existence of well-developed quality assurance mechanism, first crafted by the Midwives Association of Washington State, and now administered by Quality Midwifery Associates, a private, midwife-owned company that contracts risk management services with Washington Casualty, the administrator of the Joint Underwriting Association. This mechanism includes the preparation of a self-evaluation report by the midwife, a site visit for practice review, guidelines for consultation and referral, and reporting and evaluation of certain sentinel events.

For information about how to contact Group Health Cooperative of Puget Sound, see Appendix II.

RECOMMENDATIONS

for REGULATION, CREDENTIALING & REIMBURSEMENT

The regulation and credentialing of midwives, as with all health care professionals, is complicated, challenging and often contradictory. Optimally, laws and regulations would permit full access to midwifery services while protecting the public. Once regulatory parameters are in place, private sector credentialing bodies must avoid unnecessarily limiting midwives within their statutory scope of practice. Building on the four recommendations proposed in the section on practice, the following recommendations offer specific strategies for the appropriate regulation and credentialing of midwives.

5. State legislatures should enact laws that base entry-to-practice standards on successful completion of accredited education programs, or the equivalent, and national certification; do not require midwives to be directed or supervised by other health care professionals; and allow midwives to own or co-own health care practices.

6. Hospitals, health systems, and public programs, including Medicare and Medicaid, should ensure that enrollees have access to midwives and the midwifery model of care by eliminating barriers to access and inequitable reimbursement rates that discriminate against midwives.

7. Health care systems should develop hospital privileging and credentialing mechanisms for midwives that are consistent with the profession's standards, recognize midwifery as distinct from other health care professions, and recognize established processes that permit midwives to build upon their entry-level competencies within their statutory scope of practice.

EDUCATION, TRAINING AND PREPARATION

Individuals wishing to study nurse-midwifery or direct-entry midwifery may choose from among a number of nationally accredited education programs in the United States. As of late 1998, there were 46 ACNM-accredited or pre-accredited programs for educating nurse-midwives and 8 nationally accredited or pre-accredited programs for educating direct-entry midwives (ACNM Division of Accreditation, 1998; MEAC, 1998).[12] Descriptions of two direct-entry education programs, one operated by the Seattle Midwifery School and one by the State University of New York Health Science Center at Brooklyn, can be found in the sidebars below.

The Seattle Midwifery School

The Seattle Midwifery School (SMS) is a community-based non-profit organization, which has been preparing direct-entry midwives for independent practice since 1978. With over 130 graduates, the school has provided leadership in the establishment of state and national standards for professional midwifery. Graduates qualify for licensure in Washington, California, and most other states with licensing mechanisms.

Seattle Midwifery School requires that entering students are at least 21 years old, proficient in English, with a high school diploma or GED, 2 years of college or relevant women's health care experience, completion of a Doulas of North America-approved doula training,[13] and completion of college-level English, human anatomy and physiology, and math with at least a 3.0 grade point average.

The SMS curriculum was originally drawn from the long-standing tradition of direct-entry midwifery education in Denmark and The Netherlands, and now incorporates the core competencies adopted by the Midwives Alliance of North America and the skills required for certification by the North American Registry of Midwives. The three-year program includes four quarters of didactic instruction and five quarters of clinical training. Emphasis is placed on holistic, woman-centered care, normal pregnancy and birth, risk screening, and management of obstetric emergencies. Generally, external preceptorships are arranged for clinical training where

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12. Lists of accredited and pre-accredited nurse-midwifery and direct-entry midwifery programs can be found in appendices III and IV.
13. Doula: a woman who provides non-medical support during labor to the birthing mother. May also mean a woman who provides postpartum care.

(continued from page 24)

clinical training where students work under the supervision of one midwife in a home birth practice or birth center. Students may occasionally work under the supervision of a physician or other health care professional such as a nurse practitioner and may sometimes work in a hospital setting or clinic. Most students also take advantage of short-term placement opportunities in foreign sites where midwives typically provide care for women with a range of more complicated conditions (Seattle Midwifery School, 1997).

A retrospective study of Washington State birth certificate data, linked to infant death certificates, over a ten year period compared outcomes for out-of-hospital births attended by licensed midwives, most of them graduates of the Seattle Midwifery School, to outcomes for low-risk hospital births attended by physicians, and hospital births and out-of-hospital births attended by certified nurse-midwives (Janssen *et al.*, 1994). Examining outcome measures such as low birth weight, five-minute Apgar scores, and neonatal and postneonatal mortality, the investigators found no significant differences in outcomes other than licensed midwife-attended births having a significantly lower risk of low birth weight as compared to births attended by physicians. Another retrospective study found very low rates of poor outcomes among Medicaid women in Washington state who planned home births and received some or all of the prenatal care from Licensed Midwives (Cawthon, 1996).[14]

For information about how to contact the Seattle Midwifery School, see Appendix IV.

Midwifery programs, like all health profession education programs, face numerous challenges today. Changes in the way health care is delivered and funded demand that health profession educators evaluate their programs not only to update curricula and teaching methods but also to assess who they are educating.

Technological developments and research findings call for continual evolution of lesson content. Today, that evolution must include understanding and incorporating principles of "evidence-based" health care and training tomorrow's practitioners to provide culturally competent care. Faculty responsible for curriculum development must also address the information explosion and its impact on students and practitioners. It has been estimated

14. Any shortcomings of these studies due to the inherent problems of birth certificate data highlight the need for better data collection processes in the future (see research section).

ACNM Direct Entry Program of Midwifery Education

Over the past four decades, the State University of New York (SUNY) Health Science Center at Brooklyn (HSCB) Midwifery Education Program has graduated approximately one-sixth of all nurse-midwives certified by the American College of Nurse-Midwives. In 1995, SUNY HSCB entered a partnership with the North Central Bronx Hospital and jointly developed the first direct entry midwifery education program to be pre-accredited by the ACNM Division of Accreditation (DOA). The goal was to create a rigorous program of studies that would successfully prepare qualified non-nurses to enter the midwifery profession as safe and competent practitioners who could function just as effectively as their nurse peers.

During the 1996-97 academic year, five direct entry and 15 registered nurse students were admitted to SUNY HSCB. As required by the DOA, all direct entry students had successfully completed college level courses in biology, chemistry, microbiology, anatomy and physiology, pathophysiology, human development, psychology, sociology, epidemiology/statistics, and nutrition prior to admission. Each student had previously earned a bachelor's degree and one had a master's degree. Three supplementary courses, Basic Health Skills and Integrated Medical Sciences I and II, were created to assist the students to gain the knowledge and skills that nurses are expected to bring to nurse-midwifery education.

Except for the supplementary courses, the direct entry students complete all other course and clinical work alongside their nursing colleagues. The first class graduated in 1997. All successfully passed the ACNM Certification Council, Inc. (ACC) certification exam and are currently employed as certified midwives in New York. Results of the first of a series of research studies, designed for assessment of the Basic Health Skills course, found that direct entry students could acquire and demonstrate basic health skills at a level equivalent to their nurse classmates.

SUNY HSCB's second class of direct entry students graduated in July of 1998 and were eligible to sit for the ACC exam in November, 1998. In August of 1998, the third class of direct entry students commenced studies toward a Master of Science degree in midwifery; this brand new two-year program has been approved by both the New York State Education Department and SUNY Central and is presently being evaluated for full accreditation by the ACNM Division of Accreditation.

