Best Practices in Midwifery
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Best Practices in Midwifery

Using the Evidence to Implement Change

Second Edition

Barbara A. Anderson, DrPH, CNM, FACNM, FAAN
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Editors
To all midwives, whose vision, voice, scholarship, and astute clinical observation and practice have forged the path of evidence-based practice
CONTENTS

Contributors xi
Foreword Holly Powell Kennedy, PhD, CNM, FACNM, FAAN xv
Preface xvii

SECTION I: ADVANCING MIDWIFERY CARE
Barbara A. Anderson

1. The Midwifery Workforce: Issues Globally and in the United States 3
   Judith T. Fullerton and Barbara A. Anderson

2. Advocating for Childbearing Women: Current Initiatives and Workforce Challenges 23
   Heather M. Bradford and Jesse S. Bushman

3. Evaluating and Using Scientific Evidence: Foundation for Implementing Change 51
   Billie Anne Gebb, Zach G. Young, and Barbara A. Anderson

SECTION II: MIDWIFERY CARE: THE EVIDENCE FOR OPTIMAL OUTCOMES
Rebecca Barroso

   Julia C. Phillippi and Melody J. Castillo

5. Nutrition and Epigenetics in Pregnancy 85
   Mary K. Barger
6. Evidence-Based Midwifery Care for Obese Childbearing Women 109
   Laura A. Aughinbaugh and Nicole S. Carlson

7. Weight Management Counseling With Overweight and Obese Pregnant Women 131
   Cecilia M. Jevitt

8. Maternal Concerns and Knowledge About Vaccination During Pregnancy: Counseling Childbearing Women 159
   Deborah M. Brickner

   Jane M. Dyer

    Patricia O. Loftman

11. Circles of Change: CenteringPregnancy®, Health Disparities, and Vulnerable Women 199
    Margaret S. Hutchison and Melanie R. Thomas

12. Postpartum Mood and Anxiety Disorders: Maximizing Midwifery Care 217
    Cheryl Tatano Beck

    Kathleen A. Moriarty

14. The Freestanding Birth Center: Evidence for Change in the Delivery of Health Care to Childbearing Families 261
    Susan E. Stone, Eunice K. M. Ernst, and Susan R. Stapleton

15. Creating a Birth Center: Entrepreneurial Midwifery 283
    Kathryn Schrag and Barbara A. Anderson

16. Home as the Place of Birth: The Evidence for Safety 299
    Judith P. Rooks and Suzan Ulrich

SECTION III: THE INTRAPARTAL PERIOD: USING THE EVIDENCE
Rebeca Barroso

17. Therapeutic Presence and Continuous Labor Support: Hallmarks of Midwifery 325
    Robin G. Jordan
18. Untethering in Labor: Using the Evidence for Best Practice 345
   Susan M. Yount, Meghan Garland, and Rebeca Barroso

19. Vaginal Birth After Cesarean: Emotion and Reason 369
   Mayri Sagady Leslie

20. The Limits of Choice: Elective Induction and Cesarean Delivery on Maternal Request 393
   Kerri D. Schuiling and Joan K. Slager

21. Evidence-Based Management of Prelabor Rupture of the Membranes at Term 411
   Amy Marowitz

22. The Midwife as Catalyst: Promoting Institutional Change With Intrapartum Immersion Hydrotherapy 429
   Elizabeth Nutter and Jenna Shaw-Battista

23. Nitrous Oxide’s Place in Labor and Birth 447
   Michelle R. Collins and Judith P. Rooks

   Mavis N. Schorn

SECTION IV: COLLABORATIVE PRACTICE: THE EVIDENCE FOR BEST PRACTICES
Barbara A. Anderson

25. The Role of Midwifery in Mobilizing Communities to Improve Maternal and Newborn Health Outcomes 479
   Jody R. Lori

26. The Evidence for Interprofessional Education in Midwifery 493
   Denise Colter Smith and Mary Paul Backman

27. Creating a Collaborative Working Environment 511
   Ginger K. Breedlove and John C. Jennings

28. Conclusion: Policy and Advocacy—Fostering Best Practices in a Dynamic Health Care Environment 527
   Lisa Summers

Index 533
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Evidence-based practice (EBP) was established to contest clinical decision making based on tradition rather than science. The original visionary formula for EBP comprised three pillars: (a) the best available evidence; (b) professionals’ skills, expertise, and judgment; and (c) the needs and preferences of patients and families (Evidence-Based Medicine Working Group, 1992; National Health Service Executive, 1999). The goal is to use evidence to arrive at best clinical decisions in partnership with women and colleagues of the health care team.

A recent series on midwifery evidence published in The Lancet reflects the original three pillars of EBP (Homer et al., 2014; Renfrew et al., 2014; ten Hoope-Bender et al., 2014; Van Lerberghe et al., 2014). The authors’ evaluation of evidence to date revealed that 80% of maternal and newborn deaths, including stillbirths, could be averted globally if midwifery were accessible to all women and newborns. Unique to this series was the development of an evidence-informed Quality Maternal and Newborn Care (QMNC) Framework (Renfrew et al., 2014). The framework is presented as a matrix encompassing clinical services founded on philosophy and values, including respect, communication, community knowledge and understanding, and care tailored to a woman’s circumstances and needs. Although first-line management of complications and referral services are part of the framework, there is marked attention to optimizing biological, psychological, social, and cultural processes, as well as strengthening a woman’s capabilities. Management is expectant and interventions are used only when indicated. “The services provided by midwives are best delivered not only in hospital settings but also in communities—midwifery is not a vertical service offered as a narrow segment of the health system. Midwifery services are a core part of universal health coverage” (Horton & Austudillo, 2014, p. 1).

Every chapter in this second edition of Best Practices in Midwifery: Using the Evidence to Implement Change captures the evidence for midwifery as presented in the QMNC Framework. Issues on the organization of care—both globally and locally—are examined, including the midwifery workforce, facilitating access, challenges of advocating for women, migration, and creating a collaborative workplace. Evidence is presented to facilitate best practices in caring for women across
the continuum of prenatal, intrapartum, and postpartum care such as therapeutic presence in labor, nutrition and weight management, mental health, and vaccination. The evidence on place of birth describes birth center and home birth data and practicalities. There is innovation and excitement throughout the chapters, creating a culture of change based on best evidence.

This book is intended to assist midwives, nurses, physicians, and administrators to design safe care of the highest quality during pregnancy, birth, and postpartum. It will facilitate changes in institutional policies that work with women to make informed decisions for themselves and their babies. It will help us to reduce health disparities and improve outcomes across populations through the systematic application of the data presented in these pages.

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The greatest joy is to become a mother; the second greatest is to be a midwife.
—Norwegian Proverb

The landscape in health care and midwifery has changed considerably since the first edition of Best Practices in Midwifery: Using the Evidence to Implement Change was released in 2013. Global and domestic events have highlighted the critical role that midwives play in improving the odds for survival and enhancing the health of mothers and infants. As the first decade of this century closed, the United Nations (UN) Millennium Development Goals (MDGs) merged into the next global initiative, the UN Sustainable Development Goals (SDGs). Many of the MDGs had considerable success. Globally, between 1990 and 2015, the maternal mortality ratio declined by 45% and the under-5-year-old mortality rate declined by more than 50% (UN, 2015). By 2014, more than 71% of births were assisted by a skilled provider, an increase from 59% in 1990 (UN, 2015). Frequently, that skilled provider was a midwife.

In 2014, The Lancet published the Series on Midwifery, a critical analysis of the impact and potential for high-quality midwifery care in saving lives and improving the health of women and children (Frenk, Gómez-Dantés, & Moon, 2014). The National Institute for Health and Care Excellence (NICE) guidelines demonstrated the efficacy of physiologic birth in low-technology settings, with midwives as key players (NICE, 2014).

Yet, the world, including the United States, continues to face a critical shortage and maldistribution of midwives and other health professionals. Building capacity across the globe for a skilled midwifery workforce, educated to the Standards of the International Confederation of Midwives (ICM), is an essential component in combatting this deficiency in the global workforce (ICM, 2013; Lancet Series, 2014).

The health care landscape in the United States faces enormous challenges. The United States ranked 22 out of 180 nations in a global ranking of maternal
deaths in 1990, but fell to 60 of 180 in 2013; the United States has seen a sharp rise in maternal deaths (Kassebaum et al., 2014). As maternal mortality has risen (currently 18.5/100,000 live births) so has morbidity—with many near misses; unplanned events that did not result in death but easily could have (Kassebaum et al., 2014). Women of color, especially those in poverty, continue to bear the burden of mortality and morbidity in childbirth, reflecting higher numbers than the published amalgamated figures of mortality and morbidity (Brown, Small, Taylor, Chireau, & Howard, 2011).

Midwives are central to many of the efforts to combat these appalling statistics. In this book, we examine efforts involving midwifery to improve the health of women and children in the United States, including Strong Start, US MERA, CenteringPregnancy®, and focus on physiologic birth. We also look at excellent endeavors on the global front.

The second edition of this book picks up where the first edition ended. With colleagues Susan Stone, Kitty Ernst, and the faculty at Frontier Nursing University (FNU), the first edition sought to reflect the vision of Mary Breckinridge, founder of the Frontier Nursing Service and the Frontier Graduate School of Midwifery in Hyden, Kentucky (Breckinridge, 1952). The second edition seeks to bring together the voices and knowledge of midwifery experts from across the nation.

