Safe Triage of Pregnant Patients in the Emergency Room

John P. Keats, MD
Assistant Clinical Professor of OB/GYN
The David Geffen School of Medicine at UCLA
Market Medical Executive, Cigna Health Care
John.Keats@Cigna.com

Brenda Chagolla RN, MSN, CNS
Manager
University Birthing Suites, Women’s Pavilion
UC Davis Medical Center
Brenda.Chagolla@ucdmc.ucdavis.edu
Background

The Importance of Interdepartmental Collaboration and Safe Triage for Pregnant Women in the Emergency Department

Brenda A. Chagolla, John P. Keats, and Janet M. Fulton

ABSTRACT

Pregnant women who present to the emergency department can present challenges that range from the diagnoses of unsuspected pregnancies to the determination of where evaluations should occur. In this review we identify literature associated with the triage of pregnant women in the emergency department and propose a model for triage and evaluation of pregnant women in the emergency department. Strategies are described to facilitate interdepartmental communication to optimize safe maternal/fetal care.

JOGNN, 42, 595-605; 2013. DOI: 10.1111/1552-6909.12298

Accepted June 2013
What are the Models of Triage for Pregnant Women who Present to the ED for a non-OB complaint?
Models of ED triage of OB patients

- All pregnant women regardless of chief complaint (and possibly gestational age) to be evaluated in the perinatal unit, as long as the patient is medically stable.

- A woman with an obvious pregnancy-related complaint to be triaged in the perinatal unit. In effect, the default method would be to screen and diagnose a pregnant woman in the ED unless a specific reason is identified requiring transfer to the perinatal unit.

- A pregnant women at a predetermined gestational age or greater to be evaluated by a member of the obstetric team for obstetric-fetal complications as an adjunct evaluation to the chief or presenting complaint.
Obesity among women of childbearing age: United States, 2001-2011

Percent of women ages 18-44

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>17.6</td>
</tr>
<tr>
<td>2002</td>
<td>17.8</td>
</tr>
<tr>
<td>2003</td>
<td>19.2</td>
</tr>
<tr>
<td>2004</td>
<td>20.2</td>
</tr>
<tr>
<td>2005</td>
<td>21.4</td>
</tr>
<tr>
<td>2006</td>
<td>21.7</td>
</tr>
<tr>
<td>2007</td>
<td>23.6</td>
</tr>
<tr>
<td>2008</td>
<td>23.7</td>
</tr>
<tr>
<td>2009</td>
<td>24.4</td>
</tr>
<tr>
<td>2010</td>
<td>25.1</td>
</tr>
<tr>
<td>2011</td>
<td>24.9</td>
</tr>
</tbody>
</table>

Note: Data after 2010 are not comparable to earlier years due to methodological changes. Details: see calculations page.
Obesity among women of childbearing age
California, 2002-2012

Percent of women ages 18-44

Note: Data after 2010 are not comparable to earlier years due to methodological changes. Details: see calculations page.

The following states did not conduct BRFSS surveillance every year and are not included in U.S. rates for the respective years: AK(1990), AR(1990-1992), DC(1995), KS(1990-1991), HI(2004), NV(1990-1991), NJ(1990), WY(1990-1993). Obesity is defined as a Body Mass Index of 30 or more. Body Mass Index (BMI) is a number calculated from a person’s weight and height. Percent reported is among women ages 18-44.

Illicit drug use: United States, 2010-2011 Average

Percent of population ages 12 and older

- Over 9.4 (16)
- 7.7-9.4 (18)
- Under 7.7 (17)
### Medical Risks

Table I-6. Selected risk factors, obstetric procedures, characteristics of labor and delivery, and congenital anomalies, by age and race and Hispanic origin of mother: United States, 2012

[Rates are number of live births with specified risk factors, procedures or anomaly per 1,000 live births in specified group; congenital anomalies are per 100,000 live births]

<table>
<thead>
<tr>
<th>Risk factor, characteristic, procedure and anomaly</th>
<th>All births</th>
<th>Factor reported</th>
<th>All ages</th>
<th>Under 20 years</th>
<th>20-24 years</th>
<th>25-29 years</th>
<th>30-34 years</th>
<th>35-39 years</th>
<th>40-44 years</th>
<th>Not stated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Races</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk factors in this pregnancy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>3,952,841</td>
<td>231,780</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13,181</td>
</tr>
<tr>
<td>Hypertension, pregnancy-associated</td>
<td>3,952,841</td>
<td>181,628</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13,181</td>
</tr>
<tr>
<td>Hypertension, chronic</td>
<td>3,952,841</td>
<td>58,029</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13,181</td>
</tr>
<tr>
<td><strong>Non-Hispanic black</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk factors in this pregnancy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>583,489</td>
<td>30,302</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3,579</td>
</tr>
<tr>
<td>Hypertension, pregnancy-associated</td>
<td>583,489</td>
<td>32,936</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3,579</td>
</tr>
<tr>
<td>Hypertension, chronic</td>
<td>583,489</td>
<td>17,743</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3,579</td>
</tr>
<tr>
<td><strong>Hispanic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk factors in this pregnancy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>907,677</td>
<td>57,531</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,257</td>
</tr>
<tr>
<td>Hypertension, pregnancy-associated</td>
<td>907,677</td>
<td>32,514</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,257</td>
</tr>
<tr>
<td>Hypertension, chronic</td>
<td>907,677</td>
<td>7,613</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,257</td>
</tr>
<tr>
<td>Search Terms</td>
<td>PubMed</td>
<td>CINHAL Plus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>--------------</td>
<td>-------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obstetrical Triage &amp; Emergency Department (ED)</td>
<td>0 Results</td>
<td>1 Result</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obstetrical Triage</td>
<td>0 Results</td>
<td>8 Results</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obstetric Triage &amp; ED</td>
<td>1 Result</td>
<td>2 Results</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obstetric Care &amp; ED</td>
<td>6 Results</td>
<td>16 Results</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pregnancy &amp; ED &amp; Disposition</td>
<td>6 Results</td>
<td>6 Results</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obstetric Triage</td>
<td>26 Results</td>
<td>36 Results</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Professional Organizations