For information about how to contact the school and organizations discussed here, see appendices II and III.

that more than 7000 new articles are introduced into the medical literature every week (National Library of Medicine, 1998). Educators must teach midwives how to access and evaluate these new sources, including use of the Internet and software packages that can help manage the information.

Changes in institutional expectations and practice arrangements mean that future health care professionals will also be expected to master basic population based skills such as clinical epidemiology, biostatistics, and behavioral and political sciences. Professionals will need to understand how to use these skills for the communities or defined populations with whom health professions share responsibility for health outcomes. In addition, health care professionals

Boston University School of Public Health Nurse-Midwifery Program

The Boston University School of Public Health Nurse-Midwifery Education Program is an innovative Master of Public Health (MPH) degree program in which graduates are uniquely prepared to deal with challenges that face health professionals today, including caring for underserved populations within managed care organizations and other health care delivery systems. The Program was established in 1991 in direct response to two pressing public health needs within the local community: an unacceptably high infant mortality rate in communities of color and a lack of access to perinatal primary care providers for women and children (Paine *et al.*, 1995).

The 21-month curriculum meets all of the core competencies of an ACNM accredited nurse-midwifery program, and satisfies the requirements for the School's MPH degree with a Maternal and Child Health Concentration. Through the Program's combined clinical midwifery, public health, and MCH curricula students develop competency in the care of childbearing women and newborns, and in the primary care of women from adolescence through menopause (Paine *et al.*, 1995). Emphasis is also placed on development of the cultural competence skills necessary to care for vulnerable populations (Rorie *et al.*, 1996). Students develop an understanding of the behavioral and social issues facing populations of women and children, especially those affected by poverty, racism, and politics. They also develop an understanding of the organization of health care systems; public and private health services financing and access; policy issues from the consumer, provider, and policy-maker perspective; assessment and analysis of MCH health

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services using qualitative and quantitative methods; and analysis of the literature using epidemiologic methods and an evidence-based approach. Some students also elect to participate in a federally supported MCH Leadership Program in which they complete courses, seminars, and field studies designed to develop advanced skills in program management, policy, and research.

From the Program's onset an emphasis was placed on cultural diversity. A Minority Recruitment and Retention consultant has been available to faculty and students since the Program's inception and to date, 40% of graduates have been from communities of color. Recently, one faculty member developed a comprehensive student recruitment and retention program that has resulted in such initiatives as a scholarship fund for students whose financial needs are not easily met, and a student mentorship program. The Program's emphasis on primary care, cultural competence, and public health has been especially important to graduates, as over 90% now practice with medically and socially underserved populations. Two examples of graduate efforts to provide population-based services include initiation of a mammography screening program for inner-city African-American women, and development of a private practice that offers midwifery services to HIV-infected, drug addicted, and incarcerated women.

For information about how to contact the Boston University program, see Appendix III.

without a fundamental understanding of health care policy and financing, including managed care concepts, will likely be at a disadvantage. The Boston University description on page 27 provides an example of a program that has incorporated these skills into the curriculum.

Education programs are also being held accountable for the diversity of the people they recruit and educate. Diversity of faculty and student bodies is needed for reasons of equity and for improved access to culturally competent care. As the Pew Health Professions Commission has noted, "Not only would renewed commitment to diversity be the fairest way to accommodate all potential medical practitioners, it would be in the best interest of those parts of the population that bear the greatest burdens of poor health" (Pew, 1998). Like many professions in the United States, midwifery does not reflect the racial and ethnic composition of the nation's population and has considerable work to do, starting at the student recruitment level, to be successful in this arena (*See Table 1*).

Table 1: Racial & Ethnic Diversity of Midwives Compared to U.S. Population

	Asian/ Pacific Islander	Black/ African American	Hispanic/ Latina	American Indian/ Inuit	White	other	Not identified
US population 1995	3.3%	12.0%	10.2%	0.7%	73.6%	0	0
Certified Nurse Midwives (1996)	0.9%	4.0%	1.7%	0.1%	83.1%	10.2%	
Home birth midwives (1995)	1.9%	0.9%	1.7%	1.5%	90.9%	3.1%	2.6%

Sources: Day, 1996; Boggess, 1999; Wells, 1995.

Programs are also being asked to account for their enrollment and graduate figures in relation to current market demands. For midwifery, determining this demand is particularly challenging. No data are available to assess consumer demand for midwifery care, and it would be hard, if not impossible, to estimate the demand for a service or profession that many consumers do not know about and that has not been widely available. Defining the demand is also complex; although both midwives and physicians provide pregnancy-related care, midwifery is not just a substitute for medical obstetrics. The two professions provide different types of care and co-exist in many other countries as interdependent professions where both are necessary and neither is alone sufficient. This means that the U.S. may indeed have an abundance or oversupply of physicians as has been estimated by policy analysts (Institute of Medicine, 1996; Pew, 1995) and also have a shortage of midwives or of midwifery care.

38,000 obstetrician-gynecologists practice in the U.S. (Randolph, 1998). Jacoby and colleagues (1998) note that although managed care patterns may not be generalizable, comparison of obstetrician-gynecologist supply (2.7 ob-gyns/10,000 females in population) with managed care norms (2.1 ob-gyns/10,000 females) suggest a current oversupply of obstetrician-gynecologists. Nonetheless, the ratio of obstetrician-gynecologists to women in the population continues to increase.

Growth in the midwifery workforce has been steady but modest in terms of total numbers.[15] For example, although the production of new CNMs more than doubled

15. Nationally certified CNMs number an estimated 5700 (Moses, 1997); about 700 direct-entry-midwives are regulated in the 16 states that use regulation to permit DEMs to practice (see footnote 6 and accompanying text).

between 1992 and 1997, the total number of nurse-midwives newly certified in 1997 was less than 600 (ACNM Certification Council, 1998). Workforce expansion for nurse practitioners and physician assistants, two professions with which midwifery is often compared has been much more dramatic. From 1992 to 1997, the number of clinical nurse practitioner graduates grew from 1500 to 6350; the number of physician assistant graduates increased from 1360 to 2800 over the same period (Cooper *et al.*, 1998).

Due to cost constraints, demographics, and consumer requests, education programs are also being encouraged to try innovative methods of teaching and training to better meet the needs of the public. Midwifery has taken a lead on this front in a number of ways. The CNEP program *(see sidebar)* is an excellent example of a successful distance learning model. In the pursuit of interdisciplinary education, at least three universities (Columbia, Yale and Emory) provide opportunities for midwives to receive masters in public health (MPH) degrees in addition to basic midwifery education, and two (Boston

Community-Based Nurse-Midwifery Education Program

The Community-Based Nurse-Midwifery Education Program (CNEP) was piloted in 1989 in an effort to make nurse-midwifery education available to nurses who could not leave their communities to attend an academic program and to increase the number of nurse-midwives. In 1991, the Frontier School of Midwifery and Family Nursing officially adopted the program. Although the U.S. has almost 50 nurse-midwifery programs, CNEP is noteworthy not only for being one of the few distance learning programs, but also for alone having produced over 20% of the total number of nurse-midwives certified by the ACNM since 1991 (Gillmor, 1998; ACNM Certification Council, 1998).

