August 25, 2016

The Arizona Public Health Association (AzPHA) supports the adoption of the following APHA Policy Statement 20141 - Reducing Non Medically Indicated Elective Inductions of Labor and its action step recommendations.

Policy Statement: 20141

Abstract
Rates of induced labor have risen dramatically in the United States, and this increase has been seen at all gestational ages, including the preterm period (less than 37 weeks of gestation) and, in particular, the late preterm period (34 through 36 weeks of gestation). An elective induction is defined as the process of artificially stimulating labor with medicine or other methods before labor has started on its own. Many commonly cited indications for labor induction are poorly supported by evidence, and patients often report that they are unaware of the risks and benefits of the procedure. Evidence suggests that there are no benefits to the mother or baby from an elective induction but that there are several increased risks, such as cesarean delivery. Quality improvement measures, such as establishing hospital protocols for scheduling inductions, have been shown to reduce the number of non-medically indicated inductions.

Relationship to Existing APHA Policy Statements
- APHA Policy Statement 200318: Safe Motherhood in the United States: Reducing Maternal Mortality and Morbidity
- APHA Policy Statement 20062: Reducing Racial/Ethnic and Socioeconomic Disparities in Preterm and Low Birthweight Births
- APHA Policy Statement 8529(PP): Preventing Low Birthweight
- APHA Policy Statement 8904: Reduction of Unnecessary Cesarean Section Births
- APHA Policy Statement 9615(PP): Supporting National Standards of Accountability for Access and Quality in Managed Health Care

Problem Statement
US statistics on induced labor: Over the past 25 years, rates of induced labor have increased dramatically in the United States. For example, estimates show an increase in labor inductions from 9.4% of births in 1990 to 23.2% in 2009.[1,2] Rates of labor induction also vary from state to state, from a relatively low rate of 13.2% in California to a high of 35.2% in Utah.[3] Rates of induction have increased in all ethnic and racial groups but are highest among non-Hispanic White women, who account for 27% of elective inductions.[1] Evidence shows that non-Hispanic White women with private or commercial insurance coverage and more than 12 years of education are more likely to have an induction than women covered by Medicaid.[4–9] Although rates of adverse pregnancy outcomes are often higher among economic and racial minority groups, evidence suggests that socioeconomic status, race, and ethnicity are not significant

predictors of elective inductions of labor.[9] Data also suggest that the overall increase in labor inductions is attributable to higher rates of elective inductions as opposed to those that are medically necessary or indicated.[10–12] Of particular concern is research showing that induction rates have increased substantially at all gestational ages, including the preterm (less than 37 weeks of gestation) and late preterm (34 through 36 weeks of gestation) periods, as preterm induction may negatively influence infant development and health.[1] Birth data from 2009 showed a slight decline since 2006 in preterm and early-term births, which may have been attributable to "recent efforts to reduce 'elective' deliveries at less than full term."[2]

Common reasons for elective inductions of labor: Reasons for the increases in elective labor induction are multifaceted and can be difficult to identify from the available data.[11,13] The literature suggests that many women's perceptions of the benefits and risks of labor induction may not be accurate, and such misconceptions probably contribute to increased patient demand for the procedure.[14] In the 2005 Listening to Mothers survey, 78% of mothers believed that it was necessary to know every potential complication before having a labor induction. However, most of the respondents were unable to correctly answer basic questions about the risks associated with inductions.[15] According to a survey of pregnant women, more than 90% of respondents believed that it was safe to deliver their baby before 39 weeks without medical indications, and more than 75% believed that full term was 34 to 38 weeks.[14]

Additional evidence shows that a growing number of women request an elective induction to shorten their pregnancy, for convenience, or to ensure that a preferred doctor will be present during labor and delivery.[16] The practices and preferences of individual physicians have been identified as affecting a woman's decision to have an induction as well.[12,17] Research also has identified connections between lax enforcement of hospital policies relating to elective induction of labor and rising rates of inductions.[16] At least one study proposes that elective inductions are more often suggested by a medical professional rather than requested by the patient. For example, 75% of women in that study who had a non-medically indicated labor induction reported that their care provider made the suggestion, with only 25% requesting induced labor.[17]

