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Kathryn Osborne

Frontier Nursing University

Lisa Hanson

Marquette University, lisa.hanson@marquette.edu

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Labor Down or Bear Down: A Strategy to Translate Second-Stage Labor Evidence to Perinatal Practice

Kathryn Osborne

Department of Midwifery and Women's Health, Frontier Nursing University, Hyden, Kentucky

Lisa Hanson

Marquette University, College of Nursing, Milwaukee, Wisconsin

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ABSTRACT

Scientific evidence supports spontaneous physiologic approaches to second-stage labor care; however, most women in US hospitals continue to receive direction from nurses and birth attendants to use prolonged Valsalva bearing-down efforts as soon as the cervix is completely dilated. Delaying maternal bearing-down efforts during second-stage labor until a woman feels an urge to push (laboring down)

results in optimal use of maternal energy, has no detrimental maternal effects, and results in improved fetal oxygenation. Although most commonly used with women who are undergoing epidural anesthesia, laboring down is just one component of physiologic second-stage labor care that can be used to achieve optimal maternal and neonatal outcomes for women with or without an epidural. Prior efforts to translate evidence regarding second-stage labor care to practice have not been successful. In this article, the scientific evidence for second-stage labor care and previous efforts at clinical translation are reviewed. The Ottawa Hospital Second Stage Protocol is presented as a model with potential to allow translation of evidence to practice. Recommendations to enhance widespread adoption of evidence-based practice are provided, including improved collaboration between nurses and birth attendants.

Key Words

laboring down, maternal positions, pushing, second-stage labor

Historically, the second stage of labor has been defined as the time between complete cervical dilatation and the birth of the infant.¹ This labor phase is often characterized by frequent, regular contractions and an overwhelming maternal urge to bear down. Immediately following the identification of complete cervical dilatation, many women are instructed to assume a lithotomy position and bear down using Valsalva efforts against a closed glottis. These instructions often include commands for the woman to take a deep breath at the onset of each contraction and hold it while sustaining the bearing-down effort to the count of 10; this pattern of breath-holding for 10 seconds and bearing down is repeated for the duration of each contraction. This approach is both *active and directive*. However, scientific evidence has demonstrated that these active-directive approaches do not lead to optimal maternal and neonatal outcomes.² In addition, despite the long-held assumption that feeling an urge to push marks the onset of the second-stage, many women reach complete dilatation and experience no urge to bear down.² Recognition of this delay in the urge to push merited a number of important scientific studies on this phenomenon, including the identification of optimal second-stage labor care practices.

The resulting alternative to an active-directive approach to second-stage is called physiologic secondstage labor care. The physiologic approach includes encouraging women to wait until they feel an urge to push before initiating spontaneous bearing-down efforts, which is also commonly known as *laboring down*. Once women feel an urge to push, they are supported to bear down in response to the natural urges and sensations they feel, rather than in response to ritualistic commands from a care provider about when and how to push.² Viewed in this way, second-stage labor has been redefined on the basis of the observation that it is at least biphasic; women experience a phase of passive descent, followed by the urge to actively bear down.³

An evidence-based approach to maternal bearing down based on the woman's physical and emotional readiness has been recommended for decades.²⁻⁷ Improved neonatal outcomes when laboring women are upright rather than laying on their backs while pushing have also been documented and include improved fetal oxygenation and Apgar scores.^{6,8,9} This approach is both *physiologic and supportive* and is based on scientific evidence, although it is underutilized. Table 1 compares and contrasts active-directive and physiologic-supportive second-stage labor care approaches.

Translating the scientific evidence to clinical practice has been exceedingly difficult in many hospitals¹¹⁻¹⁴ despite a plethora of scientific evidence that the physiologic approach to second-stage labor care results in improved maternal and neonatal outcomes. The purpose of this article was to provide perinatal providers, including nurses, with tools and strategies to implement evidence-based second-stage labor care that includes physiologic-supportive practices and laboring down.

THE IMPERATIVE FOR CHANGE

Worldwide, there is great interest in promoting normal physiologic birth.¹⁵ Normal spontaneous births are threatened by rising rates of interventions such as induction of labor and cesarean birth.¹⁶ Most American women continue to give birth in supine positions^{10,14} using directed Valsalva bearing-down efforts. While pushing in the supine position, the laboring woman must use tremendous bearing-down efforts to overcome an antigravity disadvantage as she attempts to push her fetus uphill through the curve of Carus.