This second edition examines updated evidence on a range of topics affecting midwifery, including evidence-based clinical practice, the impact of institutional and national policies, and the effects of diversity and globalization. With contributions from 44 authors, clinicians, scholars, and leaders, the book reflects a vision and voice of best practices grounded in the evidence. Section I examines the external environment that impacts the profession. Section II drills down into the evidence for optimal outcomes. Section III explores the evidence for major midwifery contributions to physiologic birth, and Section IV reminds us that we do not live in a silo but need to work collaboratively with our colleagues across the globe.

Qualified instructors may request PowerPoint supplements to this text from Springer Publishing Company by e-mailing textbook@springerpub.com. The editors are grateful to the many persons who have supported our efforts to present current evidence and best practices, especially the 43 authors who took time away from their busy practices, positions, and responsibilities to share their knowledge. We are grateful to our reviewers: American Association of Birth Centers past president and current director of Strong Start, Jill Alliman; American College of Nurse-Midwives (ACNM) past president, Katherine Camacho Carr; and external reviewer, E. N. Anderson, professor emeritus of anthropology. It is an honor to have Holly Powell Kennedy sharing her wisdom in the Foreword. Dr. Kennedy is an inspiration to all. We wish to acknowledge Susan Stone, president of FNU, for her visionary ideas in the first edition, and Kitty Ernst, Mary Breckinridge Chair of Midwifery, FNU, who is truly a force of nature in promoting the vision of midwifery. We wish to acknowledge the expertise of co-editor Rebeca Barroso and copy editor Prudence Hull, in editing the manuscript. As always, the Springer Publishing Company editors have given timely and knowledgeable
support. Thank you to assistant editor Amanda Devine and to long-time nurse and friend of nursing and midwifery, acquisition editor and Springer Nursing publisher Margaret Zuccarini, for creating a climate of collegiality. As the lead editor, Barbara A. Anderson is indebted to the co-editors of this work, ACNM past president Judith P. Rooks, and clinician par excellence, Rebeca Barroso.

Lastly, to our midwife colleagues, certified nurse-midwives, certified midwives, certified professional midwives, registered midwives, and all those around the world who hold the professional and honorable title of “midwife,” we share with you the vision of “a midwife for every woman” (ACNM, 2015, para. 1). That vision has never been more achievable.

Barbara A. Anderson
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CHAPTER FOUR

FACILITATING ACCESS TO MIDWIFERY-LED PRENATAL AND POSTPARTUM CARE

Julia C. Phillippi and Melody J. Castillo

ACCESS TO HEALTH SERVICES

Perinatal care provides women with health screening and education that may improve the woman’s health, lessen the possibility of complications for mother and child, and increase the likelihood of infant survival. Prenatal care can assist women in managing chronic conditions, changing health behaviors, and increasing use of community resources. In addition, prenatal care offers women the opportunity for fetal screening and testing, as well as early detection and management of new-onset or pregnancy-related complications.

Current genomic research supports the belief that the health of the mother in pregnancy affects the long-term health of her offspring. For instance, there is growing evidence that the risks for adult obesity and metabolic syndrome are influenced by maternal obesity, underscoring the value of preconception and prenatal care (Lau, Rogers, Desai, & Ross, 2011). However, if prenatal care is only accessible to affluent, mainstream, and socially organized women, then it can increase health disparities (Jackson, Crider, Cragan, Rasmussen, & Olney, 2014; Kucik et al., 2014). Midwives have an ethical obligation to ensure that all women have access to beneficial services during pregnancy (American College of Nurse-Midwives [ACNM], 2004).

Access to health services is defined by the Institute of Medicine (IOM) as the “timely use of personal health services to achieve the best health outcomes” (Millman, 1993, p. 4). Access has three steps: gaining entry to the health care system, gaining access to the site of services, and developing a relationship based on communication and trust with a provider who can meet health care needs (U.S. Department of Health and Human Services [USDHHS], Agency for Healthcare Research and Quality [AHRQ], 2014). Access to prenatal care specifically is defined as “the potential ability of a woman to enter prenatal care services and maintain care for herself and the fetus during the perinatal period” (Phillippi, 2009, p. 220).
Midwifery Care: The Evidence for Optimal Outcomes

Historically, midwives have increased access to health care for women and newborns. In response to increasing demand for primary care services, midwives certified by the American Midwifery Certification Board (AMCB) continue this work (Phillippi & Barger, 2015). Provision of care to vulnerable populations is an ACNM hallmark of midwifery (ACNM, 2012a). The ACNM philosophy states that all people deserve equitable, ethical, accessible quality health care to enable informed health decisions (ACNM, 2004).

Many factors affect access to health care, and particularly midwifery services. Influences include societal, structural, maternal, and medical components (Phillippi & Roman, 2013). Although midwives generally focus on the direct provision of evidence-based care, midwives also work as clinical and research leaders to sculpt clinical, hospital, and public policies (ACNM, 2012a; International Confederation of Midwives [ICM], 2013). In addition, “support of legislation and policy initiatives that promote quality care” is a professional responsibility of certified nurse-midwives (CNMs) and certified midwives (CMs; ACNM, 2012a, p. 2). Such advocacy is an advanced skill in the ICM Essential Competencies (ICM, 2013).

MEASURES OF ACCESS

There are several methods of assessing access to health care, including qualitative and quantitative measures. Clinicians and researchers can examine the experience or perceptions of people needing care using interviews, focus groups, or surveys. This assessment can be done as a quality project designed to improve care or as part of research. Although collecting information from women about their experiences provides exceedingly valuable information, it is less commonly used in studies of access, as qualitative data collection is time-consuming and pregnant women may be reluctant or unable to participate in research. As a result of these constraints, many studies of access use publicly available quantitative data.

One of the most common measures of health care access is the utilization of services. Information about the initiation and number of prenatal care visits is collected on the standard U.S. birth certificate and is available in aggregate from state and national databases. Similar reporting is also used in many international studies (World Health Organization [WHO] & United Nations Children’s Fund [UNICEF], 2003). Another common public source of information is the Pregnancy Risk Assessment Monitoring System (PRAMS), a project of the Centers for Disease Control and Prevention (CDC; 2009). Data for PRAMS are obtained from a stratified sample of women in 40 states who have given birth within the past 4 months. Women in the sample complete an in-depth questionnaire and a telephone interview, providing both quantitative and qualitative data (CDC, 2009). Utilization of postpartum services is not well studied, in part related to difficulties in obtaining data, but the PRAMS database includes information on women’s self-report of postpartum care utilization.

Access to health care can also be assessed by quantifying the number and location of health care facilities or providers in relation to the geographic
distribution of people needing health care. This is one approach utilized by the National Health Service Corps when determining health care provider shortage areas in relation to eligibility for student loan repayment (Office of the Federal Register, 2009). Data on population density can be obtained from the census or other public sources and compared with locations of health care providers (Madkour, Harville, & Xie, 2014). Complex models can overlay these factors with other data, such as rates of timely prenatal care initiation, to further study women’s access to maternity services (Shoff, Yang, & Matthews, 2012).

Although these approaches are useful in quantifying women’s access to care, they do not demonstrate the effects of midwifery care. The attending provider is listed on the U.S. birth certificate, but there are no mechanisms for identifying women who received midwifery care antepartum, intrapartum, or postpartum but gave birth with another provider type. The ACNM working groups are attempting to rectify this problem so that electronic health systems can be used to track the utilization of midwifery services across the perinatal period (M. Freytsis, personal communication, August 11, 2015).

Poor Utilization—A Personal or Systemic Problem?

Although access to care is commonly discussed in terms of utilization, these concepts are not interchangeable. Availability of health care services must be considered alongside women’s perceptions of access to services, which are not always congruent. It is fairly easy to see poor utilization of prenatal care as a maternal problem. In the United States, services are available within nearly all geographic regions, and a safety-net system of free care can be found in many locations. However, women do not consistently access services available to them.

Placing the blame on women disregards the larger social forces affecting the women’s ability to receive prenatal care. Inadequate utilization of prenatal care is nearly always a reflection of a poor fit between the available resources and women’s needs (Phillippi & Roman, 2013). This discrepancy between services and needs contributes to the health disparities between mainstream and marginalized groups in the United States and around the world (Bromley, Nunes, & Phipps, 2012; Cox, Zhang, Zotti, & Graham, 2011; Walford, Trinh, Wiencrot, & Lu, 2011). When a population of women has low rates of timely initiation of prenatal care or inadequate use of prenatal or postpartum services, midwives should work to decrease barriers and facilitate care.

Groups at Risk for Poor Utilization of Prenatal Care

Across all types of health care, including midwifery services, people who are marginalized in society struggle to access services. Women may be marginalized because of their gender; race; ethnicity; sexuality; marital, socioeconomic, or health status; or any trait considered undesirable in their community. Marginalized societal status can make it difficult for women to obtain services for a variety of reasons, including lack of money or time, poor access to the physical location of care, or fear of judgment from health care personnel.
In the United States, women who have a low socioeconomic status often struggle to obtain needed services. Although women who are U.S. citizens often qualify for free or reduced cost prenatal care, women who do not have prepregnancy insurance initiate care later and struggle to obtain needed prenatal care services throughout their pregnancies (Rosenberg, Handler, Rankin, Zimbeck, & Adams, 2007). The Affordable Care Act has made it easier for many nonpregnant women to qualify for reduced cost health insurance. Overall, this change has improved access to primary care services, including preventative gynecologic care (USDHHS, AHRQ, 2015). However, states vary in their approach to funding prenatal care, and it may be difficult for working women to obtain prenatal care at a price they can afford. In addition, women with low socioeconomic status may live in areas with few providers, have irregular transportation, or work in jobs that do not allow time off for medical visits (Phillippi, 2009).