- Association of Emergency Physicians
- Emergency Nurses Association
- Association of Women’s Health, Obstetric, and Neonatal Nurses
- American College of Nurse Midwives
- American College of Obstetricians and Gynecologists
- Society of Obstetricians and Gynaecologists of Canada
THE OBSTETRICAL PATIENT IN THE EMERGENCY DEPARTMENT

Women in the United States give birth to over four million babies annually.\(^1\) Most of these pregnancies and births are low risk and uneventful. However, a significant number of pregnancies and births are high risk or have unplanned events (e.g., premature labor, bleeding, fetal distress, or maternal trauma). The majority of complications occur at or very near the time of delivery and result in increased morbidity and mortality to the mother and the unborn child. What is supposed to be a joyful event can turn tragic very quickly.
Emergency Severity Index (ESI)

A Triage Tool for Emergency Department Care

Version 4
Triage of the Obstetrics Patient in the Emergency Department: Is There Only One Patient?

ABSTRACT

PA-PSRS has received a number of reports related to the management of pregnant patients in the emergency department. In many instances, reports submitted through PA-PSRS reflect a lack of effective communication between emergency and obstetrics department staff. When a pregnant patient arrives at the emergency department, there are really two patients. Optimal care of both patients can only be achieved through a systematic approach to care that involves open communication between emergency and obstetric services. Risk reduction strategies include having policy and procedures in place that ensure a systematic approach to the triage and initial assessment of the pregnant patient with consideration of the presenting complaint, gestational age, availability of testing and consultants, and fetal monitoring requirements.

http://patientsafetyauthority.org
Case Studies

- A pregnant woman at 32 weeks’ gestation presented to the Emergency Department (ED) as a trauma patient. An initial ultrasound and fetal heart tones indicated a viable fetus. The patient underwent a series of imaging studies and treatment of superficial injuries, after which she was transferred to [the labor and delivery (L&D) department] where fetal heart tones were not detected. A nonviable fetus was delivered. Continuous fetal monitoring had not been initiated in the ED.
Case Studies

- A pregnant patient arrived in the ED with complaints of chest pain and shortness of breath. The ED staff instructed her to ambulate to the OB department. She was transferred back to the ED via wheelchair for evaluation, resulting in a delay in treatment.
Case Studies

- A pregnant [trauma] patient was transported to L&D from the ED for continuous fetal monitoring. The patient’s cervical spine x-rays had not been done and her cervical collar had been removed. In L&D, an ED nurse replaced the cervical collar, and portable cervical spine x-rays were performed.
Key Areas for Collaboration
Determine Who Is Pregnant

- Be suspicious – Ask!
- Be aware of cultural issues
  - Age related
  - Marital status related
- Those who don’t know
  - Urine pregnancy screening
- Those who know but won’t say or are in denial
  - Urine pregnancy screening
  - Pelvic ultrasound
- Those who know
Those Who Know They Are Pregnant

- Unsure dates
  - Fundal height relative to umbilicus
    - At umbilicus = 20 weeks
  - Pelvic ultrasound

- Known “Estimated Date of Confinement” (EDC) or known “Last Menstrual Period” (LMP)
  - Determine weeks of gestation
    - Low tech
    - High tech
Determining Weeks of Gestation

- **If dates are known**
  - If EDC in known, calculate backwards from EDC using wheel or smart phone app
  - If only LMP is known, calculate forward from LMP

- **Key is to determine if greater than or less than 20 weeks**
  - Fetal viability
    - Inherent inaccuracy of pregnancy dating
  - Risk of preeclampsia
Triage Algorithm – Initial and Less Than 20 Weeks

- Initial triage
  - What is presenting problem
  - Determine gestational age in weeks

- Less than 20 weeks
  - Primary assessment
    - Maternal vital signs
    - Fetal heart tones by Doppler stethoscope if greater than 12 weeks
    - Less than 12 weeks may require ultrasound to determine fetal viability
Pregnancy Less Than Twelve Weeks