In 2007, Lamaze International published a position paper intended to describe 6 care practices that serve to promote and protect normal birth. The fifth care practice in the list was “spontaneous pushing in upright or gravity neutral positions.”¹⁷ The combination of supine positions and Valsalva bearing-down efforts places the fetus at a hemodynamic disadvantage.¹⁰ Conversely, the use of upright positions during the second stage of labor results in a decrease in the incidence of abnormal fetal heart rate (FHR) patterns and severe maternal pain and shortens the duration of the second stage of labor.¹⁸

Normal birth is supported by a series of care practices that allow the process of labor and birth to unfold without interference.^{19,20} For example, women do not self-select supine birth positions or sustained Valsalva bearing-down efforts. Instead, women more often seek upright positions that promote improved placental perfusion and bear down multiple times per contraction while releasing air through an open glottis.¹⁰ Spontaneous pushing efforts vary in strength and frequency and have been demonstrated to result in labor progress.⁶ Adhering to care practices that support normal birth, including the use of appropriate parameters for duration of the first and second stages of labor, is a strategy that may reduce the incidence of primary cesarean birth and the morbidity associated with subsequent surgical deliveries.^{10,16}

Certified nurse midwives, who attend an estimated 10% of the births in the United States,¹⁴ have readily adopted second-stage labor practices that promote physiologic birth.^{19,21,22} However, most women who give birth in hospitals in the United States experience outmoded second-stage labor care practices that are not based on scientific evidence. For example, more than half of the women who responded to the *Listening to Mothers II Survey* gave birth on their backs and had received directions on when and how to push.¹³ The more recent *Listening to Mothers III Survey* found that 5 years later women continued to report giving birth primarily on their backs. Details about the pushing instructions that women received were not included in the third survey.¹⁴

Table 1. **Active/directed and physiologic/spontaneous second-stage care practices^a**

Active: Directed		Physiologic: Spontaneous
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Breathing	Valsalva efforts, breath held	Exhale, mouth open
Bearing down initiated	Complete dilatation	When woman perceives the urge to push or when the head is visible at the vaginal introitus
Verbal cues	Provider-directed: Repeated 10 counts, often “purple pushing: that results in petechiae	Spontaneous: Support follows the woman’s own urges [5-6 BDEs of 3-5 s each]
Noise	Closed glottis: Silent	Open glottis: Grunts
Muscles	Generalized tightening	Only abdomen tensed
Legs	Often held up and back	No leg holding
Fatigue	More pronounced	Woman controls own efforts
Other effects	↓ cardiac output, placental perfusion, and contraction quality	Synchrony of uterus and respiratory pressures work
Perineum	Tightening, with more rapid distention and more tissue damage	Gradual distention; improved rates of intact tissue
Fetus	Significant decelerations	Improved oxygenation

Abbreviation: BDE, bearing-down effort.

^a From Roberts and Hanson.¹⁰

Second-stage labor is a time when these care practices can result in iatrogenic complications and a cascade of interventions. For example, when a woman is positioned in a supine position (with the head of the bed elevated at a 30° angle), supine hypotension, altered fetal acid-base balance, and FHR abnormalities can result.² If the same woman also follows specific instructions to bear down with sustained Valsalva bearing-down efforts, maternal and fetal hemodynamics can be further jeopardized.³ Therefore, an otherwise low-risk laboring woman with a healthy fetus in the supine position using sustained Valsalva efforts may be at risk for interventions that are the direct result of these care practices.^{2,3} Valsalva bearing-down efforts are also associated with both short- and long-term pelvic floor and urogynecologic consequences.⁷ The authors of a large randomized trial examining the effects of coached maternal pushing during second-stage labor concluded that Valsalva bearing-down efforts placed women at risk for postpartum and long-term pelvic floor dysfunction and that withholding directions to push using Valsalva efforts could modify this risk.⁷ The logical alternative is to support the woman’s spontaneous bearing-down efforts.