Women with competing personal demands often struggle to obtain early prenatal care and meet the recommended visit schedule. For instance, women with three or more children are less likely to receive early care and have regular visits (Partridge, Balayla, Holcroft, & Abenhaim, 2012). Qualitative studies identify a variety of factors, including feeling that care is not warranted and competes with the needs of existing children (Heaman et al., 2014). Women with preschool-age children report the most difficulty accessing care (Phillippi, 2009).

Also at risk are women who believe that they have to hide certain aspects of their lives. Because pregnancy is linked with sexuality, taboos around sex may impair young women’s ability or motivation to obtain care. In order to access care, young women have to know they are pregnant, and often they have to disclose this to their parents to get advice, transportation, or financial help (Teagle & Brindis, 1998). Likewise, women with psychiatric disorders may delay or avoid access to care because of anxiety and fear of stigma (Krans, Davis, & Palladino, 2013; Krans, Davis, & Schwarz, 2013).

Women experiencing unplanned pregnancy may have difficulty accessing prenatal care. Approximately half of all pregnancies in the United States are unplanned and affect women of all childbearing ages (Kost, 2015). Not knowing about a pregnancy, the stresses of an unplanned pregnancy, wanting to hide the pregnancy, and consideration of abortion may contribute to poor access to prenatal care (Heaman et al., 2014).

Some women may be worried about legal ramifications of seeking prenatal care. Women who are actively using illicit drugs or who are physically abused may not obtain needed services in pregnancy as they worry that disclosure may trigger legal action against them or their partners (Krans et al., 2013). Women who are not legal residents may fear legal consequences or deportation if they seek care (White, Yeager, Menachemi, & Scarinci, 2014). These women without legal status may also face challenges related to language and cultural barriers, or exclusion from social programs and resources (Korinek & Smith, 2011).

Women who struggle to access services have higher rates of perinatal morbidity and mortality (Partridge et al., 2012). However, if women from vulnerable groups obtain midwifery services during pregnancy and postpartum, perinatal
outcomes can be improved (Raisler & Kennedy, 2005; Sandall, Soltani, Gates, Shennan, & Devane, 2013).

**BARRIERS AND FACILITATORS TO ACCESS**

There is an extensive amount of literature on barriers to prenatal care access. Women's comments on barriers are most often found in the qualitative literature. These barriers can be classified into societal, maternal, structural, and medical categories (Phillippi, 2009). Common societal barriers include transportation, payment structures/finances, and the needs/expectations of partners and family members.

Maternal barriers relate to the woman's personal situation. Transportation is a frequent barrier for both rural and urban women. Rural women struggle to have reliable transportation and money for gas, and urban women have difficulty paying for public transportation or clinic parking. Women with children find transportation to be even more of a barrier than women without children who are at home during the day (Phillippi, 2009).

Motivation for prenatal care is another frequently cited barrier. Women may not be aware of pregnancy for many weeks (Haddrill, Jones, Mitchell, & Anumba, 2014). Women with unplanned pregnancies may delay prenatal care entry if considering abortion or until they are emotionally prepared to accept the pregnancy (Heaman et al., 2014; Phillippi, 2009). For some women, especially teens who need advice or help in getting care, disclosure to friends or family can be a strong barrier (Phillippi, Holley, Payne, & Schorn, 2016; Teagle & Brindis, 1998).

Mental health problems may contribute to a lack of motivation. In studies, women state that depression thwarts their entry into prenatal care, even if they know they would benefit from services (Heaman et al., 2014). Some women have anxiety about medical procedures, whereas other women feel that the prenatal care is unnecessary because of cultural reasons or previous uncomplicated pregnancies (Heaman et al., 2014; Phillippi, 2009). Although there are a variety of common barriers, midwives should work to eliminate these barriers whenever possible (Phillippi & Roman, 2013). This work may involve changes at the point of care or advocating for state or national policy change.

The literature on facilitators of access to prenatal care is less robust than information on barriers. Although it can be assumed that elimination of barriers will increase access to care, this needs further testing (Phillippi & Roman, 2013). The literature supports that women are willing to overcome barriers if, upon arrival to care, they are treated with respect and kindness and seen by a clinician who treats them as individuals and answers their questions (Phillippi, Myers, & Schorn, 2014).

**EVIDENCE-BASED STRATEGIES FOR IMPROVING ACCESS**

Across sociocultural and age groups, desire for a healthy baby is consistently reported as women's greatest motivator for prenatal care (Heaman et al., 2014; Johnson et al., 2011; Phillippi, 2009). Midwives can capitalize on women's desire...
for a healthy baby and facilitate their access to needed services during pregnancy and the postpartum period. Best practices incorporate information from research, quality, and customer service.

Clinic Characteristics

Providing an appointment soon after the woman’s initial call is one of the first ways to facilitate care. When women are ready to begin care, they should be seen as soon as possible. Although difficult, especially in busy clinics, midwives can work with the administration to ensure minimal delay in initiation of care. Care can also be facilitated by offering a variety of appointment times, including evenings and times when significant others or support persons can attend visits (Novick, 2009; Phillippi et al., 2014). Additionally, care may be facilitated by providing a variety of payment options and minimizing out-of-pocket costs to women (Phillippi, 2009; Phillippi & Roman, 2013).

Strategic placement of clinic location can facilitate access to prenatal care. Considerations for a location may include proximity to public transportation and minimization of travel time (Novick, 2009; Phillippi, 2009; Phillippi et al., 2014). Transportation assistance can also facilitate access to care. Acceptable transportation assistance includes vouchers to pay for transportation or parking, or free parking (Johnson et al., 2011).

Decreasing wait times at the clinic once women arrive is important as women often have constraints on their transportation or time. Women are more satisfied with care when waits are less than 30 minutes. If unavoidable, women value information about delays. However, an unrushed feel in the clinic environment is also important (Sword et al., 2012).

The clinic environment should be reflective of women’s needs: respectful, welcoming, and physically and emotionally safe. Motivation for accessing care is dynamic and every interaction with the clinic or clinic staff is an opportunity to inspire future access to care (Phillippi & Roman, 2013). Women value environments that are clean, comfortable, private, and welcoming to children (Novick, 2009; Sword et al., 2012). Assistance with childcare facilitates prenatal care for women whose children must accompany them to the clinic. Women report that clinics that welcome their children and have child-safe play areas are easier to access, but women are also accepting of other kinds of assistance with child care (Phillippi et al., 2014). Clinic décor, permanent and seasonal, should be sensitive to the social and cultural backgrounds of the women. Home-like décor may facilitate a relaxed and welcoming environment (Proctor, 1998). The qualitative literature specifies that clinic staff who are friendly, welcoming, easy to understand, and receptive to the woman’s needs facilitate access (Heaman et al., 2014; Phillippi et al., 2014, 2016).

Creating a safe, welcoming environment is essential in helping women feel safe in disclosing personal information. For example, lesbian women are more likely to share their sexual orientation with health care providers whom they perceive as sensitive and accepting (McManus, Hunter, & Renn, 2006). Disclosing sexual orientation to health care providers increases satisfaction with care, and
women with positive perceptions of their providers are more likely to adhere to recommendations and present for follow-up care (Hutchinson, Thompson, & Cederbaum, 2006). Facilitating such an environment starts with careful attention to language on clinic forms, handouts, and in conversations with women (McManus et al., 2006). Midwives may further facilitate access to care by familiarizing themselves with the health care needs of populations they serve, and acting as advocates for women from this population (Hutchinson et al., 2006). A welcoming environment incorporates partner involvement to the full extent desired by the woman, independent of age, sex, gender, or marital status.

The Supreme Court ruling on June 26, 2015, recognized same-sex marriage as a constitutional right (Obergefell et al. v. Hodges, 2015). Although not all same-sex couples desire marriage, this ruling may be a catalyst for legal change. Although states explore the ramifications of this ruling, lesbian, gay, bisexual, and transgender parents may still experience challenges (Biblarz & Savci, 2010). Midwives should be sensitive to women’s needs and assist as needed with legal resources.

**Provider Characteristics**

Populations experience the greatest positive change in health outcomes when they are cared for by providers with similar demographic characteristics (Jackson & Gracia, 2014). In order to improve access to services, the midwifery workforce needs to be more diverse. Although the ACNM Diversity and Inclusion Task Force has been working on issues related to recruiting, retaining, and supporting midwives from diverse backgrounds, this responsibility belongs to all in the profession. Midwives should encourage people with a variety of attributes and skills to enter midwifery, recognizing that our diversity may help us better serve multiple populations.

Qualitative research indicates that women prefer accessing care with a single provider but are open to a variety of providers if their care is personalized, and if they are consistently treated with kindness and respect (Novick, 2009; Phillippi et al., 2015). Practices often balance continuity of care with appointment availability by employing several midwives. Midwifery-led continuity models of care provided by both a single midwife and a group of midwives have demonstrated benefits to women (Sandall et al., 2013). If a woman is not able to establish a relationship with one provider, clinics can increase a woman’s sense of connection by disseminating important social and personal aspects of the woman’s life among the practicing midwives.