Recommended medical indications for induction of labor: Commonly cited medical indications for labor induction are not absolute, and, in the case of many conditions, the benefits are not supported by empirical evidence.[11,18] A systematic "best evidence" review of articles published between 1980 and 2008 revealed that only two medical indications for induction of labor—pregnancy beyond 41 weeks and prelabor rupture of membranes (PROM) at term[19]—were empirically supported. This best evidence review also showed that labor induction is harmful or offers no benefits (or both) for a number of commonly cited conditions, including intrauterine growth restriction before 37 weeks, gestational diabetes requiring insulin, twin pregnancies, and preterm

PROM.[19]

Predicted macrosomia, PROM, and postterm pregnancy are three of the most commonly cited reasons for an induction; however, inductions for these indications remain controversial and are subject to a great deal of variation in practice.[20–24] The American College of Obstetricians and Gynecologists (ACOG) lists the following conditions as examples of indications for non-medically indicated early-term deliveries: (1) preeclampsia, eclampsia, gestational hypertension, or complicated chronic hypertension; (2) oligohydramnios; (3) prior classical cesarean delivery or prior myomectomy; (4) placenta previa or placenta accreta; (5) multiple gestations; (6) fetal growth restriction; (7) pregestational diabetes with vascular disease; (8) poorly controlled pregestational or gestational diabetes; (9) placental abruption; (10) chorioamnionitis; (11) premature rupture of membranes; (12) cholestasis of pregnancy; (13) alloimmunization of pregnancy with known or suspected fetal effects; and (14) fetal congenital malformations.[25]

Maternal health risks: Evidence-based research has shown the risks of labor induction to mother and baby before 39 weeks while failing to establish potential benefits to either party.[10,11,16, 21,26,27] Further complicating the issue is that different methods of induction may involve different potential risks and benefits. Research on these uncertainties, as well as on the effects of different combinations of methods used for labor induction, is scarce and inconclusive.[28]

Numerous studies suggest that elective inductions performed between 37 and 39 weeks of gestation are associated with a range of increased obstetric interventions.[6,12,15,21,29] In particular, the literature documents an increased risk for cesarean section, with some studies estimating that induction almost doubles a woman’s chance of having a cesarean.[6,13,15,29–31] However, a meta-analysis produced mixed results, with randomized controlled trials showing that the risk of cesarean delivery was lower among those who had an induction and observational studies demonstrating higher rates of cesarean deliveries with elective inductions. The authors cautioned that almost all of the reviewed studies were of low quality or were subject to confounding biases.[32]

Other potential risks to the mother from labor induction include an increased likelihood of postpartum hemorrhage, amniotic fluid embolism, an increased need for blood transfusion, hematoma, wound dehiscence, anemia, endometriosis, urinary tract infection, sepsis hysterectomy, a prolonged latent phase with intrapartum infection, and uterine ruptures.[6,11,15,21,23,29,33–36] A study employing an outcome index of postpartum complications such as hematoma, wound dehiscence, anemia, endometritis, urinary tract infection, wound infection, and septicemia showed a significantly higher overall risk of complications among women who underwent elective inductions (27%) than among women with spontaneous labor (18%).[37] Although some

of these occurrences are quite rare, as elective inductions are preventable, it is important for mothers to know the full extent and scope of possible complications so that they can make an informed decision.[15,21]

Neonatal health risks: Elective inductions, particularly those that occur before 39 weeks of gestation, pose unnecessary risks to the fetus. An ACOG work group recommends that the label “term” be replaced with the designations early term (37 weeks, 0 days, through 38 weeks, 6 days, of gestation), full term (39 weeks, 0 days, through 40 weeks, 6 days, of gestation), late term (41 weeks, 0 days, through 41 weeks, 6 days, of gestation), and postterm (42 weeks, 0 days, of gestation and beyond) to more accurately describe deliveries occurring at or beyond 37 weeks of gestation.[38]

