Reducing Preterm Birth: The Role of Educators

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Objectives

• Define Preterm Labor
• Describe the management of Preterm labor
• Discuss tools to teach women the signs and symptoms of preterm labor
• Describe the increase in elective deliveries before 39 weeks and identify the contributing factors.
• Discuss the risks of early term deliveries and the benefits of delivery beyond 39 weeks gestation.
• Discuss resources to educate women on the importance of a full term pregnancy.

What do these countries all have in common?

Belarus   Ecuador
Cuba      Guatemala
Chile     Korea
China     Rwanda
Egypt     South Africa

They and 120 other countries all have a lower preterm birth rate than the United States!

Global Preterm Birth: 11.1 %

• 15 million babies born preterm
• 8 million born with a serious birth defect
• >1 million newborns die from prematurity
• >3 million die from birth defects

15 countries account for two-thirds of the world’s preterm births:
1. India
2. China
3. Nigeria
4. Pakistan
5. Indonesia
6. United States of America

USA = #131/184

Global Preterm Birth Initiative

• Although our rate has declined several years in a row, the United States still has one of the highest preterm birth rates of any high resource country
• Somalia, Tanzania, Nicaragua and Afghanistan are examples of countries that have lower preterm birth rates than the US
March of Dimes Preterm Birth Goals

8% reduction by 2014
21% reduction by 2020

Percent of live births

Preterm Birth Rates by County of Residence California 2013

Reductions in Preterm Birth – California
Without recent reductions in the preterm birth rate, 34,000 more babies would have been born too early in California

Thank You for Helping Make a Difference!

We have made progress, but there is still work to do!
What Are the Causes of Preterm Birth?

- Spontaneous Preterm Labor 40-45%
- Preterm Premature Rupture of Membranes (PPROM) 30-35%
- Indicated 30-35%


Definition of Preterm Labor

Preterm labor occurs between 20 and 36 6/7 weeks of pregnancy. It is generally based on clinical criteria of:

- Regular uterine contractions with or without ruptured membranes
- Initial presentation with cervical dilation of at least 2 cm OR
- Change in cervical exam (dilation and/or effacement) on serial exams

Identifying women with preterm labor who ultimately give birth prematurely is difficult.

- Approximately 50% of women hospitalized for preterm labor actually deliver at term.


Risk Factors for Preterm Delivery

Greatest risk
- Previous preterm birth
- Multiple gestation
- Cervical or uterine anomalies
- Presence of PFI between 22 and 34 weeks gestation
- Cervix >25 mm long by TVU between 20 and 28 weeks

Lifestyle and environmental risks
- Late or no prenatal care
- Cigarette smoking, drinking alcohol, drug use
- Lack of social support
- Stress
- Long working hours with prolonged standing

Medical risks
- Infections
- Diabetes
- Hypertension
- Thrombophilies
- Vaginal bleeding
- Birth defects
- IVF
- Underweight or obesity
- Short pregnancy interval

Other
- African-Americans and American Indians
- <17 or >35 years of age
- Low socioeconomic status (SES)


Risk of Subsequent Preterm Delivery

<table>
<thead>
<tr>
<th>First Delivery</th>
<th>Second Delivery</th>
<th>Risk of Subsequent Preterm Delivery</th>
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<tbody>
<tr>
<td>Term</td>
<td>---</td>
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</tr>
<tr>
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<td>15%</td>
</tr>
<tr>
<td>Term</td>
<td>Preterm</td>
<td>24%</td>
</tr>
<tr>
<td>Preterm</td>
<td>Preterm</td>
<td>33%</td>
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</tbody>
</table>

Interventions That Do Not Reduce Risks of Preterm Birth

ACOG states that the following do not appear to reduce the risk of preterm birth and should not be routinely recommended for women with signs and symptoms suggestive of preterm labor:

- Bedrest
- Hydration
- Pelvic rest

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Interventions That Do Reduce Risks Associated with Preterm Birth

Standardized preterm labor assessment allows for more accurate and timely interventions.