Although women appreciate providers who can speak their language, they are accepting of interpreter services if the provider is genuinely interested in them and provides culturally appropriate care (Heaman et al., 2014; Phillippi et al., 2016; Sword et al., 2012). The literature on prenatal care access overlaps the literature on quality of prenatal care. Women report that high-quality care and competent providers increase their motivation and ability to access services (Phillippi et al., 2016; Sword et al., 2012). Additionally, women value providers who communicate effectively and answer questions (Phillippi et al., 2014).
Prenatal Care

Prenatal care optimizes perinatal outcomes and is recommended by national and international health organizations, including the CDC (2015) and the WHO (2009). Although utilization is often a measure of prenatal care access, evidence suggests that the quality of care may be more important than the quantity of care. However, there is not a consensus on what constitutes quality prenatal care (Sword et al., 2012), and available measures of prenatal care access do not account for content or quality (Misra & Guyer, 1998). Efforts are being made to address this issue. Renfrew, McFadden et al. (2014) propose a framework for quality maternal and newborn care, outlining effective, evidence-based practices.

The ACNM philosophy provides a broad framework for quality prenatal care, stating that the best model of health care for women “promotes a continuous and compassionate partnership, acknowledges a person’s life experiences and knowledge, includes individualized methods of care and healing guided by the best evidence available, [and] involves therapeutic use of human presence and skillful communication” (ACNM, 2004, p. 1). In the United States, prenatal care guidelines are available from several sources, including the American Academy of Pediatrics (AAP) and the American College of Obstetricians and Gynecologists (ACOG; AAP Committee on Fetus and Newborn & ACOG Committee on Obstetric Practice, 2012), and the Institute for Clinical Systems Improvement (Akkerman et al., 2012). International guidelines are available from several sources, including the U.K.’s National Institute for Health and Care Excellence (NICE) and the WHO (2009). The literature supports that the provision of quality care goes beyond adherence to evidence-based guidelines. The qualitative literature demonstrates that both women and providers include additional components in their assessment of quality, including structural components, such as the physical setting and convenience of the clinic, and interpersonal components such as a provider’s approachability, respectfulness, and emotional support (Sword et al., 2012). This highlights the importance of a woman-centered approach to care, a core value of ACNM (ACNM, 2012b).

As the attributes of quality prenatal care continue to be clarified, evidence supports that midwifery care increases access to quality perinatal care (Renfrew, Homer et al., 2014). A recent Cochrane Review found that midwifery-led continuity models of care had no adverse outcomes and demonstrated benefits compared to other models of care (Sandall et al., 2013). The authors conclude that the majority of women need to be offered midwife-led continuity models of care (Sandall et al., 2013). The Lancet’s Series on Midwifery (2014) explored the role of midwifery in meeting the needs of childbearing women and their families and concluded that trained midwives are essential to improving perinatal care in low-, middle-, and high-resource countries, elaborating that universal access to midwifery services will require a significant increase in the midwifery workforce (Renfrew, Homer et al., 2014).

Women’s needs for flexibility in prenatal visit structure, timing, and content were called to the attention of policy makers and health care providers with the publication of “Caring for Our Future: The Content of Prenatal Care” (U.S. Public
Health Service, 1989). Although ideally all prenatal care is based on evidence, historically this has not been true, because of the difficulties of research with pregnant women (IOM, 2010). Newer, emerging models of care, based on research, should be incorporated if they meet population and individual needs.

The standard visit schedule for prenatal care begins in the first trimester and includes at least 12 visits with increasing frequency as pregnancy advances. Designed to prevent maternal deaths from preeclampsia, this schedule has not been changed since the inception of prenatal care in the 1940s (Alexander & Kotelchuck, 2001). However, this schedule does not reflect the need for testing and health promotion in early pregnancy and may not resonate with the perceived needs of women (Krans et al., 2013). Alternate forms of prenatal care, based on current evidence, include reduced frequency of visits as well as group prenatal care models, such as CenteringPregnancy®.

Prenatal care schedules with reduced frequency of visits strategically schedule care to coincide with prenatal screening and health-promotion teaching. The safety of models using approximately eight visits during pregnancy has been established for low-risk women in developed countries (Dowswell et al., 2010). Reduced visits decrease cost, but are also associated with reduced maternal satisfaction (Dowswell et al., 2010). Midwives can customize visit intervals based on maternal needs to ensure a woman’s needs are met, within third-party payer limitations.

The CenteringPregnancy model has been shown to have lower rates of preterm birth when compared with individual prenatal care (Ickovics et al., 2007; Picklesimer, Billings, Hale, Blackhurst, & Covington-Kolb, 2012). In addition, participants have greater knowledge of perinatal topics (Baldwin, 2006; Ickovics et al., 2007). Many women are very satisfied with this model of care, feeling it provides a sense of community (Kennedy et al., 2009; Novick et al., 2011). However, this form of care may not be accessible to all women (McDonald et al., 2016), especially those who struggle with anxiety in groups, those with small children, and those who cannot accommodate a fixed group time (Phillippi & Myers, 2013). Midwives should encourage group prenatal care but provide alternatives for women who are unable to attend group visits.

**Postpartum Care**

Provision of evidence-based postpartum care is woefully inadequate in the United States. For example, only 8% of women who self-identified as having gestational diabetes reported clinical postpartum testing (Oza-Frank, 2014). Although historically women have returned to the clinic 4 to 6 weeks postpartum, this time frame is not based on evidence. In fact, at this point, it may be too late to promote breastfeeding, encourage use of long-acting contraceptives, or assess for postpartum depression (Fahey & Shenassa, 2013). Although in-person assessment and assistance are preferable, telephone or online contact may be an alternative for women who otherwise would not receive postpartum services (Lavender, Richens, Milan, Smyth, & Dowswell, 2013).

Research suggests that provision of contraception can safely take place much earlier than 4 weeks postpartum (de Bocanegra, Chang, Howell, & Darney, 2014).
Women who desire permanent sterilization can receive a postpartum tubal ligation the day after birth. If a woman has Medicaid and wants a tubal ligation, it is important to assist her in signing an official consent form between 17 and 36 weeks of pregnancy so she can qualify for a Medicaid-funded tubal ligation. Long-acting contraceptives, such as intrauterine devices, can be placed prior to hospital discharge (de Bocanegra et al., 2014). Immediate provision of contraception may improve future perinatal outcomes as it delays subsequent pregnancy and prevents short interpregnancy intervals associated with risks of preterm birth and low birth weight (de Bocanegra et al., 2014). If a woman does not desire a long-acting contraceptive, the midwife can provide a prescription for her chosen method soon after birth to facilitate contraception prior to resumption of intercourse.

Midwifery support for breastfeeding and lactation services is also crucial in the postpartum period. In addition to providing direct breastfeeding support, midwives can facilitate hospital and clinical environments that implement best practices in encouraging breastfeeding. Women may be reluctant to ask for help or see new providers, but a trusted midwife’s recommendation can encourage her access to lactation assistance, as needed. Beyond professional care, women, especially those from low-income or marginalized groups, may benefit from support from a peer counselor from her cultural or socioeconomic group (Renfrew, McCormick, Wade, Quinn, & Doswell, 2012; Rozga, Kerver, & Olson, 2015).

The postpartum period involves social and role changes for the woman and her family. Pre-existing stressors are often magnified postpartum as women and their partners have little sleep, many demands, and finances may be tight as women are on leave from paid employment. Midwives should encourage women to mobilize social support from family, friends, or a faith community as these support systems may improve physical and emotional health (Fahey & Shenassa, 2013). Midwives should assess maternal coping and screen for postpartum depression either in person or by phone. Women who struggle to access prenatal care services also struggle to obtain and afford mental health services (Bobo et al., 2014). Referrals as needed should be made to locations that are compatible with the woman’s culture, language, and ability to pay.

For many women, free or subsidized health care ends a few weeks following birth. As several conditions in pregnancy are harbingers of increased risk later in life (Brown et al., 2013), midwives can help new mothers to receive as much evidence-based care as possible while they have health insurance. Positive care with a trusted provider increases women’s motivation for future care (Phillippi et al., 2016). The final postpartum visit should be a time to reflect on the woman’s growth and assist her in planning for her future primary and reproductive health care.

Midwives should provide the woman with clear guidance on where they can obtain affordable future health care. Women may not know that American Midwifery Certification Board (AMCB)-certified midwives can provide primary care services to women beyond pregnancy and postpartum (Phillippi & Barger, 2015). Women should also be directed to appropriate community resources such as mothers’ groups, housing support, food pantries, and low-cost or free clinics (Fahey & Shenassa, 2013).
CONCLUSION

Evidence-based midwifery care can benefit all women, especially those women at risk for poor perinatal outcomes (Renfrew, McFadden et al. 2014). Beyond providing excellent clinical care, midwives work to facilitate access to health services. Facilitation can occur at the individual, clinic, population, or policy level. Although midwives are most known for their care of women during the prenatal, intrapartum, and postpartum periods, AMCB-certified midwives can increase access through providing gynecologic and primary care.

Midwives have a long history of providing high-quality care to vulnerable and marginalized populations around the globe (Ettinger, 2006; Raisler & Kennedy, 2005; United Nations Population Fund, International Confederation of Midwives, & World Health Organization, 2014). Although direct patient care can be rewarding, work with vulnerable groups, especially in resource-poor settings, can contribute to burnout (Mollart, Skinner, Newing, & Foureur, 2013; Yoshida & Sandall, 2013). Strong collegial support is associated with improved midwifery job satisfaction (Jarosova et al., 2016; Warmelink et al., 2015).