- If chief complaint is abdominal pain, vaginal bleeding or syncope
  - Quantitative serum Human Chorionic Gonadotropin (HCG)
  - Pelvic ultrasound
  - Correlate two results to diagnose ectopic pregnancy

- If ectopic pregnancy suspected or diagnosed, consult with OB physician
Triage Algorithm Greater Than 20 Weeks

- Greater than 20 weeks
  - Transport to Labor and Delivery (L&D? L&B?) unit for assessment – patient must be escorted
    - EMTALA – L&D nurses as qualified medical screeners
  - Exceptions:
    - Major trauma
    - Shortness of breath/asthma
    - Chest pain/cardiac disease
    - Seizures – assume eclampsia until proven otherwise
    - Imminent delivery – definition may depend on distance to L&D
Patients over 20 weeks kept in the ED due to above exceptions
  - Have qualified L&D nurse come to ED to assess the fetus
    - Must have fetal monitor in the ED or bring along a portable from L&D
  - Notify patient’s obstetrician or ED on-call obstetrician in cases of major trauma, seizures, or imminent delivery to come to ED to participate in care
Communicate, communicate, communicate

- If unsure about triage in ED, call the L&D charge nurse
- Alert and inform L&D if you have a patient to send who is greater than 20 weeks
- If you know a transport is coming with major trauma, heavy vaginal bleeding or seizures in a pregnant woman, alert L&D nursing staff and appropriate OB physician ASAP
Documentation Is Absolutely Critical.

- Document, document, document
  - Absence of clear and complete clinical documentation is a twofold problem
    - Communication between clinical areas
    - Defensibility of the chart in case of adverse outcome
Special Considerations

- **Motor vehicle accidents**
  - If greater than 20 weeks, requires minimum 4 hours of fetal monitoring
    - Possible abruption or other complication
  - Applies to any blunt abdominal trauma
  - Should be done before assessment or treatment of minor trauma

- **Headache**
  - Look for possible signs of preeclampsia
    - High blood pressure, edema, proteinuria, epigastric pain, jaundice
Gray Areas

- Vaginal bleeding and/or abdominal pain between 14 and 20 weeks gestational age
- Triage of minor complaints (cough, cold symptoms, sprains) over 20 weeks gestational age
  - Evaluate fetal status in L&D and then return to ED
  - Communication with L&D is helpful
Gray Areas Can Be Dangerous!

- What really is a minor complaint in a pregnant patient?
- Especially when over 20 weeks gestation?
  - Headache?
  - Upper abdominal pain?
  - Suprapubic pain/pelvic pressure?
  - Rash?
  - Yellowish skin?
  - Is there a pregnancy condition unrelated to the perceived chief complaint?
Over 20 Weeks Gestation Is a Danger Zone

- Things have been missed, and will be missed again if triage is not done appropriately
  - Preeclampsia
  - Incompetent cervix
  - Preterm labor
  - Acute fatty liver of pregnancy

- This needs to be understood by staff in both L&D and Emergency Room
Facilities With No OB Service

- Remember to always follow EMTALA
  - Do your medical screening exam
  - Always check fetal heart tones over 12 weeks and establish fetal viability

- If appropriate after MSE refer patient
  - Their own primary OB provider
  - Your OB provider on-call
  - Your referral facility

- Follow The First Law of EM
  - “Do what you gotta do!” – Dr. Larry Foreman, French Hospital Medical Center, San Luis Obispo
In Conclusion

- Establish Pregnancy Status
- Establish Gestational Age
- Transport to L&D if greater than 20 weeks gestation unless delivery is imminent or potentially life-threatening condition is present
- Complete MSE within 20 minutes for pregnancies greater than 20 weeks
- Primary assessment in ED for less than 20 weeks gestation
- COMMUNICATE!
- DOCUMENT
Program Implementation
Algorithm

Algorithm Continued

Female patient aged 13-50 presents to Emergency Department

Is the patient pregnant?

Yes

Is gestational age 20 weeks or greater?

Yes

Emergency Severity Index level 1 or 2?

Having Seizures?

Imminently delivering?

Having major trauma?

Yes

Communicate to perinatal personnel the immediate need come to Emergency Department to evaluate fetus.

No

Transport or accompany patient to perinatal department or have qualified perinatal nurse and/or provider come to Emergency Department to conduct Obstetric evaluation.
Recommendations for Interdepartmental Communication and Standardization

- Determination of Pregnancy
- Standardization of Triage
- Gestational Age-Based Triage
- Obstetric Evaluation
- Escorting Women
Moving Forward

- Locally
  - Create a collaborative environment between departments.
  - Include leaders, charge nurses, and staff.

- Overall Safety and Quality Needs
  - Data on existing models of triage
  - Triage (ESI) levels for OB patients in ED
  - Maternal/fetal outcome data for OB patient in ED
Lessons Learned

Act
- What changes are to be made?
- Next cycle?

Plan
- Objective
- Predictions
- Plan to carry out the cycle (who, what, where, when)
- Plan for data collection

Study
- Analyse data
- Compare results to predictions
- Summarise what was learned

Do
- Carry out the plan
- Document observations
- Record data
THANK YOU

QUESTIONS????