CNEP is a self-paced distance-learning program that can be completed in approximately two years. Students make visits to the Frontier Nursing Service campus in Hyden, Kentucky, for an orientation and skills evaluations, course work is based on home study modules, and clinical experience is obtained with one-on-one supervision from a preceptor in or near the student's community. Students and faculty communicate through the Banyan Tree, an on-line bulletin board for the program, and computer support is provided by the school. Academic study precedes any clinical experience, and clinical experience requirements are double

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those recommended by the ACNM Division of Accreditation. Like all ACNM accredited programs, curricula are based on the ACNM core competencies, and students' clinical training must be approved by their preceptors. Training encompasses care during the maternity cycle, primary care, how to start a birth center, financial aspects of midwifery practice, and community assessment.

The CNEP program enrolls three to four classes per year, and more than 600 students graduated from it between 1991 and 1998. Graduates receive a certificate in nurse-midwifery and may apply their CNEP course credits towards either a master's of science in nursing (MSN) or doctor of nursing (ND) from the Frances Payne Bolton School of Nursing at Case Western Reserve University. CNEP graduates have a high pass rate on the certifying exam (96.5% first time pass rate), and are in high demand after graduation (Gillmor, 1998). As of 1995, 25 percent of CNEP students lived in and 35 percent of CNEP graduates worked in rural areas (Rooks, 1997 p. 169).

In addition to producing a high percentage of all newly certified nurse-midwives, CNEP has made it possible for nurses who want to become midwives but live and work in small towns to obtain the necessary education without moving. It has also introduced midwifery to many previously unserved parts of the country. Finally, because CNEP students must identify a nurse-midwifery practice willing to provide their clinical experience and precepting, many CNM practices have been brought into nurse-midwifery education for the first time.

For information about how to contact CNEP, see Appendix III.

University and the University of Puerto Rico) require the MPH as part of their basic midwifery programs.

Midwifery has decades of experience with competency-based education, a concept that some other professions are beginning to explore. The ACNM first published "Core Competencies for Basic Nurse-Midwifery Practice" in 1978, and has revised the document every five years. These competencies are the fundamental knowledge, skills and behaviors expected of a nurse-midwife upon entering practice. They "serve as the foundation that must be in place to develop and maintain a quality education program, and contribute to the blueprint to construct the certification exam" (Williams and Kelley, 1998). MANA has also developed a set of "Core Competencies for Basic Midwifery Practice" (MANA, 1994).

The Seattle Midwifery School is an example of a successful direct entry, competency-based education program *(see sidebar on page 24)*.

Midwifery has also had a tradition of community-based education that can serve as a model for other professions. However, recent developments may threaten some community-based education for midwives. For example, the downsizing of hospitals has made ambulatory and community-based sites more attractive to medical residency programs, effectively limiting the number of sites available to midwives for their clinical experience.

In other areas, midwifery education could be more innovative. For example, the potential for educational partnerships between college- and university-based programs and direct-entry midwifery programs that are located outside of academic settings has not been fully explored.

The financing of midwifery education is largely borne by students; federal, state and other subsidies are limited, particularly relative to medical education subsidies. Moreover, federal funding is only available for nurses studying midwifery. Many private sector health care systems and public sector entities have not yet fully recognized the importance of investing in the development of the midwifery profession by providing for example, financial support for educational institutions and training sites or support for students through scholarships.

RECOMMENDATIONS

for EDUCATION

Midwifery education not only provides students with the academic and clinical expertise they need to provide care; it also serves as the pipeline of professionals to practice settings. The current evolution of health care will mean a shift in orientation for educators from a supply-driven perspective to one driven by demand. It will also mean a shift in the way health care professionals are educated. The following recommendations will challenge educators to continue to develop faculty, programs, curricula and recruitment policies to meet consumer demands in a changing health care arena.

8. Education programs should provide opportunities for interprofessional education and training experiences and allow for multiple points at which midwifery education can be entered. This requires proactive intra- and interprofessional collaboration between colleges, universities and education programs to develop affiliations and complementary curriculum pathways.

9. Midwifery education programs should include training in practice management, and the impact of health care policy and financing on midwifery practice, with special attention to managed care.

10. The profession should recognize and acknowledge the benefits of teaching the midwifery model of care in a variety of education programs and affirm the value of competency-based education in all midwifery programs.

11. The midwifery profession should identify, develop and implement mechanisms to recruit student populations that more closely reflect the U.S. population and include cultural competence concepts in basic and continuing education programs.

RESEARCH

Research efforts to date have found that midwifery makes a positive contribution to the health of women and their babies. Studies demonstrate, for example, that nurse-midwifery care can result in as good or better outcomes as compared with medical obstetrical care and do so with less technical intervention.[16] Policy makers, regulators, hospitals and health plan administrators should avail themselves of the existing data, findings and analysis. At the same time, midwifery research must continue to evolve not only to continue to improve professional practice but also to support full incorporation of the profession into the health care system and to objectively assess outcomes as this integration occurs.

Outcomes from the San Diego Birth Center Study *(Jackson et al., 1998)*

Preliminary Data

Background: The search for quality, cost-effective health care programs in the U.S. is a major focus of managed care. The San Diego Birth Center Study evaluated the safety, care and patient satisfaction of a collaborative model of nurse-midwives working with obstetricians with use of a freestanding birth center for delivery of low-risk women (collaborative model). This model was compared to the traditional U.S. perinatal care model in which physicians are the primary providers and all births occur in hospitals.

Methods: A prospective comparison cohort study was conducted (final sample approximately 1850 birth center and 1150 traditional care subjects) from 1994 to 1997. Baseline comparability was established using a validated methodology to determine perinatal risk and birth center eligibility. Data collection was by medical record abstraction and patient questionnaires. Costs were compared using a resource utilization methodology.

Results: Results suggest similar maternal (indicated by serious intrapartum complications on chart below) (See Table 2) and neonatal morbidity (indicated by low birth weight, preterm delivery and NICU admissions) in the two groups, with lower rates of cesarean section and

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16. Oakley et al., 1995; Oakley et al., 1996; Gabay & Wolfe, 1997; Turnbull et al., 1996; Brown & Grimes, 1995; Renfrew, 1992; Rosenblatt et al., 1997; MacDorman & Singh, 1998. For a review of much of the research in this area, see also Rooks, 1998, chapter ten: The Quality, Safety, and Effectiveness of Midwifery as Practiced in the United States.

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assisted delivery in the collaborative model. The costs to the payor were 17-21% less per delivery in the collaborative model; the largest savings were attributed to fewer hospital day charges, fewer cesarean sections, and fewer babies sent to the neonatal intensive care units for evaluation for three days or less. Overall patient satisfaction scores were similar, with 76% of the collaborative model patients giving their care the highest possible rating and 77% of the traditional model patients giving their care the highest possible rating.

Conclusions: Study results support the safety, cost-effectiveness and patient acceptability of a collaborative management/freestanding birth center model for inclusion in managed care programs.

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Some of the more noteworthy reviews include one done by the U.S. Office of Technology Assessment which reviewed published data on the safety and effectiveness of nurse-midwifery care and concluded that nurse-midwives manage routine pregnancies safely and as well as, if not better than, physicians (OTA, 1986). A 1995 meta-analysis of nine studies compared the outcomes of care provided by CNMs and physicians. Although many differences in care were found, there were relatively few differences in outcomes. The most important difference in outcomes was a reduced low birth weight rate for babies born to women whose prenatal care was provided by nurse-midwives (Brown and Grimes, 1995).