USING THE EVIDENCE FOR BEST PRACTICE

Case Study 4.1 Facilitating Access to Prenatal Care: The Impact of Midwifery

A small clinic located about 1.5 hours outside of a metropolitan area had an influx of women who were recent U.S. immigrants. Z., one of the clinic midwives, enjoyed caring for this population as the women valued physiologic birth and appreciated midwifery care. However, most women requested the last possible Friday appointment and often arrived late, upsetting the office staff.

Z. asked a woman why she preferred Friday appointments. The woman stated the men in the community work for a city construction company and are paid at 3 p.m. on Fridays. Her husband had to cash his check while the bank was open and get gas before he could bring her to the clinic. Otherwise, they could not get groceries for the weekend. All other days of the week, her husband worked until 4 p.m., making it impossible for her arrive before the clinic closed at 5 p.m.

Once Z. understood the disconnect between the women’s needs and the clinic hours, she worked with the administration to develop a solution. Z. offered to come to the clinic at noon on Fridays and stay until 9 p.m. Clinic staff was not available at these times so Z. enlisted C. to work at the front desk during this time frame. C. was a woman from the community who had given birth twice with the midwives, breastfed her children, had an excellent command of English, and was well-respected within her community as a former teacher. C. was honored to be involved with the clinic’s work and had many ideas of how to improve her community’s health.

The Friday-evening clinic was a resounding success. Under C.’s guidance, the clinic waiting room became a festive community gathering each Friday. Women began bringing food to share and staying for the whole evening to visit with others. C. was able to use this moment to connect women with community resources and explain the value of health care. C. worked with Z. to develop health presentations on topics such (continued)
as breastfeeding, contraception for pregnancy spacing, and well-child visits. Women reported they looked forward to prenatal care as a moment to connect with others and focus on their health. Postpartum women said they enjoyed coming back to share their birth stories with pregnant mothers.

The Friday-evening clinic greatly increased the women’s ability to access midwifery care. The rate of women receiving prenatal care increased dramatically, and the number of no-show appointments decreased sharply. The number of women returning postpartum for contraception also increased, resulting in better birth spacing.

Exemplar of Best Practice

Z.’s compassionate approach and involvement of stakeholders led to a dramatic increase in access to health services for this population. She found innovative ways to overcome barriers and implemented known facilitators of care to assist women in obtaining needed care. Z. provided personalized, culturally appropriate midwifery services and worked with the administration and community members to facilitate access for a local population.

REFERENCES


Facilitating Access to Midwifery-Led Prenatal and Postpartum Care

4


THE RISKS OF OBESITY IN CHILDBEARING

The United States is in the midst of an obesity epidemic that has rapidly evolved over the past 25 years (Centers for Disease Control and Prevention [CDC], 2015). Currently, more than 60% of adults in the United States are overweight or obese (Flegal, Carroll, Kit, & Ogden, 2012). One third of childbearing-age women are obese with higher rates among racial and ethnic minority groups:

- 31.9% obesity among childbearing women in general
- 34.4% among Hispanic women
- 58.5% among non-Hispanic Black women (Flegal et al., 2012)

The trend in maternal obesity in the United States is consistent with other developed nations (Vahratian, Zhang, Troendle, Savitz, & Siega-Riz, 2004; World Health Organization [WHO], 2015; Yeh & Shelton, 2005). Overweight and obesity are linked to numerous health conditions, including cardiovascular disease, diabetes, musculoskeletal disorders, and some cancers (WHO, 2015).

The WHO identifies Class I obesity as body mass index (BMI) greater than 30 kg/m²; Class II obesity as BMI greater than or equal to 35 kg/m², and Class III obesity as BMI greater than or equal to 40 kg/m² (WHO, 2015). When a woman meets the criteria of Class I obesity prior to pregnancy, her pregnancy has increased risks for both her child and herself. If the woman’s BMI prior to pregnancy is Class III, the likelihood of less than optimal outcomes is even greater as both she and her offspring may experience short-term and long-term adverse health conditions. Significant social factors associated with obesity in women of childbearing age are lower formal educational attainment, low household income, and inadequate health insurance status (Vahratian et al., 2004). See Tables 6.1 and 6.2 for studies of the literature on childbearing outcomes related to obesity.
### TABLE 6.1 Short-Term Health and Situational Risks of Obesity in Childbearing: A Synthesis of the Literature

<table>
<thead>
<tr>
<th>Risk</th>
<th>Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>First trimester miscarriage</td>
<td>Lashen, Fear, and Sturdee (2004); Ramsay, Greer, and Sattar (2006)</td>
</tr>
<tr>
<td>Limitations with ultrasound</td>
<td>Phatak and Ramsay (2010); Troya-Nutt et al. (2003); Yeh and Shelton (2005)</td>
</tr>
<tr>
<td>Limitations with conventional care</td>
<td>ACOG (2013); Hawkins, Koonin, Palmer, and Gibbs (1997); Hood and Dewan (1993); Ockenden (2008); Saravanakumar, Rao, and Cooper (2006); Swan and Davies (2012)</td>
</tr>
<tr>
<td>Gestational diabetes</td>
<td>Bhattacharya, Campbell, Liston, and Bhattacharya (2007); Sebire et al. (2001)</td>
</tr>
<tr>
<td>Gestational hypertensive disorders</td>
<td>Bhattacharya et al. (2007); Sebire et al. (2001)</td>
</tr>
<tr>
<td>Induction of labor</td>
<td>Sebire et al. (2001)</td>
</tr>
<tr>
<td>Slower progress of labor</td>
<td>Vahratian et al. (2004)</td>
</tr>
<tr>
<td>Cesarean delivery</td>
<td>Chu et al. (2007a)</td>
</tr>
<tr>
<td>Emergency cesarean delivery</td>
<td>Sebire et al. (2001)</td>
</tr>
<tr>
<td>Wound infection</td>
<td>Myles, Gooch, and Santolaya (2006); Sebire et al. (2001)</td>
</tr>
<tr>
<td>Prematurity</td>
<td>Bhattacharya et al. (2007)</td>
</tr>
<tr>
<td>Thromboembolic disorders</td>
<td>Larson, Sorensen, Gislum, and Johnsen (2007)</td>
</tr>
<tr>
<td>Macrosomnia</td>
<td>Cedergren (2004); Sebire et al. (2001)</td>
</tr>
<tr>
<td>Shoulder dystocia</td>
<td>Cedergren (2004)</td>
</tr>
<tr>
<td>Admission to NICU</td>
<td>Sebire et al. (2001)</td>
</tr>
<tr>
<td>Maternal postpartum hemorrhage</td>
<td>Bhattacharya et al. (2007); Sebire et al. (2001)</td>
</tr>
<tr>
<td>Maternal depression</td>
<td>Dotlic et al. (2014); Usha-Kiran, Hemmadi, Bethel, and Evans (2005)</td>
</tr>
<tr>
<td>Breastfeeding difficulties</td>
<td>Amir and Donath (2007); Lepe, Bascardi-Gascon, Castaneda-Gonzalez, Perez-Morales, and Jimenez-Cruz (2011); Mok et al. (2008); Rasmussen and Kjolhede (2004)</td>
</tr>
<tr>
<td>Congenital anomalies</td>
<td>O'Reilly and Reynolds (2013); Rasmussen et al. (2008); Stothard et al. (2009)</td>
</tr>
<tr>
<td>Stillbirth</td>
<td>Chu et al. (2007b)</td>
</tr>
<tr>
<td>Neonatal death</td>
<td>Chu et al. (2007b); Kristensen, Vestergaard, Wisborg, Kesmodel, and Secher (2005)</td>
</tr>
</tbody>
</table>

(continued)
The increasing rates of overweight and obesity in women of childbearing age, combined with the risks of poor outcomes for the mother–child dyad, make it imperative for midwives to be aware of the evidence. In this chapter, evidence-based best practices for the preconception, antepartum, intrapartum, and

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**TABLE 6.1 Short-Term Health and Situational Risks of Obesity in Childbearing: A Synthesis of the Literature (continued)**

<table>
<thead>
<tr>
<th>Risk</th>
<th>Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preterm labor, both medically induced and spontaneous</td>
<td>Cnattingius et al. (2013); Suidan, Apuzzio, and Williams (2012)</td>
</tr>
<tr>
<td>Prolonged pregnancy, cervical ripening failure</td>
<td>Arrowsmith, Wray, and Quenby (2012); Bhattacharya et al. (2007); Bogaerts, Witters, Van den Bergh, Jans, and Devlieger (2013)</td>
</tr>
<tr>
<td>Increased risk of postpartum hemorrhage</td>
<td>Bloomberg (2011); Wetta et al. (2013)</td>
</tr>
<tr>
<td>Delayed lactogenesis (&gt; 60–72 hours)</td>
<td>Lepe et al. (2011)</td>
</tr>
<tr>
<td>Postpartum depression and anxiety</td>
<td>Molyneaux, Poston, Ashurst-Williams, and Howard (2014)</td>
</tr>
</tbody>
</table>


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**TABLE 6.2 Long-Term Risks of Obesity in Childbearing: A Synthesis of the Literature**

<table>
<thead>
<tr>
<th>Risk</th>
<th>Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infertility</td>
<td>Ramsay et al. (2006); Kelly et al. (2001); Zain and Norman (2008)</td>
</tr>
<tr>
<td>Long-term obesity—mother and chronic illness</td>
<td>WHO (2015); Rasmussen and Yaktine (2009)</td>
</tr>
<tr>
<td>Long-term obesity and diabetes of the child</td>
<td>O’Reilly and Reynolds (2013)</td>
</tr>
<tr>
<td>Cardiovascular disease of the child</td>
<td>O’Reilly and Reynolds (2013)</td>
</tr>
<tr>
<td>Higher incidence diabetes and asthma to children born to obese women</td>
<td>Wilson and Messaoudi (2015)</td>
</tr>
<tr>
<td>Stress incontinence for the mother</td>
<td>Dwyer, Lee, and Hoy (1988)</td>
</tr>
<tr>
<td>Parenting a child born prematurely or born with birth defects</td>
<td>Lindbald, Rasmussen, and Sandman (2005); Ray (2002); Kirk (1999)</td>
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Compiled by Auginbaugh and Carlson (2016).
postpartum care of the obese woman are described. In addition, in providing care to the normal-weight pregnant woman with a history of gastric surgery for weight loss, the midwife needs to be cognizant of unique clinical considerations that deviate from routine care.