Led by the National Institute of Child Health and Human Development and the National Institutes of Health, the *Consortium on Safe Labor* project has identified modifiable risk factors that contribute to the rising rates of primary cesarean birth. Among the risk factors, arrest of any stage of labor was identified as having limited diagnostic accuracy and a large effect on first cesarean births.¹⁶ Recommendations of the consortium include allowing adequate time for the progression of the latent and active phases of both the first and second stages of labor. Furthermore, the consortium found that the adequate time for both the first and second stages of labor is longer than has been traditionally estimated using the Friedman curve.¹⁶ The active first-stage of labor, traditionally measured from the time the cervix is 4 cm dilated, is more accurately described as beginning after the cervix reaches 6-cm dilatation, and the 95th percentile of second-stage labor in nulliparous women without an epidural is 2.8 hours; the 95th percentile of second-stage labor for nulliparous women with an epidural is 3.6

hours.^{16,20} Recent dissemination of these consortium recommendations in a leading obstetric journal is a hopeful sign that more perinatal care providers will increase their knowledge about, and more widely implement, evidence-based practice during the second-stage of labor.

EVIDENCE IN SUPPORT OF CHANGING SECOND-STAGE LABOR CARE

The 2003 clinical practice bulletin of the American College of Obstetricians and Gynecologists recommended specific guidelines for second-stage labor total duration, based on parity and the presence of epidural anesthesia.²³ More recently, efforts have been made to reexamine labor duration in samples of contemporary laboring women. For clinical practice, it has been suggested that the upper limits for duration of normal labor fall within the 95th percentile. The 95th percentile of second-stage duration in a nulliparous woman with epidural anesthesia is approximately 4 hours.^{16,20,24} Using this guideline would add an hour to the total duration of second-stage labor. These 2 redefined parameters relative to the duration of second-stage labor are presented in Table 2. It is important to note that in the development of the parameters described in Table 2, the traditional measure of second-stage was used (ie, the time from complete cervical dilatation until the birth of the infant). Measuring the duration of second-stage labor in this way, rather than measuring the time spent actively pushing, fails to account for the widely accepted practice of laboring down, where women do not begin actively pushing at complete dilatation.¹⁰

The active-directive approach to second-stage labor care appears to be based on a desire to limit the duration of second-stage labor. This was primarily based on an assumption that it was the total duration of second-stage labor that resulted in the potential for fetal acidosis. The use of epidural anesthesia has allowed researchers to document the 2 distinct phases of the second-stage of labor, to identify the maternal-fetal benefits of delayed bearing down, and to develop strategies to support the latent phase of labor and await physiologic readiness to push at the onset of the phase of active bearing down.¹⁰

Table 2. Upper limits of second-stage labor total duration^a

	Epidural anesthesia	No epidural anesthesia
Primipara		
ACOG	3 h	2 h
95th percentile	4 h	3 h
Multipara		
ACOG	2 h	1 h
95th percentile	2 h	1 h

Abbreviation: ACOG, American College of Obstetricians and Gynecologists.

^a From Zhang et al²⁰ and American College of Obstetricians and Gynecologists.²³

Researchers have been gathering evidence relative to laboring down for more than 3 decades. Among the earliest findings was a recognition of the phasic nature of second stage.^{3,9,25,26} Similar to the phases of the first stage of labor, the 2 phases of second-stage labor are most commonly described as “latent” and “active.”² Laboring down is supported by a series of care practice. These include continuing assessments of fetal and maternal well-being, recognizing and honoring the latent phase of the second

stage, and finally supporting spontaneous bearing down when either the woman identifies an urge to push or the head is visible at the vaginal introitus.¹⁰

The latent phase of second stage is currently described as the time from complete cervical dilatation until the woman begins actively bearing down. During the latent phase of second-stage labor, the woman may feel little or no urge to bear down, particularly if the fetal head has not advanced past the ischial spines to at least a +1 station.³ Women are encouraged to rest during the latent phase and conserve their physical and emotional energy for when it will be needed during the period of active bearing-down. Some women can sleep or experience significant rest during the latent phase of the second stage of labor.