Table 2: Selected Outcomes from the San Diego Birth Center Study*

OUTCOME	COLLABORATIVE**	TRADITIONAL***	ADJ. RD****
Serious Intrapartum Complications	16.3%	16.8%	-2.7%
Low Birth Weight (<2500 grams)	4.0%	4.8%	-0.4%
Preterm Delivery (<37 weeks)	6.0%	5.8%	-0.2%
NICU Admission (>3 days)	6.4%	6.4%	-0.9%
Normal Spontaneous Vaginal Delivery	80.5%	64.0%	+13.2%
Assisted Delivery	8.5%	17.5%	-6.1%
Cesarean Delivery	11.0%	18.4%	-7.1%

* Preliminary results based on 90% of final sample

** Collaborative model of nurse-midwives working with obstetricians with use of a freestanding birth center for delivery of low-risk women

*** Traditional U.S. perinatal care model in which physicians are the primary providers and all births occur in hospitals.

**** Rate difference adjusted for maternal education (statistically significant differences are bolded)

As noted above in the section on practice, one current study of interest to the midwifery community is the one being conducted at the San Diego Birth Center (Jackson *et al.*, 1998). This study compares a collaborative model of nurse-midwives working with obstetricians at a freestanding birth center to traditional perinatal care by doctors and nurses at hospitals. (*See the sidebar on page 34 and Table 2 for a full description and preliminary results*.)

A significant development that affects research is the move to evidence-based practice, which extends to all health professions. Although still in its infancy in the U.S., the movement is exemplified by such projects as The Cochrane Library *(see sidebar)*. Today the Library includes a number of disciplines and specialties but the project began specifically in response to the lack of using research findings as a basis for obstetric practice. Excerpts from the results of this effort to collect information from randomized controlled trials of perinatal care and

Cochrane Library

In 1979, Archie Cochrane, a British physician and epidemiologist, gave the "wooden spoon award" to the specialty of obstetrics for that field's lack of the use of findings from randomized, controlled trials as a basis for obstetrical practice. Named in his honor, the Cochrane Library was designed to make comprehensive information about the effects of health care practices more readily available to researchers and care providers, facilitating evidence-based practice decisions. It includes systematic reviews by Cochrane collaborators from around the world, abstracts of systematic reviews by other authors, and a bibliography of controlled trials. The database currently contains over 600 systematic reviews of health care practices pertaining to pregnancy and childbirth alone. Systematic reviews are conducted following a precise, standardized format, and all clinical trials included are rated on the quality of the study design. All additions to the database are peer reviewed. The database is updated on a quarterly basis. Reviews by Cochrane collaborators address and incorporate comments from readers on the methodology, strengths and weaknesses of the reviews, strengthening the peer review process by continuing it after the original publication of a review. The bibliography of controlled trials and systematic reviews by Cochrane collaborators include trials from most developed countries, trials published in English and other languages, and unpublished trials the group has located.

For information on how to access the Cochrane Library, see Appendix II.

evidence regarding current labor and birth practices can be found in Appendix I. Of particular note, the Cochrane review process has identified midwifery care of low-risk women as a form of care that is likely to be beneficial, and involving doctors in the care of all women during pregnancy and birth as a form of care that is unlikely to be beneficial (Enkin *et al.*, 1995).

Of particular importance to midwives are studies about the effectiveness of specific aspects of prenatal, intrapartum and postpartum care when applied to low-risk women. Convincing evidence shows that appropriately educated midwives can obtain the same or better outcomes as physicians with less use of interventions when caring for low-risk women. Numerous studies have found that CNMs have improved outcomes for babies born to women at risk for having low birth weight babies or pre-term births.[17] For examples of outcomes studies of direct-entry midwives, see the sidebar on the Seattle Midwifery School in the Education section above.

However, research still lags in several areas. These include meta-analyses on efficacy of midwifery care in various settings in the United States, more extensive data on direct-entry midwifery care outcomes, studies on what kinds of care women want, better studies of satisfaction with maternity care, and better economic analyses.

To date, comparative studies of midwives and physicians have focused largely on differences in practice philosophy, processes, outcomes, and costs of care. No national studies have focused on the clinical services provided or populations served by physician-midwife teams, despite substantial documentation of their having worked together since the 1930's. Comparative national data collection for physician and midwife teams would make possible such analysis. Aided by current routine national data collection, health services research is frequently conducted on physicians through the annual National Ambulatory Medical Care Survey (Schappert, 1998) and other datasets. Ensuring that similar information be made available about midwives will require major initiatives on the part of policymakers and the associated government agencies.

Researchers also need to describe how midwifery care differs from the medical model in terms of what *is* done instead of what is *not* done. Most studies to date have focused on medical interventions, so midwifery has been described as care that uses fewer interventions; this is not a substitute for describing what is done, what is done differently, and measuring the effectiveness of specific midwifery methods.

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17. McAnarney et al., 1978; Doyle and Widhalm, 1979; Chanis et al., 1979; Corbett and Burst 1983; Beal, 1984; Piechnik and Corbett, 1985; Brucker and Muellner, 1985; Ellings et al., 1993; Levy et al.,1971; Heins et al., 1990; Bryce et al., 1991.

Some examples of research that has been done on elements of midwifery care include the use of the auscultated acceleration test *(see sidebar below)*, the effects of walking during labor (Albers *et al.*, 1997; Bloom *et al.*, 1998), the benefits of providing consistent support to women throughout labor and delivery (Sosa *et al.*, 1980; Klaus *et al.*, 1986; Kennell *et al.*, 1991), the effects of instructed versus spontaneous bearing down during labor (Yeates and Roberts, 1984), and most recently, the use of the all-fours position, or Gaskin maneuver for reducing shoulder dystocia during labor (Bruner *et al.*, 1998).

Auscultated Acceleration Test (AAT)

The presence of fetal heart rate (FHR) accelerations is a well-known indicator of fetal well being, and the electronic non-stress test (NST) remains the most widely used method for detecting FHR accelerations prior to birth. For well over a decade time-saving and economical alternatives to the NST have been studied by midwives and their colleagues as advantageous methods for the screening of low-risk women and for use in settings where technology and resources are limited (Gegor *et al.*, 1991). One such method, the auscultated acceleration test (AAT), is performed using a basic method of FHR auscultation via a simple, inexpensive fetoscope that costs $25-60, whereas the NST is performed via an electronic fetal monitor that costs several thousand dollars.

Paine and her multidisciplinary research team have described the development of the AAT and compared its validity to the NST in several reports since 1986 (Paine *et al.*, 1986a; Paine *et al.*, 1986b; Paine *et al.*, 1988). In their most notable study, the team compared the 6-minute AAT and the NST in prediction of perinatal outcomes and found that the AAT predicted poor perinatal outcomes more accurately than the NST (Paine *et al.*, 1992). These studies, designed and conducted by midwives, used a wide range of providers as data collectors, including midwives, nurses, students, community health workers, and physicians.

The AAT studies conducted in the U.S. by Paine and colleagues have been replicated nationally (Daniels and Boehm, 1991) and internationally (Mahomed *et al.*, 1992; Wu, 1991) demonstrating that the AAT is a promising low-tech, low-cost midwifery method that has distinct potential for world-wide application.

Recent evaluations of medically-oriented prenatal care challenge the benefits and cost-effectiveness of much of the care that has been provided to women during pregnancy (Kogan *et al*., 1998; Wise *et al*., 1995). Additional research needs to be done regarding the efficacy of, and satisfaction with, that same care and of midwifery care. As with all health care, midwifery practices need to be objectively evaluated from an evidence-based perspective and the results incorporated into practice.