**OBESITY PRIOR TO PREGNANCY**

**Preconception Concerns**

The most ideal time to reduce obesity-associated risks is prior to pregnancy (American College of Obstetricians & Gynecologists [ACOG] 2013; Jevitt, 2009; Modder & Fitzsimons, 2010). A pregnancy complicated by obesity is at greater risk for fetal neural tube defects (NTDs; Rasmussen, Chu, Kim, Schmid, & Lau, 2008; Stothard, Tennant, Bell, & Rankin, 2009). However, there is strong evidence that obese women who take high doses of folic acid supplementation prior to pregnancy can minimize the risk of NTDs (Lumley, Watson, Watson, & Bower, 2001; Modder & Fitzsimons, 2010; Mojtabai, 2004; Rassmussen et al., 2008; Scholl & Johnson, 2000).

**Midwifery Best Practices**

During preconception/well-woman visits, the midwife needs to obtain accurate height and weight measurements, determine BMI, and tactfully discuss BMI outside the defined limits as a risk in pregnancy. To supplement the discussion, the obese woman should be given written material. The ACOG has a number of excellent patient education fact sheets available online (see www.acog.org/Resources-And-Publications/Patient-Education-FAQs-List).

The woman contemplating pregnancy should begin supplementation with folic acid. ACOG guidelines (ACOG, 2013) and the joint guidelines of the Centre for Maternal and Child Enquiries (CMACE) and the Royal College of Obstetricians and Gynaecologists (RCOG; Modder & Fitzsimons, 2010) agree on an increased preconception folic acid dose for obese women. To prevent NTDs, women with a BMI greater than or equal to 30 kg/m² should supplement with 5 mg of folic acid daily, as compared to 4 mg daily among normal-weight women.

**ANTEPARTUM OBESITY**

**Antepartum Concerns**

*Gestational Diabetes*

Women with a pregnant BMI greater than or equal to 30 kg/m² are at greater risk for developing gestational diabetes mellitus (GDM; Bhattacharya et al., 2007; Sebire et al., 2001).
Congenital Anomalies

Obese women are at greater risk of giving birth to an infant with a congenital anomaly. Ultrasonography is a cost-effective and widely available tool for evaluating fetal well-being, screening and detection of fetal anomalies, and assessing potential aneuploidy. However, the accuracy of ultrasonography is not equivalent across all BMI categories as the distance from the image and the presence of adipose tissue disrupt the clarity of the image. In 1990, Wolf, Sokol, Martier, and Sador conducted a prospective study ($n = 1,622$ singleton pregnancies) at a mean gestational age of 28.5 weeks. All the fetuses were anatomically normal. High BMI was the best predictor of poor ultrasound visualization. With increasing gestation or increasing examination length of time, visualization of organs did not improve. Despite significant advances, ultrasound technology is still unable to adequately navigate through adipose tissue.

In 2015, Tsai, Loichinger, and Zalud published a meta-analysis identifying the challenges in the use of ultrasound among obese pregnant women. The authors confirmed that, in detecting certain congenital anomalies and aneuploidy, maternal obesity makes ultrasound less useful as a screening tool. Especially in the second trimester, there may be suboptimal visualization as a result of the increased thickness of the abdominal wall (Tsai et al., 2015).

The limitations of ultrasound to detect fetal anomalies and aneuploidy markers, in combination with the significant increase in rates of fetal anomalies, make it logical to offer the triple screen or quad screen. These serum analyte tests screen the mother’s blood for biochemical markers for certain fetal anomalies and aneuploidy. The analytes measured are pregnancy-associated plasma protein (PAPP-A), alpha-fetoprotein (AFP), unconjugated estriol ($uE3$), beta-human chorionic gonadotrophin ($beta-hCG$), and inhibin A ($inhA$). The concentrations of these markers in the maternal serum are expressed in a gestation-specific multiple of the median (MoM). The levels of these markers are constantly changing during pregnancy, making the testing time specific. The testing results are dependent upon maternal age, race, single versus multiple gestation, maternal diabetes melitus, in vitro fertilization, smoking, and previous testing. The most significant variable, however, is maternal weight. The increased blood volume in the women with higher BMIs decreases the concentration of analyte levels (Tsai et al., 2015).

Place and Type of Birth

Although the safety and cost-efficiency of out-of-hospital birth, as well as vaginal birth after cesarean (VBAC) for low-risk pregnancy, has been established, obesity increases the level of risk for women contemplating either an out-of-hospital birth or a VBAC. With the increase in the level of BMI and in the number of VBAC attempts, the safety index decreases for the obese pregnant woman (Jevitt, 2009; Modder & Fitzsimons, 2010).

Currently available data indicate that, even if VBAC is successful, the neonatal risks are increased (Belogolovkin et al., 2012). In addition, medical costs and the rate of puerperal infections are increased (Edwards, Harnsberger, Johnson,
However, the authors of a recent study concluded that VBAC success is increased among overweight and obese women who lose weight between the first and second pregnancy (Callegari, Sterling, Zelek, Hawes, & Reed, 2014).

**Consideration of Intrapartum Anesthesia**

The greatest risks for both regional and general anesthesia complications occur in the obese pregnant woman with BMI greater than or equal to 40 kg/m² (ACOG, 2013; Jevitt, 2009; Modder & Fitzsimons, 2010). With regional anesthesia, the woman with a BMI greater than or equal to 40 kg/m² may have problems with positioning, distorted anatomical landmarks, and significant layers of adipose tissue that can interfere with anesthesia placement (ACOG, 2013). With general anesthesia, the woman can have difficult or failed endotracheal intubation from edema and excessive tissue in the airway (ACOG, 2013).

**Pregnancy After Bariatric Surgery**

As the obesity epidemic increases among women of childbearing age, so has bariatric surgery. According to the American Society for Metabolic and Gastric Surgery, there were 179,000 gastric weight-loss surgeries performed in 2013, 50% of the surgeries among women of childbearing age (18–45 years old; Maggard et al., 2008). Women with exclusively Class III obesity (BMI 40 or above) or Class I and II obesity (BMI 30–39) in conjunction with one or more co-morbid conditions are eligible for gastric weight-loss surgery. Co-morbid conditions include insulin-resistant type 2 diabetes mellitus, chronic hypertension, hyperlipidemia, obstructive sleep apnea, osteoarthritis, or cardiovascular disease (Landsberger & Gurewitsch, 2007).

Gastric procedures to enhance weight loss are either constrictive or malabsorptive. The constrictive procedures (the lap-band or gastric sleeve) changes the capacity and emptying time of the gastrointestinal tract. The malabsorptive procedure (Roux-en-Y gastric bypass) changes the absorption of macro- and micronutrients. Both the constrictive and malabsorption procedures alter sensations of hunger and satiety (Landsberger & Gurewitsch, 2007).

Women who conceive and give birth after gastric weight-loss surgery have specific risks depending upon which gastric procedure was performed (Maggard et al., 2008). Essentially, the procedures that cause malabsorption tend to cause greater weight loss while also causing significantly more nutrient deficiency (Landsberger & Gurewitsch, 2007). The literature is evolving on this topic.

The literature on pregnancy after weight-loss surgery (PWLS) addresses whether risk increases, decreases, or just differs with pregnancy. At this juncture, the studies on PWLS are observational and must be appraised with caution. In a meta-analysis, Galazis, Docheva, Simillis, and Nicolaides (2014) found that, compared to matched controls, in PWLS women there was a reduction in large-for-gestational-age (LGA) neonates, a decrease in incidences of pre-eclampsia, and a decrease in gestational diabetes. However, the authors also found that there were increases in maternal anemia, small-for-gestational-age (SGA) neonates, preterm birth, and admission to the neonatal intensive care unit.
Evidence-Based Midwifery Care for Obese Childbearing Women

6

Best Practices in Midwifery During the Antepartum Period

Nutrition and Glucose Management

At the first prenatal visit, accurate height, weight, and BMI should be obtained and recorded. Based on the woman’s BMI, the midwife should explain appropriate weight gain and the risks associated with obesity in pregnancy (ACOG, 2013; Jevitt, 2009; Moddler & Fitzsimons, 2010). The 1-hour 50-g glucose tolerance test should be administered in the first trimester or at the first pregnancy encounter to all women with prepregnancy obesity. If the result is negative, the test should be repeated at 26 to 28 weeks gestation (ACOG, 2013; Jevitt, 2009). British guidelines recommend that women with prepregnancy obesity complete a 75-g 2-hour glucose tolerance test at 24 to 28 weeks gestation (Modder & Fitzsimons, 2010). The WHO recommends that all women have a glucose screen at 24 to 28 weeks gestation (1999).