Data suggest that elective inductions before 39 weeks lead to more adverse neonatal outcomes than births that occur at 39 weeks.[21,38] A recent toolkit produced by the California Department of Public Health affirms that no studies have demonstrated a decrease in neonatal morbidity from elective deliveries prior to 39 weeks.[21,27] Rather, evidence suggests that elective inductions before 39 weeks significantly increase infants’ risk of admission to the neonatal intensive care unit (NICU) upon birth.[21,39] For example, a study of 2,877 women who had elective inductions in one of 27 hospitals owned by the Hospital Corporation of America showed that the primary outcome of elective inductions was admission to the NICU.[39]

Studies examining fetal lung maturity and elective inductions recommend restricting inductions to at least 39 weeks in all cases without a medical indication.[38,40] Although infants are not considered premature after 37 weeks of gestation, they are significantly more likely to show signs of pulmonary immaturity at birth if they are born before 39 weeks.[40] In addition, documenting lung maturity may not always be reliable, and, even in cases of confirmed lung maturity, birth before 39 weeks has been associated with increased neonatal morbidity, including compromised fetal neural development, an increased risk of brain injury, and possible long-term neurodevelopmental abnormalities.[21,40]

Health care use and additional costs associated with labor induction: Induction of labor requires additional medical interventions and resources above and beyond normal spontaneous labor. This has implications for health care overuse and health care costs. Research suggests that elective induction of labor increases delivery costs by 17.4% over spontaneous labor.[28] Nearly $1 billion could be saved annually in the United States if the rate of early-term delivery were reduced to 1.7%.[39]

In most cases, an induction requires a bare minimum of an IV line and electronic maternal and fetal heart rate monitoring.[10,15,23] Because artificially induced contractions frequently peak sooner and remain intense longer than natural contractions, epidural rates are often increased among women with labor

inductions.[10,11,23,41] A number of observational studies have revealed higher rates of use of epidural anesthesia among women with an elective induction than among those with spontaneous labor.[6,28,29,35,41,42] Another intervention associated with elective inductions is the use of a vacuum or forceps during vaginal births.[15] One study showed a significantly higher rate of vacuum-assisted deliveries among women undergoing elective inductions (53.4%) than among women with spontaneous labor (33.3%).[29]

With respect to cesarean deliveries among women with elective inductions of labor, additional health care staff and resources are needed to perform C-sections and to manage postsurgery care, treat maternal and neonatal complications, and care for infants in the NICU. US data from 2012 reveal that 32.8% of all deliveries involve cesarean sections, and rates of primary C-sections have remained relatively stable.[43,44] In 2011, the California Maternal Quality Care Collaborative issued a white paper regarding cesarean sections and related outcomes. One clinical improvement strategy to reduce cesarean delivery rates is elimination of elective inductions before 41 weeks, particularly among first-time mothers with an unfavorable cervix.[45] Longer hospital stays, increased risk of the baby's admittance to the NICU if the induction occurs before 39 weeks of gestation, and increased risk of the mother's admittance to the intensive care unit are associated with labor induction.[11,29,39]

Organizations and agencies with relevant positions, campaigns, or policies: Since 1979, ACOG has consistently advised against non-medically indicated elective deliveries prior to 39 weeks of gestation.[21] The ACOG guidelines provide room for induction of labor in the case of "soft indications" (e.g., a history of fast labor, maternal psychosocial discomfort) only when the gestational age has been firmly established as 39 or more weeks and the mother has been informed of the risks and benefits of and the alternatives to induction.[18] Numerous professional, nongovernmental, government, and international health organizations have followed ACOG's lead and formally advocate against elective inductions before 39 weeks. These organizations include the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN); the American College of Nurse Midwives (ACNM); the March of Dimes; the Agency for Healthcare Research and Quality; the Joint Commission; the National Quality Forum; the Leapfrog Group; and the World Health Organization.