National Data Collection about Midwives

For decades, midwives have been strongly recommended as important members of the health care team. Until 1991, however, when ACNM conducted the first prospective national study about nurse-midwives, little was known about the magnitude of their practice or the characteristics of the populations CNMs served. ACNM's important study, *Nurse-Midwifery Care for Vulnerable Populations in the United States,* funded in part by the Robert Wood Johnson Foundation, concluded that:

- Nurse-midwives make a substantial contribution to the care of women and infants in the U.S., with an estimated 5.4 million visits made in 1991 alone (Paine *et al*., 1999)
- Nurse-midwives make a considerable contribution to the underserved (Scupholme *et al*., 1992), with 7 of 10 annual visits being made by women or infants who had demographic characteristics associated with poor access or outcomes (ACNM, 1994; Paine *et al*., 1999).
- Prevention oriented ambulatory care (for both pregnant and non-pregnant women) con-stitutes the majority of patient visits made to CNMs (ACNM, 1994; Scupholme *et al*., 1994).
- The single best predictor of the distribution and practice activity of CNMs was the degree to which the regulatory and reimbursement environment of a state facilitated or restricted CNM practice (Declercq *et al*., 1998).

Findings from this study do not support the notion that nurse-midwives provide services only for women who can afford childbirth "alternatives" (Paine *et al*., 1999). This perception, and its opposite but corollary–that CNMs may serve as substitutes for physicians to care for poor populations–may have been reinforced by the fact that the only routinely gathered

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national data about all types of midwifery practice has been derived from birth certificates (e.g. Ventura *et al.*, 1998; Clarke *et al.*, 1997), which limits understanding about midwifery practice to childbirth events. Until 1989, the birth certificate inappropriately combined all types of out-of-hospital births (including birth center and home births) (Declercq, 1993). In addition, birth certificates do not capture the implications of transfers and referrals of patients from one professional to another, due to complications, before the delivery.

ACNM is conducting a *1998 Nurse-Midwifery Practice Survey* to follow up the 1991 study. This study will collect data to allow for a comparison between the practice of nurse-midwifery in the pre- and post- managed care scenarios (1991 v. 1998). However, the continued lack of comprehensive national data collection about midwives and the focus of ACNM's studies being limited to CNMs will perpetuate knowledge gaps about midwifery practice and midwives (CNMs, CMs, CPMs and midwives without national certification).

"Will expansion of managed care lead to increased supply and use of certified nurse-midwives (CNMs)?"

This is the question Heather Hartley, doctoral candidate in the Department of Sociology at the University of Wisconsin-Madison, addresses in her recent research, *The Influence of Managed Care on Supply of Certified Nurse-Midwives* (Hartley, 1999). Changes brought by managed care may create a possible opening for non-physician providers, including CNMs; however, continuing physician influence may push managed care organizations to favor physician interests.

Hartley's study uses the case of CNMs to understand trends in the restructuring of health care delivery and financing and general changes in medicine's jurisdictional boundaries. She used weighted least squares regression analysis to determine factors that influence the supply of CNMs at the state level and to assess the role of managed care, generalist and specialist physician supply, and state policy in those supply patterns. Results of the analysis suggest that the expansion of managed cares promises to alter the jurisdictional boundaries among the health professions, eroding the dominance of physicians while creating new openings for CNMs, and that changes in state policy and changes in health care delivery and financing are working in tandem to increase the supply of CNMs.

RECOMMENDATIONS

for RESEARCH

The field of health professions research must continually grow and evolve in order to make its necessary contributions to health care. As with other professions, critical midwifery workforce and practice data remain to be gathered and analyzed. In some cases, relatively minor shifts in focus will result in useful information. Other recommendations will require a significant policy reorientation, creativity or infusion of financial or academic support to realize results.

12. Midwifery research should be strengthened and funded in the following areas:
    - Demand for maternity care, demand for midwifery care, and numbers and distribution of midwives;
    - Analyses of how midwives complement and broaden the woman's choice of provider, setting, and model of care;
    - Cost benefit, cost-effectiveness, and cost utility analyses, including the relationship between knowledge of economic/cost analyses and provider practices;
    - Midwifery practice and benchmarking data (among midwives) with a goal of developing appropriate productivity standards;
    - Descriptions and outcome analyses of midwifery methods and processes;
    - Analysis of midwifery practice outcomes, from pre-conception through infancy, using an evidence-based perspective;
    - Normal pregnancy, normal labor and birth, healthy parent-infant relationships, and breastfeeding; and
    - Satisfaction with maternity and midwifery care.

13. Federal and state agencies should broaden systematic data collection, which has traditionally focused on medicine and physicians, to include midwifery and midwives.

POLICY

Some of the most pressing issues regarding midwifery go beyond the current scope of state regulators, professional associations, educators and practice settings. They call for an overarching plan or course of action that can be developed with an objective eye.

Primary among these issues is workforce supply and demand. Changing health care delivery systems and increased competition have highlighted oversupplies of some professions (Institute of Medicine, 1996; Pew, 1995). The profession of midwifery has grown steadily but is still quite small relative to other professions with which it is often compared (Cooper *et al.*, 1998). At the same time, as discussed in more detail in the research section above, defining and measuring demand for midwifery services remain elusive goals.

The section on regulation and credentialing notes that differences in laws and regulations across the states are problematic for midwives, other professionals, employers and consumers. These interstate differences will by nature be difficult to resolve at the state level.

Similarly, the sources and administration of funds for research endeavors, and education and training of midwives have not been adequately reviewed or coordinated by an entity that can focus on the needs of the public and consider funding for midwives within the larger context of funding for all health care professions.

Finally, federal policies and programs that affect midwives require consideration and coordination. These programs include the Maternal and Child Health Bureau, the Bureau of Health Professions, the Health Care Financing Administration, the Department of Defense, Indian Health Services, and rural health programs among others.

An already existing body, external to the profession, is best positioned to address and offer objective guidance on these concerns.

RECOMMENDATION

for POLICY

14. A research and policy body, such as the Institute of Medicine, should be requested to study and offer guidance on significant aspects of the midwifery profession including:
    - Workforce supply and demand;
    - Coordination of regulation by the states;
    - Funding of research, education and training; and
    - Coordination among the federal agencies whose policies affect the practice of midwifery.

CONCLUSION

Midwifery's many strengths and contributions have not been fully utilized to meet today's health care needs. To fully integrate midwifery into U.S. health care, midwives need to be prepared to practice in the new environments, consumers need to be educated so they can make informed choices about their practitioners, and managed care organizations need to develop the means to gather and analyze relevant data in order to provide health care that meets the needs of clients while maintaining profits. As described above, legislators, policy makers and researchers will also play important roles in fulfilling the promise midwifery holds for consumers.

The next decade will be a period of dynamic experimentation in health care and how it should be delivered and managed. Such a dynamic time presents an opportunity for the midwifery profession. The Taskforce on Midwifery trusts that this report, with its recommendations, will ultimately benefit women and their families through increased access to midwives and the midwifery model of care.

APPENDIX I

Evidence-Based Findings Regarding Selected Maternity Care Practices Based on Benefits or Potential for Harm

Excerpted from *A Guide to Effective Care in Pregnancy and Childbirth,* 2d edition, by Murray Enkin *et al.*, 1995. Reprinted by permission of Oxford University Press.

Note: These findings are not exclusive and are presented as examples only. These tables should not be relied upon alone for clinical practice.