Monitoring for Congenital Anomalies and Fetal Well-Being

The midwife needs to counsel the obese pregnant woman about options available for screening for congenital anomalies, including information about the limitations of ultrasound among pregnant obese women (ACOG, 2013; Jevitt, 2009; Modder & Fitzsimons, 2010). These limitations include less accuracy in detection of aneuploidy markers. With the obese woman, the ultrasonographer needs to use higher frequency and lower frequency probes, image brightness alternation, and scanning where there is less subcutaneous fat (the umbilical window or suprapubic/under the pannus; Tsai et al., 2015). Despite the limitations of maternal serum analyte testing, the midwife should offer this testing to all obese pregnant women as the rates of congenital anomalies in this population are increased (ACOG, 2013; Jevitt, 2009; Modder & Fitzsimons, 2010).
Planning for Place and Type of Birth

Women with a prepregnancy BMI greater than or equal to 35 should plan to give birth in a hospital for maternal and fetal safety. As for women with BMI between 30 and 34, individual risk assessment can determine the safety of out-of-hospital birth (Modder & Fitzsimons, 2010). The increased risks of both shoulder dystocia and postpartum hemorrhage should be considered when offering hydrotherapy or water birth. In water-birth conditions, the midwife may be limited with maneuvers and must be ready for the possibility of having to lift the woman out of the tub without her full cooperation. For obese women requesting VBAC, the midwife must inform the women and family of both maternal and neonatal risks, especially with very high BMI (Jevitt, 2009).

Discussion About Intrapartum Anesthesia

If needed, the ACOG (2013) recommends regional rather than general anesthesia for the obese pregnant woman. The midwife should counsel the woman on anesthesia options and limitations as well as request, if at all possible, an anesthesia consultation prior to the onset of labor.

Midwifery Care of the Post-Bariatric Pregnant Woman

Women should wait at least 12 to 18 months after bariatric surgery before attempting pregnancy (ACOG, 2013). Once pregnancy occurs, the midwife should request a nutrition consultation (Jevitt, 2009). The PWLS woman should be screened for anemia by measuring serum iron, ferritin, folate, and vitamin B₁₂ levels. In addition, serum levels of calcium, phosphate, and 25-OH vitamin D should be assessed and, if abnormal, parathyroid hormone levels should be tested. If serum albumin levels are low, the woman may have insufficient protein intake and will need dietary counseling (Landsberger & Gurewitsch, 2009).

As with the pregnant obese woman, the midwife should recommend that the PWLS woman with a prepregnant BMI of 30 or higher be screened for gestational diabetes in the first trimester or at the first prenatal encounter (Jevitt, 2009). Most PWLS women cannot tolerate the 50-g glucose tolerance test because this technique is likely to cause dumping syndrome. Instead, a viable option is to test fasting blood glucose level and 2-hour postprandial glucose level using cut-offs of 95 and 120, respectively (Landsberger & Gurewitsch, 2007).

LABOR, BIRTH, AND OBESITY

Compared to normal-weight women, initiation and progression of labor in obese women are more difficult and more likely to result in unplanned cesarean section (Chu et al., 2007a; Poobalan, Aucott, Gurung, Smith, & Bhattacharya, 2009). Although comprehensive guidelines for the intrapartum care of obese women do not yet exist, reported clinical studies demonstrate that careful labor management strategies can decrease the potential for unnecessary interventions,
including unplanned cesarean section (Abenhaim & Benjamin, 2011; Leeman & Leeman, 2003).

**Cervical Ripening**

Obesity may cause delay in cervical ripening at the end of pregnancy (Wendremaire et al., 2012). In general, obese women have lower Bishop scores in late pregnancy compared to nonobese women (Zelig, Nichols, Dolinsky, Hecht, & Napolitano, 2013). These women are more likely to have prolonged pregnancies (>41 weeks; Arrowsmith, Wray, & Quenby, 2011; Usha-Kiran et al., 2005) and comorbidities such as hypertension and preeclampsia (Mission, Marshall, & Caughey, 2013). Obese women are more than twice as likely to have induced labor compared to nonobese women (Sebire et al., 2001). In addition, induction is twice as likely to fail because they may start the induction with low Bishop scores (<3; Gauthier et al., 2011; Zelig et al., 2013).

**Labor Progression**

Time of labor lengthens as maternal BMI increases, with labors (4–10 cm dilation) among morbidly obese nulliparous women lasting up to 7 hours longer than those of nonobese women (Carlhall, Kallen, & Blomberg, 2013; Hirshberg, Levine, & Srinivas, 2014; Kominiarek et al., 2011; Walsh, Foley, & O’Herlihy, 2011). Slow labor in obese women was initially thought to be caused by excess adipose tissue causing obstruction of the pelvis in late labor and at birth (Crane, Wojtowycz, Dye, Aubry, & Artal, 1997). More recent findings are that labor in obese women is actually slowest during latent and early first-stage labor, from 4 to 7 cm of cervical dilation (Fyfe et al., 2011; Kominiarek et al., 2011; Vahratian et al., 2004).

Obese women are more likely than normal-weight women to have slightly larger babies. Yet in studies that control for maternal diabetes, heavier fetal weight is not associated with labor arrest or slowing of the labor curve (Verdiales, Pacheco, & Cohen, 2009; Zhang, Bricker, Wray, & Quenby, 2007). Slow labor progress in the obese woman is theorized to be the result of abnormalities in the powers of labor, or myometrial dysfunction. Multiple physiologic alterations appear to cause inefficient myometrial contraction in obese women (Bogaerts et al., 2013; Parkington et al., 2014; Zhang et al., 2007). Cervical exams in obese women, especially morbidly obese women, can be difficult for both woman and provider. Excess vaginal and perineal adipose tissue can obscure pelvic landmarks, leading to the impression that fetal station is artificially high (Schmied, Duff, Dahlen, Mills, & Kolt, 2011).

**Second-Stage Labor and Birth**

Once obese women reach the second stage of labor, their vaginal birth rate is the same as normal-weight women’s (Buhimschi, Buhimschi, Malinov, & Weiner, 2004; Robinson et al., 2011). Second-stage labor is not lengthened in obese women (Kominiarek et al., 2011). In fact, multiparous obese women have significantly
shorter second-stage labors compared to multiparous, nonobese women (Suidan, Rondon, Apuzzio, & Williams, 2015). Maternal obesity is not an independent risk factor for shoulder dystocia (Tsuriel, Sergienko, Wiznitzer, Zlotnik, & Sheiner, 2012). However, obesity combined with gestational diabetes is associated with a 70% increased risk of shoulder dystocia (Catalano et al., 2012).

Best Practices in the Intrapartum Period

Cervical Ripening

When caring for the obese woman during labor induction, the midwife should provide anticipatory guidance that the process may take several days (Gauthier et al., 2011). As with all women undergoing induction of labor, cervical ripening methods should be continued until the obese woman achieves active labor or the Bishop score is greater than or equal to 6 (Suidan, Rondon, Apuzzio, & Williams, 2015). When choosing a cervical ripening agent for the obese woman, the midwife should avoid dinoprostone (Cervidil or Prepidil), as this agent has a 50% failure rate among obese women. With these cervical ripening agents, there are no differences in nonreassuring fetal heart rate tracing, NICU admission, or postpartum hemorrhage (Suidan, Rondon, Apuzzio, & Williams, 2015). Vaginal examination should be minimized during cervical ripening among obese women, as the longer length of labor may increase their risks of developing chorioamnionitis (Briese, Voigt, Wisser, Borhardt, & Straube, 2010).

Labor Progression

Some obese women feel stigmatized and humiliated during labor by their clinicians (Furber & McGowan, 2011). It is crucial that the midwife sensitively supports obese women through labor. Because their labors may proceed more slowly than normal-weight women, obese women frequently have a more lengthy admission in early labor, augmentation with synthetic oxytocin (Pitocin), artificial rupture of membranes, and unplanned cesarean birth (Abenhaim & Benjamin, 2011; Carlson & Lowe, 2014a). Oxytocin augmentation, the leading treatment for slow labor, is less likely to end with vaginal birth in obese women compared to normal-weight women (Usha-Kiran et al., 2005). Adjusting synthetic oxytocin dosage for maternal BMI is not practiced, although several studies of induction protocols show that obese women require longer administration times, larger total doses, and greater per minute titrations to achieve cervical change or vaginal delivery in comparison with normal-weight women (Hill, Reed, & Cohen, 2014; Pevzner, Powers, Rayburn, Rumney, & Wing, 2009; Walsh et al., 2011). The midwife should be prepared for the increased likelihood of postpartum hemorrhage when synthetic oxytocin is used.

The higher a woman's BMI at the time of labor, the slower her labor is likely to proceed. In the presence of reassuring maternal and fetal status, midwives can encourage the obese woman to rest, ambulate, and use hydrotherapy or massage in early labor. In most obese women, it is best to delay hospital admission until the active phase of labor, usually after 6 cm (Kominiarek et al., 2011). Because
obese women have longer labors, the midwife should avoid frequent vaginal exams: using these evaluations only when labor progress is abnormally slow in view of the woman's BMI or if other problems are suspected. Artificial rupture of membranes should be avoided and, if used, should be performed only with the active phase of labor. If synthetic oxytocin augmentation is used, it is important that the midwife allows more time for cervical change than with nonobese women.