As the fetal head passively descends down the birth canal and reaches the muscles of the pelvic floor, the baroreceptors are triggered and most women begin to feel an urge to bear down,³ marking the onset of the active phase of second-stage labor. This maternal response has been referred to as the “fetus ejection reflex.”²⁷ Alternatively, the onset of the phase of active bearing-down can be signaled when the fetal head is visible at the vaginal introitus. Bearing-down efforts are likely to be more effective during the active phase, as the progression of the fetal presenting part is both a sign of progress and a stimulant of continued progress.¹⁰ Waiting to bear down until experiencing an overwhelming urge to push shortens the duration of active bearing down and allows women in second-stage labor a period of rest.³

Most of the research examining the safety and efficacy of delayed pushing has been conducted with women undergoing epidural anesthesia. The evidence for laboring down has been identified in an extensive series of randomized controlled trials (RCTs) and metaanalyses. This substantial body of high-level scientific evidence has resulted in the use of laboring down to allow women with an epidural to rest during passive descent of the fetal head until experiencing an urge to bear down. Supporting studies have indicated that laboring down may result in a longer mean duration of second stage of labor but a shorter mean duration of active pushing^{28–30} or no significant change in duration of active pushing.^{30–33} No significant differences in maternal morbidity have been reported with laboring down.^{28–32}

Two meta-analyses have confirmed the following major outcomes for women who are allowed to labor down: longer total second-stage duration but shorter duration of active pushing than women who push immediately.^{34,35} One meta-analysis of RCTs conducted to examine the effect of delayed versus immediate pushing during second stage identified a statistically significant reduction in operative deliveries with delayed pushing (relative risk, 1.22; 95% confidence interval, 1.05-1.42).³³ Laboring down has also been associated with less reported maternal fatigue than immediate bearing down.²⁹

Most investigators have also found no significant difference in neonatal outcomes between women who push immediately after complete cervical dilatation and women who delay pushing.^{28–32} In an RCT examining the effect on fetal well-being of immediate closed-glottis pushing versus delayed open-glottis pushing, investigators identified that delayed open-glottis pushing resulted in significantly improved outcomes: (a) lower rates of fetal oxygen desaturation (FSpO₂, measured by a probe that rested against the fetal face or forehead during labor, as 2.7 vs 7.9, $P = .02$); (b) fewer prolonged FHR decelerations (1.9 vs 3.3, $P = .05$); and (c) fewer variable FHR decelerations (15.6 vs 22.4, $P = .03$).³⁶

Similarly, investigators examining blood gasses have identified higher levels of lactic acid and pCO₂ and lower pH values during active pushing, indicating the fetal benefits of a shorter duration of active pushing.²⁶

A recently conducted retrospective cohort analysis had different findings. Frey and colleagues³⁷ studied the medical records of 5290 women who were admitted in active labor with a full-term pregnancy to a large tertiary care center between 2004 and 2008. The authors' intent was to compare the outcomes of 471 women (8.9%) who used delayed pushing (defined as pushing initiation >1 hour after complete cervical dilatation) with the outcomes of 4819 women (91.1%) who pushed immediately following a diagnosis of complete cervical dilatation. Of the 471 women in the delayed pushing group, 288 (61.1%) were nulliparous; the remaining 183 women (38.9%) had previously given birth. The findings revealed that only 9 nulliparous women (3.1%) and 6 multigravidas (3.3%) had cesarean births. Furthermore, 24% of the nulliparous women who delayed pushing and 12% of the multiparous women who delayed pushing had operative vaginal deliveries. Of the 4819 women who pushed immediately, 20.4% of the nulliparous women and 7.5% of the multiparous women had operative vaginal deliveries. These researchers concluded that delayed pushing was significantly associated with increased rates of cesarean delivery ($P = .01$) and forceps- or vacuum-assisted birth ($P \leq .01$), maternal fever ($P \leq .01$), and lower fetal cord blood arterial pH values ($P = .03$).³⁷ The methods used for data collection in this study (chart review) make it impossible to ensure the use of consistent intrapartum care practices between groups. As a result, the degree to which variations in care practices, such as liberal use of cesarean birth and forceps- or vacuum-assisted vaginal birth, influenced overall outcomes is unknown. Therefore, the retrospective nature of this study limits clinical utility and application of these findings. In addition, using a unique definition for delayed pushing (ie, beginning 1 hour after complete dilatation) makes any substantive comparisons with other studies difficult. Readers are encouraged to weigh the limited findings of this study against the substantive body of evidence in support of physiologic management of the second stage of labor, including delayed maternal bearing down.