Table 1: Beneficial Forms of Care

Effectiveness demonstrated by clear evidence from controlled trials:

- Emotional and psychological support during labor and birth.
- Maternal mobility and choice of position in labor.
- Free mobility during labor to augment slow labor.
- Consistent support for breastfeeding mothers.
- Unrestricted breastfeeding.

Table 2: Forms of Care Likely to be Beneficial

The evidence in favor of these forms of care is not as firmly established as for those in table 1:

- Midwifery care for women with no serious risk factors.
- Respecting women's choice of companions during labor and birth.
- Respecting women's choice of place of birth.
- Giving women as much information as they desire.
- Change of mother's position for fetal distress in labor.
- Woman's choice of position for the second stage of labor or giving birth.
- Maternal movement and position changes to relieve pain in labor.
- Counter-pressure to relieve pain in labor.
- Superficial heat or cold to relieve pain in labor.
- Touch and massage to relieve pain in labor.
- Attention focusing and distraction to relieve pain in labor.
- Music and audio-analgesia to relieve pain in labor.
- Encouraging early mother-infant contact

Table 3: Forms of Care With a Trade-Off Between Beneficial and Adverse Effects

Women and caregivers should weigh these effects according to individual circumstances and priorities:

- Continuity of care for childbearing women.
- Routine early ultrasound.
- Induction of labor for prelabor rupture of membranes at term
- Continuous EFM plus scalp sampling versus intermittent auscultation during labor.
- Narcotics to relieve pain in labor.
- Epidural analgesia to relieve pain in labor.
- Prophylactic antibiotic eye ointments to prevent eye infection in the newborn

Table 4: Forms of Care of Unknown Effectiveness

There are insufficient or inadequate quality data upon which to base a recommendation for practice:

- Immersion in water to relieve pain in labor.
- Acupuncture to relieve pain in labor.
- Aromatherapy to relieve pain in labor.
- "Active management" of labor.

APPENDIX I — *(continued)*

Evidence-Based Findings Regarding Selected Maternity Care Practices Based on Benefits or Potential for Harm

Excerpted from *A Guide to Effective Care in Pregnancy and Childbirth,* 2d edition, by Murray Enkin *et al.*, 1995. Reprinted by permission of Oxford University Press.

(continued from page 45)

Table 5: Forms of Care Unlikely to be Beneficial

The evidence against these forms of care is not as firmly established as for those in Table 6:

- Routinely involving doctors in the care of all women during pregnancy.
- Routinely involving obstetricians in the care of all women during pregnancy and child birth.
- Not involving obstetricians in the care of women with serious risk factors.
- Routine withholding food and drink from women in labor.
- Routine intravenous infusion in labor.
- Face masks during vaginal examinations.
- Frequent scheduled vaginal examinations during labor.
- Routine directed pushing during the second stage of labor.
- Pushing by sustained bearing down during second stage of labor.
- Breath-holding during the second stage of labor.
- Early bearing down during the second stage of labor.
- Arbitrary limitation of the duration of the second stage of labor.
- "Ironing out" or massaging the perineum during the second stage of labor.

Table 6: Forms of Care Likely to be Ineffective or Harmful

Ineffectiveness or harm demonstrated by clear evidence:

- Routine pubic shaving in preparation for delivery.
- Electronic fetal monitoring without access to fetal scalp sample during labor.
- Rectal examinations to assess labor progress.
- Requiring a supine (flat on back) position for second stage of labor.
- Routine use of the lithotomy position for the second stage of labor.
- Routine restriction of mother-infant contact
- Routine nursery care for babies in hospital.
- Samples of formula for breastfeeding mothers.

APPENDIX II

Contact Information for Organizations Described in the Report

American College of Nurse-Midwives
Deanne Williams, CNM, MS, FACNM
Executive Director
818 Connecticut Ave NW Suite 900
Washington, DC20006
(202) 728-9860
http://www.midwife.org

ACNM Certification Council, Inc.
Carol Howe, PhD
President
8401 Corporate Drive, Suite 630
Landover, MD 20785
(301) 459-1321

ACNM Division of Accreditation
Helen Varney Burst, CNM, MSN
818 Connecticut Ave., NW, Suite 900
Washington, DC 20006
(202) 728-9860

Athena Women's Health
One Moody Street
Waltham, MA 02154
(781) 642-8800

Group Health Cooperative of Puget Sound
521 Wall Street
Seattle WA 98121
Customer service: (206)901-4636
1(888)901-4636
public relations: (206) 448-6135
http://www.ghc.org

Midwifery Education Accreditation Council
Mary Ann Baul
Executive Director
220 W. Birch
Flagstaff, AZ 86001
(520) 214-0997

Midwives Alliance of North America
Signe Rogers
Secretary
PO Box 175
Newton, KS 67114
(316) 283-4543
http://www.mana.org

North American Registry of Midwives
Public Education
Ida Darragh
4322 Country Club
Little Rock, AR 72207
(888) 842-4784
cpminfo@aol.com

Cochrane Collaboration
http://www.update-software.com/ccweb/default.html
Additional information can be obtained from the following Cochrane centers:

San Francisco Cochrane Center
Drs. Lisa Bero and Drummond Rennie
Directors
San Francisco Cochrane Center
Institute for Health Policy Studies
University of California
3333 California Street, Suite 420
San Francisco, CA 94118
(415) 476-1067
sfcc@sirius.com

San Antonio Cochrane Center
Dr. Cynthia Mulrow
Director
VA Cochrane Center at San Antonio
Audie L Murphy Memorial
Veterans Hospital
7400 Merton Minter Blvd. (11C6)
San Antonio, TX 78284
(210) 617-5190
lmorgan@merece.uthscsa.edu

Cochrane Pregnancy and Childbirth Group
Mrs. Sonja Henderson
Coordinator
The Liverpool Women's Hospital NHS Trust
Crown Street
Liverpool UK L8 7SS
Phone: +44 151 702 4066
sonjah@liverpool.ac.uk

APPENDIX III

ACNM Accredited and Pre-accredited Programs (as of 12/98)

NB: Some programs have dual degree options (e.g. dual nursing and public health degrees). Please contact individual programs to find out more about dual degree options.

Key to degrees offered:
MS- Master of Science
MN- Master of Nursing
MSN- Master of Science in Nursing
MA- Master of Arts
MPH- Master of Public Health
PhD- Doctor of Philosophy
ND-Doctor of Nursing

Baylor College of Medicine
Nurse-Midwifery Education Program
Department of OB/GYN
6550 Fannin, Suite 901
Houston, TX 77030
(713) 798-7594, 793-2813
Susan M. Wente, CNM, MPH, DrPH,
Program Director
Accreditation period: review in 1999
MS

Baystate Medical Center
Nurse-Midwifery Education Program
Division of Midwifery and Community Health
89 Chestnut Street
Springfield, MA 01199
(413) 784-4448
Barbara Graves, CNM, MN, MPH,
Program Director
Accreditation period: review in 1999
Certificate program

Boston University
School of Public Health
Nurse-Midwifery Education Program
Department of Maternal and Child Health
715 Albany Street; T5W
Boston, MA 02118
(617) 638-5012
Mary Barger, CNM, MPH, FACNM,
Program Director
Accreditation period: review in 1999
MPH, post MPH certificate

Case Western Reserve University
Frances Payne Bolton School of Nursing
Nurse-Midwifery Program
10900 Euclid Avenue
Cleveland, OH 44106-4904
(216) 368-2532
Marcia Riegger, CNM, MSN,
Program Director
Accreditation period: review in 1999
MS, ND