Preventing preterm birth:

- Progesterone for asymptomatic women with preterm birth risk factors (e.g., prior preterm birth and/or short cervical length measured by TVU)
- Cerclage (for a limited number of special situations)

Preparing for preterm birth can improve outcomes:

- Antenatal corticosteroids
- Short-term tocolytic agents
- Transport to a tertiary care facility

Why This Matters: Benefits of Antenatal Corticosteroids (ACS) Between 24 and 34 Weeks

Antenatal corticosteroids led to reduction in:

- Neonatal death (NND) ~ 30%
- Respiratory distress syndrome (RDS) ~ 35%
- Intraventricular hemorrhage (IVH) ~ 50%
- Cerebroventricular hemorrhage ~ 50%
- Necrotizing enterocolitis (NEC) ~ 55%
- NICU admissions ~ 20%
- Early systemic infections ~ 50%

Roberts D, Dalziel S. Cochrane Database of Systematic Reviews 2006; Issue 3

Contractions: A Diagnostic Challenge

- The assessment of preterm delivery risk based solely on symptoms and physical examination may be inaccurate
- Uterine contractions alone are a poor positive predictor of true preterm labor
- Contractions will occur four or more times an hour in up to 25% of pregnancies <32 weeks
- Many women diagnosed with preterm labor based solely on six or more uterine contractions per hour will deliver at term

Iams JD, Berghella V. Am J Obstet Gynecol 2010;203:89-100.

Providing appropriate levels of care is challenged by the difficulty of identifying which women will give birth prematurely and which will not.

Management of Preterm Contraction

Treatment of 239 women presenting with preterm contractions at a network of 11 Wisconsin non-level III hospitals.

Findings:
- The average gestational age was 31.9 weeks
- Only 17% of patients had any cervical changes with contractions.
- Over-treated low-risk patients
  - 76% of those without cervical changes received short-term tocolytics.
- Under-treated high-risk patients
  - Only 33% of those who delivered <34 weeks gestation received ACS


Hospital triage units tend to be inconsistent, with high variation in assessment and management of women with symptoms of preterm labor.

Preterm Labor Assessment Toolkit (PLAT) Goal

To improve perinatal health outcomes by establishing a standardized clinical pathway for the assessment and disposition of women with suspected signs and symptoms of preterm labor.

Standardized Pathway for Improving Outcomes

Value of Standardized Assessment

- Identifying those patients in true labor will benefit all women who present in triage with signs and symptoms of suspected preterm labor
- Hospitals providing all levels of care will achieve the following outcomes within a relatively brief timeframe:
  - Timely and appropriate interventions
  - Optimal maternal-fetal safety
  - Hospitalization of only those patients at greatest risk for preterm delivery
  - Effective transport of preterm labor patients to higher, more appropriate levels of care
  - Avoidance of unnecessary treatments, interventions and medications
Step 1: Assessment/Supportive Care

1. Place the patient in the triage or labor room for evaluation, which should be completed in 2 to 4 hours.
2. Reassure the patient and her family with careful explanation of all procedures.
3. The registered nurse will review the prenatal record and inquire about previous preterm deliveries.
4. Obtain objective data:
   - External monitor for contractions and fetal heart pattern
   - Routine labs
   - SSE: assess for ruptured membranes, obtain fFN (if ordered)
   - SVE: assess cervical status
   - Preterm labor screen: TVU and/or fFN test
5. Inform OB provider.

Assessment Tools: Transvaginal Ultrasound (TVU)

Assessment Tools: Fetal fibronectin (fFN) Test

Step 2: Disposition

Option A – Preterm Labor Identified

Option B – Preterm Birth Risk Factors Present

Option C – Low Risk of Preterm Labor

Patient Education Talking Points
Signs and Symptoms of Preterm Labor

- Contractions that make your belly tighten up like a fist every 10 minutes or more often
- Change in the color of your vaginal discharge, or bleeding from your vagina
- The feeling that your baby is pushing down. This is called pelvic pressure
- Low, dull backache
- Cramps that feel like your period
- Belly cramps with or without diarrhea

What to Do if You Have a Symptom

Call your provider even if you have only one sign of preterm labor. You may be told to:

- Come into the office or go to the hospital.
- Stop what you are doing.
- Rest on your left side for 1 hour.
- Drink 2 – 3 glasses of water or juice. Do not drink coffee or soda.