SECOND-STAGE LABOR CARE: THE PERSISTENT GAP BETWEEN EVIDENCE AND PRACTICE

The term *evidence-based medicine* was first used in 1991 with a call to base medical practice on evidence obtained through empirical study, specifically randomized clinical trials.³⁸ At that time, data from controlled trials relative to perinatal medicine were being analyzed, systematically reviewed, synthesized, and made available as best evidence through the Oxford Database of Perinatal Trials,³⁸ which was first released in electronic format as *The Cochrane Pregnancy and Childbirth Database* in 1993.³⁹ Expanded to include the evaluation of research in almost every healthcare discipline, the *Cochrane Database of Systematic Reviews* has published more than 8000 systematic reviews of randomized trials and serves as a leading resource for evidence-based healthcare decision making.³⁹

Today, nursing recognizes evidence-based practice as central to delivering the highest quality of healthcare and achieving the best patient outcomes.⁴⁰ The first steps toward implementing evidence in practice involve accessing and critically evaluating a body of evidence about a clinical problem or question and translating the evidence into best practices that can be applied to the clinical setting.⁴⁰ Although systematic reviews of RCTs and meta-analysis remain the highest levels of evidence on every

evidence rating hierarchy, nursing and other disciplines have recognized that not all questions can be answered using only RCTs,⁴¹ particularly the complex questions faced by providers of maternity care.³⁸ Therefore, the evidence described here has included the examination of experimental, nonexperimental, and qualitative methods of inquiry.

Efforts to implement evidence-based second-stage labor practices in maternity units are not new. In 1994, the Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN) launched the *National AWHONN Second Stage Labor Nursing Management Research Utilization Project*.⁴² The purpose of that multisite project was to design a research-based protocol for second-stage labor management, implement the protocol, and evaluate the process of protocol implementation. The protocol called for a physiologic approach to second-stage labor care that included encouraging upright positions, position changes, and spontaneous bearing-down rather than responding to others’ commands for sustained Valsalva pushing efforts. Prior to protocol implementation, steps were taken to provide nurses on each of the participating units with research upon which the new protocol was based to prepare for a change in practice. The findings of the evaluation revealed that there were small changes in practice that occurred at some of the sites, but broad implementation of the new protocol and overall changes in practice were met with multiple barriers.¹² These barriers included nurses’ lack of trust in the evidence presented and their tendency to return to “old habits,” patients’ desire to approach second stage as they had with previous births (ie, with coached pushing), and high-levels of physician resistance to the new protocol.¹² Table 3 contains a synthesis of the outcomes of the AWHONN second-stage protocol implementation project, positive changes that occurred, and suggested strategies to remove barriers.

Fifteen years later, a similar study was conducted on 2 separate labor and delivery units to examine the degree of adoption of the *Ottawa Hospital Second Stage of Labor Clinical Practice Guideline (OHSSP)*. This clinical practice guideline called for the implementation of a waiting period of up to 2 hours to labor down following complete dilatation, before encouraging women with epidural anesthesia to initiate bearing-down efforts.⁴³ Use of the *OHSSP* has been demonstrated to be safe for mothers and babies¹ and is summarized in Table 4. The *OHSSP* contains a detailed approach, including an algorithm with highly specific second-stage care practices based on parity, the presence or absence of epidural anesthesia, and continued maternal and fetal assessments (station and position of the fetal head).⁴⁴ It includes several critical conditions that must be met for the safe application of delayed pushing: (a) the woman is at low risk (full-term pregnancy, cephalic presentation, and no other perinatal risk factors); (b) there is no prior Cesarean or other uterine scar; (c) the fetal heart tones are category 1; and (d) there is evidence of continual descent on hourly assessments.⁴⁴

Table 3. Summary of AWHONN second-stage protocol implementation, with suggested strategies to address barriers

Outcomes ^a	Barriers ^a	Suggestion Strategies to Remove Barriers
Opened disciplinary dialogs about second-stage labor care seen as effective	Difficult to stop the habit of “count to 10” instructions	Suggest the use of supportive phrases to replace directive “count to 10” instructions

Fewer exhausted mothers	Problematic for providers if the second-stage duration was perceived as too long	Review contemporary evidence about labor duration; focus on fetal-maternal condition rather than time
Success notable during night shift	Lack of clarity about how to support spontaneous pushing	Interdisciplinary collaboration with providers who use supportive strategies would provide an opportunity to role model successful approaches
Nurses were proud to participate	Physicians countermanded the nurses' supportive care with directive instructions	Encourage care providers to support and encourage spontaneous pushing
Nonlithotomy positions promoted	Supine position use persisted	

Abbreviation: AWHONN, Association of Women's Health, Obstetric and Neonatal Nurses.