Charles R. Drew University of Medicine and Science
Nurse-Midwifery Education Program
College of Allied Health Sciences
1621 East 120th Street
Los Angeles, CA 90059
(213) 563-4951
H. Frances Hayes-Cushenberry, CNM,
MSN, JD, Program Director
Accreditation period: review in 2003
MS, masters completion option

Columbia University
Graduate Program in Nurse-Midwifery
School of Nursing
630 West 168th Street
New York, NY 10032
Applicant information: (212) 305-5756
(212) 305-3418, 2808
Jennifer Dohrn, CNM, MS, CNP, Program
Director
Accreditation period: review in 2004
MS, masters completion option, post masters certificate

East Carolina University
Nurse-Midwifery program
School of Nursing
Greenville, NC 27858-1818
(919) 328-4298
Nancy Moss, CNM, PhD, Program Director
Accreditation period: review in 2006
MSN, post masters certificate

Emory University
Nell Hodgson Woodruff School of Nursing
Atlanta, GA 30322
(404) 727-6918
Maureen Kelley, CNM, MSN, PhD, FACNM,
Program Director
Accreditation period: review in 2005
MSN, post masters certificate

Frontier School of Midwifery and Family Nursing
Community-Based Nurse-Midwifery Education Program (CNEP)
PO Box 528
Hyden, KY 41749
(606) 672-2312
Susan Stone, CNM, MSN, Program Director
Accreditation period: review in 2005
Certificate program, masters completion option

Georgetown University
School of Nursing
Graduate Program in Nurse-Midwifery
3700 Reservoir Road, NW
Washington, DC 20007
(202) 687-4772
Ann Silvonek, CNM, MS,
Interim Program Director
Accreditation period: review in 2003
MS, masters completion option, post masters certificate

Institute of Midwifery, Women and Health
Room 222 Hayward Hall
Schoolhouse Lane and Henry Avenue
Philadelphia, PA 19144
(215) 843-5775
Jerrilyn Hobdy, CNM, MS, Program Director
Accreditation period: pre-accredited
Certificate program

Marquette University
College of Nursing
Nurse-Midwifery program
PO Box 1881
Milwaukee, WI 53201-1881
(414) 288-3842
Leona VandeVusse, CNM, PhD,
Program Director
Accreditation period: review in 2001
MSN, post masters certificate

Medical University of South Carolina
Nurse-Midwifery Program
College of Nursing
171 Ashley Avenue
Charleston, SC 29425-0100
(803) 792-2051
Deborah Williamson, CNM, MS,
Interim Program Director
Accreditation period: review in 2003
MSN, masters completion option, post masters certificate

New York University
Nurse-Midwifery Education Program
50 West 4th Street
429 Shimkin Hall
New York, NY 10012
(212) 998-5895
Patricia Burkhardt, CNM, DrPH,
Program Director
Accreditation period: review in 2003
MA, post masters certificate

Ohio State University
Nurse-Midwifery Graduate Program
College of Nursing
1585 Neil Avenue
Columbus, OH 43210-1289
(614) 292-4041, 688-4461
Nancy K. Lowe, CNM, PhD,
Program Director
Accreditation period: pre-accredited
MS

Oregon Health Sciences University
School of Nursing
Nurse-Midwifery Program
3181 SW Sam Jackson Park Road
Portland, OR 97201
(503) 494-3114, 3822
Carol Howe, CNM, DNSc, FACNM,
Program Director
Accreditation period: review in 2003
MS, MN, post masters certificate

Parkland School of Nurse-Midwifery
Parkland Memorial Hospital
University of Texas SWMC at Dallas
MS 6107A
5201 Harry Hines Boulevard
Dallas, TX 75235
(214) 590-2580
Mary C. Brucker, CNM, MSN, DNSc,
Program Director
Accreditation period: review in 2004
Certificate program, masters completion option

San Diego State University/
University of California, San Diego
Nurse-Midwifery Program
UCSD School of Medicine
Division of Graduate Nursing Education
9500 Gilman Drive
La Jolla, CA 92093-0809
(619) 543-5480
Lauren Hunter, CNM, MS, Interim Program Director
Accreditation period: review in 2003
MS

Shenandoah University
Nurse-Midwifery Education Program
Division of Nursing
1775 N. Sector Court
Winchester, VA 22601
(540) 678-4374
Juliana Fehr, CNM, MS, Program Director
Accreditation period: pre-accredited
MSN

State University of New York
Health Science Center at Brooklyn
College of Health Related Professions
Midwifery Education Program
Box 1227, 450 Clarkson Avenue
Brooklyn, NY 11203
(718) 270-7740, 7741
Lily Hsia, CNM, MS, FACNM,
Program Director
Accreditation period: review in 1999
Certificate program, masters completion option
Accreditation period: pre-accredited
Midwifery (CM) program

State University of New York at Stony Brook
School of Nursing
Health Sciences Center
Pathways to Midwifery
Stony Brook, NY 11794-8240
(516) 444-2879
Ronnie Lichtman, CNM, PhD,
Program Director
Accreditation period: review in 1999
MS, post masters certificate

University of California, Los Angeles
UCLA School of Nursing
Nurse-Midwifery Education
Factor Building, Room 5934A
Box 956919
Los Angeles, CA 90095-6919 NU96
(310) 794-9291
Mary Day, CNM, FNP, MSN,
Program Director
Accreditation period: review in 2003
MSN, post masters certificate

University of California, San Francisco
San Francisco General Hospital
Interdepartmental Nurse-Midwifery Education Program
SFGH, Ward 6D, Room 21
1001 Potrero Avenue
San Francisco, CA 94110
(415) 206-5106
Linda Ennis, CNM, MS, Program Director
or
UCSF School of Nursing
Department of Family Health Care Nursing
N411X, Box 0606
San Francisco, CA 94143-0606
(415) 476-4694
Jeanne DeJoseph, CNM, PhD, FAAN,
Program Co-Director
Accreditation period: review in 2002
MS, certificate program, masters completion option, post masters certificate

University of California,
San Francisco/University of California,
San Diego
Intercampus Graduate Studies
Contact SDSU/UCSD address & contact OR
UCSF School of Nursing, Jeanne DeJoseph
Accreditation period: review in 2004
MS, post masters certificate

University of Cincinnati
Nurse-Midwifery Education Program
College of Nursing and Health
3110 Vine Street, ML 0038
Cincinnati, OH 45221
Applicant information: (513) 558-5380
(513) 558-5282
Mary Carol Akers, CNM, MSN, DNSc,
Program Director
Accreditation period: pre-accredited
MSN

University of Colorado
Health Sciences Center
School of Nursing
Box C288-14
Nurse-Midwifery Option
4200 East 9th Avenue
Denver, CO 80262
(303) 315-8654
Laraine Guyette, CNM, PhD,
Program Director
Accreditation period: review in 1999
MS

University of Florida
Health Sciences Center, Jacksonville
Nurse-Midwifery Program
College of Nursing
653 West 8th Street Building 1, 2nd Floor
Jacksonville, FL 32209-6561
(904) 549-3245
Alice H. Poe, CNM, MN, Program Director
Accreditation period: review in 2003
MSN, MN, post masters certificate