Many of these organizations have created public awareness campaigns aimed at women and expectant mothers. In 2012, AWHONN used its "Go the Full 40" campaign to encourage pregnant women to wait for spontaneous labor to occur.[46] Also, the March of Dimes partnered with the Centers for Medicare and Medicaid Services to produce a public awareness campaign stressing the importance of "staying pregnant" for at least 39 weeks and developed a community-based partnership model ("Healthy Babies are Worth the Wait") among health professionals and community organizations to further its goal of reducing preterm births.[47] As part of the American Board of

Internal Medicine (ABIM) Foundation's Choosing Widely campaign, ACOG produced a list of "Five Things Physicians and Patients Should Question," with the first item being to not schedule non-medically indicated elective inductions of labor or cesarean deliveries before the gestational age of 39 weeks.[48] A second element of the ABIM Foundation's campaign, developed in conjunction with the American Academy of Family Physicians, ACOG, and Consumer Reports, is an initiative called "Delivering Your Baby: Why Scheduling Early Delivery Is Not a Good Idea," which stresses the importance of waiting for spontaneous labor to occur. As part of this campaign, women and their health care providers are urged to refrain from scheduling non-medically indicated elective inductions of labor before 39 weeks, 0 days, of gestation and to refrain from scheduling elective inductions of labor between 39 weeks, 0 days, and 41 weeks, 0 days, unless the cervix is deemed "favorable."[49]

Other efforts have been directed more toward establishing guidelines and regulations at the provider or health care setting levels (particularly hospitals). In 2012, the Association of State and Territorial Health Officials (ASTHO) issued a policy statement ("Improving Pregnancy Outcomes") that cited the need to reduce non-medically indicated elective inductions and cesarean sections prior to 39 weeks of gestation and suggested that such an aim could be reached by "working closely with patients, providers, hospitals, private insurers, and Medicaid to make 39 weeks of gestation the standard of care."[50] In that same year, then-ASTHO president David Lakey issued a challenge to state and territorial health officials to reduce their preterm birth rates by 8% (relative to their 2009 rates).[51]

In 2012, the Centers for Medicare and Medicaid Services launched two programs to promote testing of various clinical models designed to reduce preterm births: Strong Start for Mothers and Newborns, which seeks to test three enhanced prenatal care models with the goal of reducing preterm births among Medicaid-enrolled women, and the Hospital Engagement Network program, which has engaged more than 3,700 hospitals nationally in working on a series of quality outcomes, including reductions in early elective deliveries.[52] The Department of Veterans Affairs and the Department of Defense addressed labor induction in their 2009 clinical practice guidelines for management of pregnancy, stating that labor induction should be offered to women at 41 weeks, 0 days, of gestation; induction after 39 weeks may be considered for patients with a favorable cervix; and women should be properly educated regarding the risks and discomforts of induction.[53]

A collaborative effort including such organizations as the March of Dimes, the California Maternal Quality Care Collaborative, and the California Department of Public Health produced a toolkit called "Elimination of Non-Medically Indicated (Elective) Deliveries Before 39 Weeks Gestational Age."[21] This toolkit, as part of a larger rapid-cycle change approach, has been used in 26 hospitals in Illinois, Texas, New York, California, and Florida and has shown reductions in elective scheduled early-term deliveries

ranging from 4.8% to 27.8%.[54]

The World Health Organization also recently published a guide on recommendations for labor induction.[26] In 2010, the Joint Commission first issued a set policy on elective deliveries with the goal of decreasing such deliveries, including inductions performed between 37 and 39 weeks of gestation. As part of this policy, hospitals are directed to track data on elective deliveries, and induction rates will serve as a key quality indicator of obstetric care.[3] As of January 1, 2014, these guidelines became mandatory for hospitals with 1,100 or more births per year.[55] This policy was also adopted by the National Quality Forum and the Hospital Corporation of America.58 The Leapfrog Group, in its decision to adopt the policy, cited decreases in elective inductions as a key quality indicator.[34]

Evidence-Based Strategies to Address the Problem

Evidence-based strategies include supporting and encouraging collaborative efforts among major stakeholders such as care providers, perinatal hospital leaders and administrators, childbirth educators, insurance companies, policymakers, and parents.[57] For example, the Ohio Perinatal Quality Collaborative implemented efforts to improve documentation of and criteria for labor inductions, and this process resulted in a decrease in inductions without medical indications (from 13% to 8%) and in a reduction of the number of infants born between 36 and 38 weeks of gestation who were admitted to the NICU.[57]