^aOutcomes and barriers were summarized using Niesen and Quirk¹² and Mayberry and Strange.⁴²

Throughout the *OHSSP*, the use of Valsalva bearing-down efforts and supine positions is discouraged. Instead, women are supported in spontaneous bearing down and encouraged to choose a position of comfort and to change positions frequently.⁴⁴ Continued assessment of reassuring maternal and fetal status is essential to each portion of the protocol. Oxytocin augmentation may begin any time contractions are assessed to be inadequate. For all women with epidural anesthesia, bearing down may begin any time the fetal head is visible, and/or is at a station of +2 or lower, and/or in any variation of the occiput anterior position. Delayed bearing down is supported as long as fetal head descent has been documented. For all women with epidural anesthesia, a 2-hour delay in instructions to begin bearing down is used for those with no spontaneous urge, or with a fetus at +2 station or higher, and/or if the fetal head is in the occiput transverse or posterior position. Finally, instructions to actively bear down are used any time the waiting periods have been surpassed or if maternal or fetal status is nonreassuring.⁴⁴

Table 4. **The Ottawa Hospital second-stage protocol1**

		Recommended care approach			
SSL in hours	1	2	3	4	Recommended maximum SSL duration
<i>Primigravida with epidural</i>	<i>Labor down</i>	<i>Labor down</i>	<i>Labor down/support spontaneous pushing^a</i>	<i>Support spontaneous pushing</i>	<i>4h</i>
<i>Primigravida without epidural</i>	<i>Labor down</i>	<i>Labor down</i>	<i>Support spontaneous pushing</i>		<i>3h</i>
<i>Multigravida with epidural</i>	<i>Labor down</i>	<i>Labor down</i>	<i>Support spontaneous pushing</i>		<i>3h</i>

<i>Multigravida without epidural</i>	<i>Labor down</i>	<i>Labor down</i>			<i>2h</i>
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Abbreviation: SSL, second-stage labor.

^aA third hour of waiting may be appropriate in the presence of continued progress during latent SSL.

The maximum times recommended for second-stage labor are also presented in Table 4. The protocol does not require an absolute time limit on second-stage duration when spontaneous birth appears to be imminent. For all women with epidural anesthesia and primiparas without epidural anesthesia (following 2 hours of active bearing-down), and for multiparas without epidural anesthesia (after 1 hour of active bearing down), an assessment is made to determine if birth is imminent or if assisted delivery is indicated. At the end of the time limits, assisted vaginal birth should be considered unless birth is imminent.

The pre- and postimplementation periods of the *OHSSP* in the 2 hospitals spanned 2 months and involved data collection on 456 eligible primiparas who gave birth at the 2 sites.⁴³ The specific outcomes evaluated were delayed pushing after complete dilatation and evaluation of strategies used to implement evidence in practice for knowledge translation.⁴³ Despite strong evidence demonstrating the safety and efficacy of laboring down, implementation of the clinical practice guideline resulted in a significant change in practice at one study site (median waiting time = 22.5 minutes pre-implementation and 56 minutes postimplementation; $P = .04$) but no change in practice at the other.⁴³ The authors recognized the complexity of implementing practice change in maternity care, influenced in large part by the cultures of medicine and nursing as well as institutional support, and recommended frequent feedback to providers to encourage compliance with the *OHSSP* in order to bring about an evidence-based change in practice.⁴³ Although there was no single barrier identified relative to implementation of the *OHSSP* at one site, the authors suggested that “the culture of physician practice” and physician resistance played significant roles. The recommendations of these authors are consistent with those of other researchers who have investigated the process of moving to evidence-based practice, which include (a) providing nursing staff with evidence to support the change in practice,^{45–47} (b) implementation of hospital-wide practice protocols or policies,^{45,47,48} and (c) ongoing communication with all healthcare providers including feedback on the implementation of the change in practice.⁴³