What to Do if You Have a Symptom

- If the signs get worse or don’t go away, call your provider again or go to the hospital.
- If the signs go away, take it easy for the rest of the day

Why it is Important to Take Action if You Have Symptoms

If you are in preterm labor:

- There are medications you can be given to postpone your baby’s delivery
- There are medications you can be given that will make your baby healthier if you deliver early
- You may need to be transported to a different hospital for delivery so they can give you and your baby the best care
- Timing is crucial so these interventions can work

Your provider will not be bothered by your call, so don’t hesitate to contact her if you are concerned!

Preterm Labor Patient Education Materials

Non-medically Indicated (Elective/Planned) Deliveries
Inductions of Labor

- Since 1979, ACOG has cautioned against inductions before 39 weeks in the absence of a medical indication (Committee Opinion #22)

- ACOG has also noted that “a mature fetal lung maturity test result before 39 weeks of gestation, in the absence of appropriate clinical circumstances, is not an indication for delivery” (Committee Practice Bulletins #97 and #107)

New Definition for Term Pregnancy

Weeks of Pregnancy

<table>
<thead>
<tr>
<th>Preterm</th>
<th>Late Preterm</th>
<th>Early Term</th>
<th>Full-Term</th>
<th>Late Term</th>
<th>Post-Term</th>
</tr>
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<tbody>
<tr>
<td>20</td>
<td>34</td>
<td>37</td>
<td>39</td>
<td>41</td>
<td>42+</td>
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ACOG Committee Opinion #579, November 2013

Confirmation of Term Gestation

- Early ultrasound, < 20 weeks gestation, is more accurate than an ultrasound after 20 weeks gestation at determining gestational age and benchmarking < 39 weeks gestation.

- Ultrasound-established dates should only take precedence over LMP-established dates when the discrepancy is greater than 7 days in the first trimester and 10 days in the second trimester.

Why Do Women Request Elective Delivery?

What are the reasons you hear every day?

The Gestational Age that Women Considered it Safe to Deliver

Pressures on Obstetricians

Reasons that physicians may resist elimination of elective deliveries < 39 weeks:

- Physician Convenience
  - Guarantee attendance at birth (“co-dependency”)
  - Avoid scheduling conflicts
  - Reduce being awakened at night

- …what’s the harm?
  - Bad outcomes are unrecognized and rare
  - The NICU handles these issues just fine

- Limit risk of a bad pregnancy outcome
**Non-medical Indications Often Given for Inductions**

- Maternal intolerance to late pregnancy
  - Excess edema, backache, indigestion, insomnia
- Prior labor complication
- Prior shoulder dystocia
- Suspected fetal macrosomia
- History of rapid labor/lives far away
- To reduce risk of:
  - “possible” preeclampsia
  - “possible” macrosomia
  - stillbirth

**Complications of Non-medically Indicated (Elective) Deliveries Between 37 and 39 Weeks**

- Increased NICU admissions
- Increased transient tachypnea of the newborn (TTN)
- Increased respiratory distress syndrome (RDS)
- Increased ventilator support
- Increased suspected or proven sepsis
- Increased newborn feeding problems and other transition issues

See Toolkit for more data and full list of citations.

**Timing of Fetal Brain Development**

- Cortex volume increases by 50% between 34 and 40 weeks gestation.
  (Adams Chapman, 2008)
- Brain volume increases at rate of 15 mL/week between 29 and 41 weeks gestation.
- A 5-fold increase in myelinated white matter occurs between 35-41 wks gestation.
- Frontal lobes are the last to develop, therefore the most vulnerable.