Data show that elective inductions decrease when hospitals implement elective birth policies, scheduling guidelines, and protocols for approving exceptions for non-medically necessary deliveries prior to 39 weeks of gestation. The Ohio collaborative collected and reported data showing formal documentation of indications for inductions or cesarean births, gestational ages, and criteria for determination. Rates of elective deliveries prior to 39 weeks of gestation were compared between hospitals that were and were not participating in the collaborative. As a result of the changes in practice instituted, the rate of births scheduled between 36 weeks, 1 day, and 38 weeks, 6 days, of gestation without medical indications decreased from 25% to less than 5% within the 14-month data collection period.[57]

A Utah-based organization, Intermountain Healthcare, implemented or reformed patient education, data feedback, and care guidelines to address elective inductions. This campaign, as well as the implementation of strict hospital protocols prohibiting the use of elective inductions prior to 39 weeks, was successful in reducing inductions in some hospital settings.[58] The Trinity Health System in Michigan implemented a similar “hard-stop” policy designed to prevent physicians from scheduling non-medically indicated deliveries before 39 weeks, effectively reducing its rate of elective deliveries from 15% in 2009 to less than 1% in 2012.[59] The Tennessee-based Hospital Corporation of America and the Oregon Association of Hospitals and Health Systems

have also enacted hard-stop policies to prevent elective inductions, producing results as favorable as an 86% decline in such deliveries.[59,60]

Alternative health care providers and settings, such as midwives, doulas, birthing centers, and home births (for women with no risks), also show encouraging evidence of lower elective induction rates. ACNM advocates against the practice of elective induction of labor and states that induction is an option that should be carefully weighed against expectant management, with spontaneous labor being preferable in almost all situations without medical indications.[61] A 2005 study of more than 5,000 US and Canadian women showed a much lower rate of labor induction (9.6%) among women who delivered at home with the assistance of a certified professional midwife than among those who gave birth in a hospital setting.[62] Another study compared women who used a birth center and received midwifery care with a control group of women who gave birth in hospitals but were eligible for birth center care. After adjustment for race, ethnicity, parity, history of cesarean delivery, age, marital status, country of origin, smoking status, and height, the data showed a labor induction rate of only 8% in birth centers, as compared with 15% in hospitals.[63] A more recent study published in 2014 also documented that non-medically indicated inductions were less likely to occur in hospitals in which 30% or more of births were assisted by a nurse-midwife.[64]

Opposing Arguments/Evidence

There is limited agreement and inconclusive data in the literature as to the benefits to the mother and baby of a non-medically indicated elective induction, regardless of gestational age. Evidence-based research recognizes labor induction's risk of harm to mother and baby before 39 weeks while failing to establish potential benefits to either party.[10,11,16,21,26] Further complicating the issue is that different methods of induction may involve different risks and potential benefits. Research on these uncertainties, as well as the effects of different combinations of methods used for labor induction, is scarce and inconclusive.[28]

As noted, predicted macrosomia, PROM, and postterm pregnancy are the most commonly reported reasons for induction, yet all three remain controversial and are subject to a great deal of variation in practice.[20] In particular, there is debate on whether or not macrosomia is an acceptable medical indication for induction, with many believing that it is not.[21] As many as 70% of women who are told that they are carrying a macrosomic baby are actually carrying a normal-weight baby.[23,24] According to the findings of one review, inducing labor when a macrosomic baby is suspected does not improve neonatal outcomes and appears to increase the likelihood of a cesarean birth.[10]

Induction for PROM is another source of controversy. While induction for PROM is recommended by ACOG, ACNM has drawn different conclusions.[61,65] Both ACOG and ACNM have cited evidence from the 1996 TERMPROM study, the largest trial to

date on this issue, in justifying their respective positions.[66] ACOG concluded that women who had expectant management of labor were more likely to have a uterine infection than women who had labor induced as soon as possible after PROM.[66] However, the ACNM position statement points to important limitations that affect the external validity of the study findings and their implications for current maternity care practices. Notably, the study's definition of uterine infection (a temperature equal to or greater than 37.5°C or 38°C) was not consistent with its definition in current practice (a temperature greater than 38°C), which could lead to overdiagnosis. Women with PROM also receive multiple digital vaginal exams, which are known to increase the risk of infection. The risks of harm and the potential benefits should be considered in making a decision about induction of labor or expectant management in the case of PROM.[66]

Action Steps

The following action steps, grouped by theme, are recommended.