While both of these attempts to translate evidence to practice failed to result in widespread adoption of evidence-based second-stage labor care, each attempt has provided important information that can be used in future efforts to implement evidence in the care of women in second-stage labor. Successful adoption of the *OHSSP* at one clinical site demonstrates that changing care practices with the implementation of an evidence-based second-stage labor care protocol is possible. Recognition of barriers faced with previous attempts to implement evidence-based second-stage labor care provides guidance for the planning of future attempts to translate evidence to practice. Even strategies to prepare women to use spontaneous pushing might prove beneficial. Since a significant gap between evidence and practice persists, it appears that a model that concretely promotes a physiologic approach to second-stage labor care while collaboratively involving nurses and others in attendance at

births, including certified nurse midwives and physicians, is needed to better translate second-stage labor evidence to practice.

IMPLEMENTING A PRACTICE PROTOCOL: A SUCCESSFUL TRANSLATION MODEL

Numerous nursing authors have suggested that implementation of hospital-wide policies enhances the adoption of evidence-based changes in practice.⁴⁵⁻⁴⁸ The implication is that all levels of personnel who provide services within the institution need to be informed of the evidence and involved in the planning and incorporation of translation into policy change. Therefore, the evidence-based approach to promoting best practices in maternity care would include the implementation of a unit-wide policy to support laboring down for women in second-stage labor that has support from institutional administration, all those with privileges to provide care in the unit, and the nurses.

Prior to implementation of the new policy, steps should be taken to inform all providers of labor and birth care of the evidence to support this change in practice and solicit their involvement in the process. Circulation of the relevant evidence can occur in a variety of venues, including medical and nursing meeting presentations, written e-mail communications providing background information, ready access to the articles on the unit and a Web location that all providers and staff can easily retrieve for review, and summarized highlights posted in private staff locations such as on-call and changing rooms.

Although most research on delayed bearing down has been conducted with women undergoing epidural anesthesia, published evidence reveals that the *OHSSP* can be successfully adopted as a system-wide approach to second-stage labor care for women with and without epidurals. The *OHSSP* provides a model that could be adopted, system-wide, in US hospitals to translate the substantial body of second-stage labor evidence to practice. Inherent in this protocol are some important features that make it unique. The protocol concretely offers guidance for nurses and birth attendants to support the physiologic process of labor and birth without interference. It also includes the notion that women without epidural anesthesia can be supported to delay pushing and labor down.

Table 5 contains a synthesis of suggestions based on the literature that may facilitate wider adoption of this type of second-stage protocol. Prior to implementation, careful planning is essential to develop a timeline for implementation that includes substantive data collection before and after a change in practice. Collaborative meetings held with all stakeholders (administrators, nurses, midwives, physicians, residents, and ancillary staff), from the evidence presentation and throughout the planning and implementation phases, are critical. It is also essential that all documents, including the protocol specifics, be discussed and agreed upon by all parties involved in implementation of a new protocol. Once the protocol is agreed upon and during the implementation phase, resources that enhance the ability to adopt new practices should continue to be made available to care providers. Actions to enhance implementation may include (a) placing the new protocol in a visible place in each patient room, (b) offering frequent reminders and discussion of the protocol at staff meetings, (c) providing opportunities for nurses and physicians to discuss their experience with the change in practice, (d) celebrating successes, and (e) openly discussing challenges and opportunities.

Table 5. **Recommend steps for successful adoption of a second-stage labor care protocol^a**

Phase	Recommended action
Planning	Convene planning sessions with all stakeholders (physicians, nurses, residents, ancillary staff, etc) Identify and evaluate evidence in support of change Draft a protocol agreed upon by all stakeholders Establish a timeline for implementation and evaluation Identify outcome measures to be examined during evaluation Begin data collection on pre-implementation outcome measures Meet regularly to discuss concerns of all stakeholders Place protocol in a visible location in patient care areas
Implementation	Implement previously agreed-upon practice protocol Continue collaborative meetings with all stakeholders Regularly check with all care providers about implementation progress Provide opportunities for care providers to discuss challenges Provide unit-wide celebration of successes
Evaluation	Begin evaluation of the process according to the time line established during the planning phase Begin data collection on previously determined outcome measures Conduct data analysis Based on findings of data analysis, continue with implementation or modify the implementation plan