Monitoring fetal heart rate and contraction characteristics is often challenging in obese women, especially when BMI is greater than or equal to 35 kg/m². Obese women are eligible for intermittent fetal heart rate monitoring as per the Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN) high-risk guidelines (AWHONN, 2015). If continuous fetal heart rate monitoring is needed, abdominal fetal electrocardiogram, if available, is more reliable than ultrasound Doppler systems (Cohen & Hayes-Gill, 2014). Internal fetal heart rate monitoring is very reliable, yet should be avoided because it may increase obese women’s already higher risk of chorioamnionitis (Briese et al., 2010).

Obese women’s labor contractions can be monitored externally using palpation, tocodynamometer, or electrohysterogram (EHG; Cohen & Hayes-Gill, 2014). Intravenous pressure catheters (IUPCs) provide the most accurate contraction monitoring but require membranes to be ruptured for insertion, which, like internal fetal heart rate monitoring, increases the obese women’s already higher risk of the potential for chorioamnionitis (Euliano et al., 2013). When continuous contraction monitoring is necessary, EHG provides a reliable, noninvasive contraction-monitoring alternative to IUPC and is not affected by obesity. The midwife should be cautious when using IUPC to judge the adequacy of contractile force in obese women. Although the IUPC readings in late first-stage labor are equivalent to nonobese women, obese women still require more time than nonobese women to make cervical changes (Chin, Henry, Holmgren, Varner, & Branch, 2012). Watchful waiting is the key to successful labor assistance when working with obese women (Carlson & Lowe, 2014b).

Second-Stage Labor and Birth

Genital tract trauma following vaginal birth is not increased among obese compared to nonobese women, even among nulliparas (Gallagher et al., 2014). Because gestational diabetes risk rises with each increase in BMI and the current GDM screening fails to identify some women who are diabetic, midwives should be especially vigilant for possible shoulder dystocia. With increased risk of both shoulder dystocia and postpartum hemorrhage among the obese women with gestational diabetes, water birth is a concern because the maneuvers used by the midwife are limited in water and tubs (Jevitt, 2009). Because birth is more frequently complicated in obese women with BMI greater than or equal to 35 kg/m², neonatal intensive care services should be available (Modder & Fitzsimons, 2010). When caring for the morbidly obese woman, it is important that the midwife alerts consulting physicians and hospital teams so that arrangements can be made to acquire special hospital beds or special tables, blood products, and extra personnel in the birth or operating room, if necessary.
OBESITY IN THE POSTPARTUM

Postpartum Hemorrhage

The obese pregnant woman is at greater risk for atonic and nonatonic postpartum hemorrhage (Bloomberg, 2011; Wetta et al., 2013). Establishing intravenous (IV) access may be more complicated in women with obesity and access should be established before it becomes imperative (Modder & Fitzsimons, 2010).

Postnatal Thromboprophylaxis

The obese woman is at greater risk for thromboembolism during the postpartum period. The risk of thromboembolism increases even further in the event of an operative delivery, prolonged hospitalization, or immobility (Larson et al., 2007).

Breastfeeding and Lactation

Obese women are at greater risk for poor breastfeeding outcomes with poor initiation and duration rates, difficult positioning, and impaired lactogenesis (Amir & Donath, 2007; Lepe et al., 2011; Mok et al., 2008; Rasmussen & Kjolhede, 2004).

Depression and Anxiety

Pregnancy is a time of emotional vulnerability and increased need for social support. Higher BMI both before and at the end of the childbearing cycle is positively associated with depression. Social support may be lower, reaching lowest levels among morbidly obese women (Dotlic et al., 2014).

Postpartum Follow-Up Care

The prime time to decrease the risks of obesity and pregnancy is prior to the pregnancy itself. A modest 10-pound weight loss prior to a subsequent pregnancy has shown to decrease the likelihood of gestational diabetes in the subsequent pregnancy (ACOG, 2013). Obese women with a history of gestational diabetes have a significant risk of developing type 2 diabetes after pregnancy even though the diabetic state often does not develop for several years (Bellamy, Casas, Hingorani, & Williams, 2009; Kim, Newton, & Knopp, 2002; Lauenborg et al., 2004).

Best Practices in the Postpartum

Postpartum Hemorrhage

Women with BMI greater than or equal to 40 kg/m² should have IV access established prior to the third stage of labor. The midwife should consider active management of the third stage of labor (AMTSL), including prophylactic misoprostol for women with BMI greater than or equal to 30 (Modder & Fitzsimons, 2010). Use of synthetic oxytocin in obese women may require higher titrations to produce
desired results, but postpartum hemorrhage risk is increased and preparations should be in place.

**Postpartum Thromboprophylaxis**

All women with prepregnancy BMI greater than or equal to 30 should be encouraged to ambulate as soon as possible after the birth. Thromboprophylaxis, depending on mode of delivery and other risk factors, is recommended (ACOG, 2013; Jevitt, 2009; Modder & Fitzsimons, 2010). For women with a BMI of 40, full postnatal thromboprophylaxis should be prescribed regardless of the mode of delivery. Fractionated and low molecular weight heparin for postnatal thromboprophylaxis is recommended (ACOG, 2013; Modder & Fitzsimons, 2010).

**Breastfeeding and Lactation**

Lactation can facilitate weight loss. Decreasing caloric intake by 500 cal/d during breastfeeding does not affect the quality or quantity of the mother’s milk. The midwife should request a lactation specialist referral immediately in the postpartum period to promote maternal confidence and address potential lactation difficulties (Jevitt, Hernandez, & Groer, 2007; Modder & Fitzsimmons, 2010).

**Depression and Anxiety**

The midwife should administer the Edinburgh Postnatal Depression Scale (or use a similar validated tool) in the postpartum period to identify obese women at risk for depression (Jevitt, Zapata, Harrington, & Berry, 2006).

**Postpartum Follow-Up**

Women with BMI greater than or equal to 30 kg/m² and the diagnosis of gestational diabetes should have a diabetic surveillance at 6 weeks postpartum and be screened for insulin-resistance risk factors at least annually. Attention to diet and exercise is essential to decrease BMI prior to a subsequent pregnancy (ACOG, 2013; Jevitt, 2009; Modder & Fitzsimons, 2010).

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**USING THE EVIDENCE FOR BEST PRACTICE**

**Case Study 6.1 Best Practices With the Obese Pregnant Woman**

M.K. is a 31-year-old, single, Caucasian primigravida. She seeks care at a midwifery-run clinic in rural Appalachia staffed by three midwives who attend births at the local community hospital. Two obstetricians at the hospital provide consultation, collaboration, and referral.

At her first visit, M.K. is 10 weeks gestation by last normal menstrual period and the midwife calculates her current BMI to be 39 kg/m². M.K. states that she probably
has lost 5 to 10 pounds over the past month as a result of nausea and occasional episodes of heartburn. Adhering to best-practice guidelines for the care of obese women during pregnancy, the midwife counsels M.K. about the risks associated with obesity in pregnancy for her and her child, including the limitations of ultrasound. The midwife informs M.K. about ways to decrease some risks by minimizing weight gain and ensuring daily intake of a prenatal vitamin daily, 5 mg of folic acid, and 10 mcg of vitamin D. The midwife discusses adequate physical activity during pregnancy and refers M.K. to a dietician for guidance on food choices to maximize nutrition and minimize weight gain. In addition to obtaining HgbA1C as part of the initial labs, the midwife also advises having a 50-g glucose tolerance test done now and again at 26 weeks gestation. A maternal serum marker screening is scheduled and the midwife explains the test in light of maternal obesity. The midwife also provides anticipatory guidance on planned place of birth.

M.K.’s pregnancy proceeds uneventfully and, at 39 weeks gestation, she arrives at the hospital with spontaneous rupture of membranes and clear amniotic fluid. Her total pregnancy weight gain has been 11 pounds, her blood pressure has remained normotensive, and all blood sugar screenings have been normal. Keenly aware that M.K.’s prepregnancy BMI was 39 kg/m², the midwife consults with the obstetrician on call. M.K.’s initial assessment reveals normal vital signs, category 2 fetal heart tracing, cervix at 4 cm, 100% effacement, and fetal head at zero station with estimated fetal size 8.5 to 9.0 pounds. The midwife and obstetrician agree to watchful waiting because it is likely that M.K.’s labor progression will be slower than normal as a result of her obesity. The midwife notifies the anesthesiologist on-call and the nurse places an IV access lock. M.K.’s labor progresses slower than expected but her vital signs remain stable and her baby tolerates labor well. At 15 hours after admission, M.K.’s cervix is completely dilated and she feels the urge to bear down. After 25 minutes of spontaneous pushing, M.K. gives birth to a vigorous infant weighing 9 pounds, 1 ounce and sustains a first-degree perineal laceration. The midwife institutes AMTSL while M.K. and her infant have skin-to-skin contact. The infant nurses well and the midwife orders lactation consultation as needed to help M.K. with breastfeeding. The midwife encourages M.K. to ambulate as soon as possible.

Exemplar of Best Practice

At her 6-week postpartum visit, M.K. is exclusively breastfeeding, has lost 15 pounds since the time of birth, and feels well. The Edinburgh Postnatal Depression Scale is within defined limits, as is her 75-g glucose tolerance test. The midwife praises M.K. and counsels her about weight management during the postpartum period and prior to subsequent pregnancies. The midwife also encourages M.K. to follow up with her primary care physician for periodic evaluation of blood sugars.

With careful midwifery management, M.K. has had a healthy pregnancy and infant.

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