Action steps for hospitals:

1. Hospitals with less than 1,100 births annually are not mandated to comply with the Joint Commission's policy on elective deliveries but should be encouraged to do so. Hospitals with 1,100 births or more each year should already be in compliance with this policy (as of January 1, 2014) and should be urged to implement strict hospital protocols prohibiting the use of elective inductions prior to 39 weeks, except where medically indicated.

2. Hospitals of all sizes are urged to establish strict elective delivery policies, scheduling guidelines, and protocols for approving exceptions to non-medically necessary deliveries before 39 weeks of gestation. It has been shown that such obstetric quality improvement measures and indicators are successful in reducing inductions of labor in some hospital settings.[54]

3. Hospitals are encouraged to hold annual training sessions or meetings to provide information to physicians with admitting privileges on induction guidelines, policies, and procedures.

4. Hospitals are encouraged to post the flow chart for induction of labor contained in the Joint Commission's policy on elective deliveries in a visible place where physicians will regularly see it.

5. Where state laws permit, hospitals are urged to allow nurse-midwives, doulas, and other alternative health care providers in the delivery room to support women who want to use these types of providers but still want to deliver in a hospital setting.

Action steps to improve patient education and awareness:

6. Childbirth preparation organizations (e.g., the International Childbirth Educators

Association and the Childbirth and Postpartum Professional Association) are encouraged to incorporate accurate information about the risks and benefits of elective induction of labor into their childbirth education courses.

7. Women and their partners should be encouraged to attend childbirth education classes that provide accurate information about the risks and benefits of elective induction of labor.[53]

8. Hospitals and physicians should implement mandated informed consent discussions with patients regarding the risks and benefits to mother and baby of elective deliveries before 39 weeks of gestation.[24] The patient should be counseled by her health care provider regarding the indications for induction, the agents and methods of labor stimulation, and the possible health outcomes.

9. There should be increased support for already-existing public awareness campaigns on the importance of waiting at least until 40 weeks of gestation and spontaneous labor, and relevant organizations and agencies should be encouraged to create similar campaigns or partner with existing ones.

Action steps to improve the knowledge and evidence base on elective inductions of labor:

10. Hospitals, state health departments, and/or federal agencies such as the Centers for Disease Control and Prevention should work to improve collection of data on the number of elective deliveries before 39 weeks and outcomes at the hospital level so as to guide policy, intervention reviews, and leadership decision making. Data showing formal documentation of indications for inductions, gestational ages, and criteria for determination should be collected and reported.

11. There should be support for high-quality research on the benefits and risks of inductions of labor relative to spontaneous labor, as well as studies of the impact of different types and combinations of methods. Existing research in this area is scarce and generally of low quality, with often inconclusive results.[13]

12. Funding agencies are encouraged to support research projects and trials investigating the overall effects of elective inductions of labor.

Action steps for health care providers:

13. Physicians should be encouraged to discontinue the use of elective inductions in the absence of medical indications. Research shows that physician influence is a strong predictor of whether or not a woman will decide to be induced.[17]

14. If they have not already done so, professional organizations that serve physicians, nurses, midwives, and doulas should be encouraged to adopt official measures and

policies on the use of elective inductions in the absence of medical indications. These policies should be clearly communicated to their members.

15. Health care providers should be encouraged to value a patient's informed consent over provider convenience or scheduling preferences.

Action steps for maternal and child health policy change, advocacy, insurance, and systems change groups:

16. These groups should support and encourage collaborative efforts among major stakeholders such as care providers, perinatal hospital leaders and administrators, childbirth educators, insurance companies, policymakers, and parents.

17. These groups should advocate for state legislators to fund data collection on the number of elective deliveries before 39 weeks and outcomes at the hospital level to guide policy, intervention reviews, and leadership decision making. Also, they should advocate for collection and reporting of data showing formal documentation of indications for inductions, gestational ages, and criteria for determination.

18. These groups should advocate for policies at the state and federal levels that encourage payment models promoting reductions in primary and secondary cesarean sections.

19. These groups should urge all private and public insurance plans to expand patients' choices with respect to birthing preferences and to provide market-value reimbursement rates for nurse-midwives, doulas, and other alternative health care providers.

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