^aUpon completion of the process, share the experience of implementing an evidence-based protocol for second-stage labor care with other maternity care providers. Synthesis of recommendations from nurse-researchers^{12,42-48} and experts in evidence-based practice.^{40,41}

Following implementation of any new protocol, it is crucial to evaluate the process that was used, as well as any changes in health outcomes.⁴⁰ Stakeholders at each maternity care unit will need to decide, prior to implementation, which health outcomes to examine. On the basis of previous attempts at changing second-stage labor practices, it is likely that decisions about implementation and evaluation are best made by all who will be providing labor and birth care, including physicians and nurses.^{42,43} If this evaluation fails to identify improved outcomes, it will be necessary to reexamine the evidence and modify or discontinue the change in practice. If the evaluation identifies improved outcomes, the final step in the evidence-based practice process is for healthcare providers to share the findings of the evaluation with the larger healthcare community so that others, both patients and healthcare providers, may benefit from lessons learned.⁴⁰ Frequent evaluation and good communication among all care providers are essential and allow for an opportunity to modify the process of implementation and enhance the adoption of evidence-based practices.^{42,43}

IMPLICATIONS FOR CLINICAL PRACTICE

The evidence in support of physiologic second-stage labor care, including the use of delayed bearing down for women without an urge to push, has been presented in published literature for decades, yet gaps between evidence and practice persist in most hospitals in the United States.^{13,14} Although nurses provide much of the care to women during second-stage labor, it is unlikely that actions taken

primarily by nurses will accomplish widespread adoption of evidence-based second-stage labor care. Support from institutional leaders who desire evidence-based and patient-centered care delivery is critical to interdisciplinary collaboration, which, in turn, is essential to successful change. Establishing and implementing a unit-wide protocol, with pre- and postimplementation data collection, have been identified as effective means by which to accomplish widespread adoption of evidence-based practice.

The *OHSSP* is an evidence-based protocol that has been successfully implemented and can be used on any labor and delivery unit. Central to the *OHSSP* is the recognition that acceptable durations of secondstage labor are longer than previously understood for women with and without an epidural. This recognition is consistent with the findings of a retrospective cohort study of 42 268 women who delivered vaginally that was recently conducted to examine the duration of second-stage labor in women with and without an epidural.⁴⁹ The findings of that study identified longer than currently accepted thresholds for duration of second stage in nulliparous women without an epidural. Furthermore, the 95th percentile for the duration of second-stage labor in both nulliparous and multiparous women with an epidural was more than 2 hours longer than the duration of second stage in women without an epidural.⁴⁹ The authors concluded that failure to recognize these longer thresholds for second-stage labor duration in a reexamination of the current definitions of prolonged second stage may lead to unnecessary interventions such as cesarean birth and operative vaginal birth.⁴⁹

The steps recommended for successful implementation of a second-stage labor care protocol are summarized in Table 5. The second author on this article is affiliated with a hospital that has recently agreed to adopt the *OHSSP* for second-stage labor management. Consistent with the best practices identified here, all stakeholders will participate in planning, implementing, and evaluating the effectiveness of this change in practice, including the identification of outcome measures to be evaluated before and after implementation. Upon unit-wide adoption of evidence-based practice, nurses are encouraged to share the process used and the outcomes of practice change with the wider healthcare community.⁴⁰ This dissemination can occur at state and national conferences and through publication in peer-reviewed journals. As an integral part of the team providing care to women during the second stage of labor, nurses are in key positions to support and role model the implementation of evidence-based second-stage practice—one labor and delivery unit at a time.

SUMMARY

The nursing care practices that support spontaneous pushing are evidence-based and associated with good maternal and neonatal outcomes. Ironically, laboring down is a care practice that is underutilized for women with epidurals yet supported by high-level scientific evidence. The *OHSSP* holds potential to allow the translation of evidence to practice for women with and without epidurals. The time to implement physiologic principles in second-stage labor is long overdue; there is increasing urgency because of the scrutiny of overused interventions without maternal or neonatal benefit. The poor international standing of the United States in terms of maternal and infant mortality and morbidity⁵⁰ illuminates the urgent need to change entrenched practices and use the evidence for physiologic care practices when caring for women in labor and birth, the majority of whom are healthy. Nurses at all levels of the healthcare system are key partners in meeting the challenge of translating evidence to practice and instituting the process of changing clinical practice.

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