**Elimination of Non-medically Indicated (Elective) Deliveries Before 39 Weeks Gestational Age**

Funding for the development of this toolkit was provided by:
Federal Title V block grant funding from the California Department of Public Health; Maternal, Child and Adolescent Health Division was used by the California Maternal Quality Care Collaborative to develop the toolkit; and March of Dimes.
The Important Role of Educators

- Teach your patients to talk about their pregnancy in terms of weeks not months.
- Educate your patients about the risks of elective delivery before 39 weeks.
- Encourage your patients to get an ultrasound before 20 weeks to confirm gestational age.
- Empower your patients to ask questions of their health care providers.
- Take a lead on promoting best practice.

Patient Education Talking Points

- Important organ growth including lung, brain and liver development occurs during the last weeks of pregnancy.
- Babies born at 39 weeks are less likely to have vision and hearing problems.
- Babies need 39 weeks to gain the weight they need to stay warm after birth.
- Babies need 39 weeks to learn to suck and swallow and stay awake long enough to eat.
- Labor and delivery is like crawling and walking. We know an approximate time frame, but not an exact date.
- Waiting can be hard, but waiting allows your baby’s brain to grow and allows you time to rest before labor starts.

Why can scheduling an early birth be a problem?

- Your due date might not be exactly right. (It could be off by a week or two - which would mean your baby would be born too early).
- Inducing labor may not work. When this happens, there is a higher chance of c-section.
- C-sections can cause problems in future pregnancies.
- C-section is a major surgery and it takes longer for the mom to recover.
What happens if my labor starts before 39 weeks?

• If spontaneous labor starts before 37 weeks, doctors will usually try to stop the labor since the baby is premature and needs more time to grow.

• If labor starts after 37 weeks, it means your baby is ready to be born, and your doctor will not try to stop labor.

Questions for Women to Ask Their Providers

If your doctor/midwife suggests delivery before 39 weeks...

• What is the benefit to me?
• What is the benefit to my baby?
• What are the risks for me?
• What are the risks for my baby?
• How was my due date calculated?

March of Dimes Educational Materials

For providers and patients:
• Toolkit
• Slides
• Printed materials
• Websites

For the public:
• Awareness Campaign

A Tool to Educate Patients

Patient Education Flyer

Patient Education Brochure
Posters

Healthy Babies are Worth the Wait Campaign
http://www.youtube.com/watch?v=D4t0oyT3KP8

Resources for Educators

Prematurity Prevention Resource Center:
prematurityprevention.org

Articles on marchofdimes.org:
• Why at least 39 weeks is best for your baby
• Inducing Labor
• Healthy Babies are Worth the Wait

AWHONN: “Go the Full 40” Campaign
GotheFull40.com/health4mom.org

Resources for Educators

ChildbirthConnection.org:
• Induction of Labor: What You Need to Know

National Maternal and Child Health Education Program – nichd.nih.gov/ncmhep
• “Is it Worth It?” campaign

Lamazeinternational.org:
Healthy Birth Practices: Let Labor Begin on Its Own
Lamaze.org - The Waiting Game (for patients)
Resources for Educators

ACOG.org: FAQ 181; Elective Deliveries <39 wks

CAPPA.net - Preterm Labor Poster

YouTube videos (youtube.com/marchofdimes):
• At Least 39 Weeks – Dr. Siobhan Dolan
• 39 Weeks of Pregnancy- Dr. Alan Fleischman
• March of Dimes Pregnancy Time Lapse

March of Dimes Resources for Patients

Pregnancy Tips:
• twitter.com/marchofdimes
• twitter.com/nacersano

Baby Tips:
• twitter.com/babytips
• twitter.com/nacersanobaby

News Moms Need Blog:
• news moms need.marchofdimes.org
• blog.nacersano.org

Online Community for NICU families:
• shareyourstory.org
• compartasuhistoria.org

Pregnancy & Newborn Health Ed Center:
• Email questions: askus@marchofdimes.org (English) or preguntas@nacersano.org (Spanish)

Free Apps available in the iTunes App Store:
• My 9 Months/Mis 9 Meses (iPad)
• Cinemama Video (iPhone)

Questions?

Thank You!

For more information, contact:
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