University of Illinois at Chicago
College of Nursing M/C 802
Nurse-Midwifery Program
845 South Damen Avenue
Chicago, IL 60612
(312) 996-7937
Janet Engstrom, CNM, PhD, Program
Director
Accreditation period: review in 2003
MS, PhD, post masters certificate

University of Medicine
and Dentistry of New Jersey
School of Health Related Professions
Nurse-Midwifery Program
65 Bergen Street
Newark, NJ 07107-3001
(973) 972-4249, 4298
Elaine Diegmann, CNM, MEd, ND, FACNM,
Program Director
Accreditation period: review in 2002
Certificate program, masters completion option

University of Miami
School of Nursing
5801 Red Road
PO Box 248153
Coral Gables, FL 33124-3850
(305) 284-6256
Virginia Crandall, CNM, MSN, Interim
Program Director
Accreditation period: review in 2004
MSN

University of Michigan
Nurse-Midwifery Program
School of Nursing
400 N. Ingalls, Room 3320
Ann Arbor, MI 48109
(313) 763-3710
Deborah Walker, CNM, DNSc,
Program Director
Accreditation period: review in 2006
MS, post masters certificate, PhD

University of Minnesota
School of Nursing
6-101 Weaver-Densford Hall
308 Harvard Street, SE
Minneapolis, MN 55455
(612) 624-6494
Melissa Avery, CNM, PhD,
Program Director
Accreditation period: review in 2002
MS, PhD, post master's certificate

University of Missouri at Columbia
Sinclair School of Nursing
Nurse-Midwifery Program
Columbia, MO 64211
(573) 882-0235
Donna Scheideberg, CNM, PhD,
Program Director
Accreditation period: review in 2003
MS, post masters certificate

University of New Mexico
College of Nursing
Nurse-Midwifery Program
Albuquerque, NM 87131-1061
(505) 272-1184
Barbara A. Overman, CNM, PhD,
Program Director
Accreditation period: review in 1999
MSN, post masters certificate

University of Pennsylvania
School of Nursing
Nursing Education Building
420 Guardian Drive
Philadelphia, PA 19104-6096
(215) 898-4335
Joyce E. Thompson, CNM, DrPH, FAAN, FACNM, Program Director
Accreditation period: review in 2002
MSN

University of Puerto Rico
Nurse-Midwifery Education Program
School of Public Health
Maternal and Child Health Program
Medical Campus
P.O. Box 5067
San Juan, PR 00936-5067
(787) 759-6546
Irene de la Torre, CNM, MS, Program Director
Accreditation period: pre-accredited
MPH

University of Rhode Island
Graduate Program in Nurse-Midwifery
College of Nursing
Kingston, RI 02881-0814
(401) 874-5303
Holly Powell Kennedy, CNM, MSN, Program Director
Accreditation period: review in 2001
MSN, post masters certificate

University of Rochester
School of Nursing
601 Elmwood Avenue, Box SON
Rochester, NY 14642-9000
(716) 275-2375
Kathleen Utter King, CNM, MSN, Program Director
Accreditation period: review in 2002
MS, post masters certificate

University of Southern California
Nurse-Midwifery Education Program
Department of Nursing
1540 Alcazar Street, CHP 222
(213) 226-3386, 342-1675
B.J. Snell, CNM, PhD, Program Director
Accreditation period: pre-accredited
MSN, masters completion option

University of Texas at El Paso/Texas Tech University HSC
Collaborative Nurse-Midwifery Program
Department of OB/GYN
4800 Alberta Avenue
El Paso, TX 79905
(915) 545-6490
Carolyn Routledge Simmons, CNM, MSN, Program Director
Accreditation period: review in 1999
MSN, masters completion option, post masters certificate

University of Texas Medical Branch at Galveston
School of Nursing
301 University
Galveston, TX 77555-1029
(409) 772-8347
Janice Kvale, CNM, MSN, PhD, Program Director
Accreditation period: review in 2001
MSN, post masters certificate

University of Utah
College of Nursing
Graduate Program in Nurse-Midwifery
25 South Medical Drive
Salt Lake City, UT 84112
(801) 581-8274
Marilyn Stewart, CNM, MS, Program Director
Accreditation period: review in 2006
MS

University of Washington
School of Nursing
Department of Family and Child Nursing
Nurse-Midwifery Program
Box 357262
Seattle, WA 98195-7262
(206) 543-8241
Aileen McLaren, CNM, PhD, Program Director
Accreditation period: review in 2001
MN, masters completion option, post masters certificate

Vanderbilt University
Nurse-Midwifery Program
School of Nursing
102 Godchaux Hall
21st Avenue South
Nashville, TN 37240-0008
(615) 322-3800
Barbara Petersen, CNM, EdD, FACNM,
Program Director
Accreditation period: review in 2002
MSN, post masters certificate

Yale University
School of Nursing
Nurse-Midwifery Program
100 Church Street South
New Haven, CT 06536
Applicant information: (203) 785-2389
(203) 737-2344
Lynette Ament, CNM, MSN, PhD, Program
Director
Accreditation period: review in 2002
MSN

APPENDIX IV

MEAC accredited and pre-accredited programs (as of 1/99)

Birthingway Midwifery School
5731 N. Williams
Portland, OR 97217
(503) 283-4996
Holly Scholles, Director
Accreditation period: pre-accredited

Birthwise Midwifery
School
66 South High Street
Bridgton, ME 04009
(207) 647-5968
Heidi Fillmore Patrick, Director
Accreditation period: pre-accredited

Maternidad La Luz
1308 Magoffin Street
El Paso, TX 79901
(915) 532-5895 fax (915) 532-7127
Deborah Kaley, Director
Accreditation period: review in 1999

Midwifery Institute of California *
3739 Balboa #179
San Francisco, CA 94121
(415) 248-1671
Shannon Anton & Elizabeth Davis, Directors
Accreditation period: pre-accredited

Oregon School of Midwifery
342 E. 12th Avenue
Eugene, OR 97401
(541) 338-9778
Daphne Singingtree, Director
Accreditation period: pre-accredited

Sage Femme Midwifery School
Mailing Address/Portland campus:
2163 NE Broadway
Portland, OR 97232
(503) 249-3999
Patricia Downing, Director
Santa Cruz Campus:
Pacific Cultural Center
1307 Seabright,
Santa Cruz, CA
Cindy Bacon, Regional Director
Accreditation period: pre-accredited

Seattle Midwifery School
2524 16th Avenue South #300
Seattle, WA 98144-5104
(800) 747-9433/ (206) 322-8834
fax (206) 328-2840
Jo Anne Myers-Ciecko, Director
Accreditation period: review in 1999

Utah School of Midwifery *
190 S. Canyon Avenue
Springville, UT 84663
(801) 489-1238
Dianne Bjarnson, Director
Accreditation period: review in 1999

*HAS DISTANCE EDUCATION PROGRAM

REFERENCES

Agency for Health Care Policy and Research. (AHCPR). (1997). Statistics from the HCUP-3 (Healthcare Cost and Utilization Project) Nationwide Inpatient Sample for 1994: diagnosis-related groups. *Healthcare Costs and Utilization Project Pocket Guides.* Rockville, MD. AHCPR Pub. No. 97-0056.

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American College of Nurse-Midwives (ACNM), Division of Accreditation. (1998). Education Programs Accredited by the ACNM Division of Accreditation. Washington, DC: ACNM Division of Accreditation, July, 1998.

Beal J. (1984). Nurse-midwifery intrapartum management. *J Nurse Midwifery*. 29(1):13-19.

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