Women's Health Grand Rounds

Safe Motherhood Initiative:
An Opportunity to Prevent Maternal Mortality

ACOG District II and New York State DOH

March 6, 2008

Safe Motherhood Initiative Speakers

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- **Sponsored by the American College of Obstetricians and Gynecologists (ACOG) District II/NY**
- **Produced by University at Albany, School of Public Health**

Objectives

- **Describe the latest trends in maternal mortality**
- **Describe the Safe Motherhood Initiative's goals and objectives**
- **Explain the importance of on-site maternal mortality reviews through case presentations**

Viewer Call-In

Phone: 800-452-0662

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Evaluations

Please fill out your evaluation and post-test online:

www.albany.edu/sph/coned/whgracogsmi.htm

Continuing education credits are available.

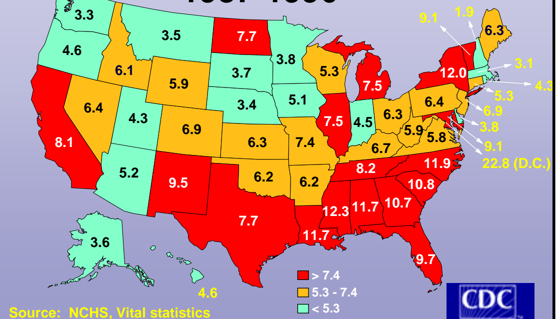
Thank You!

U.S. Maternal Mortality Today
On the rise?

Figure 1. Maternal mortality rates, United States, 1915–2003

Hoyert DL. Maternal mortality and related concepts. National Center for Health Statistics. Vital Health Stat 3(33). 2007.

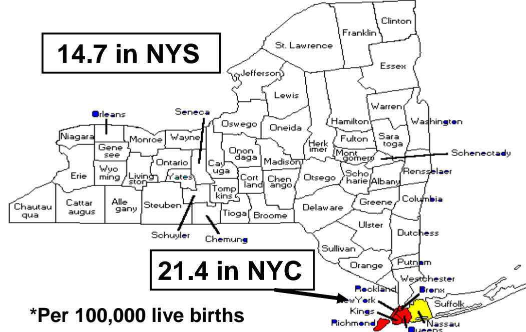
Maternal Mortality Ratios
1987-1996



Source: NCHS, Vital statistics

A Regional Look at Maternal Mortality Ratios* for the Year 2005

14.7 in NYS



21.4 in NYC

*Per 100,000 live births

Safe Motherhood Initiative
collaborative project of
ACOG District II/NY and New York State Department of Health

- Initiated in 2001
- Voluntary program
- Onsite maternal mortality reviews
  - Confidential, protected
- Review of aggregate de-identified data
- Policies & protocols
- Educational programs

Safe Motherhood

Preconception Care

Managing Maternal Hemorrhage

Most important reason to report

There is face on every loss…..
We owe it to them to prevent a recurrence!!

Safe Motherhood Initiative Chronic Disease

54% of the pregnancy-related deaths had a history of chronic disease
- Hypertension
- Cardiac Disease
- DVT
- Diabetes
- Autoimmune Disease
- Sickle Cell Disease

- Obesity was the most commonly identified (66%)

Renal Transplant

- 29 y/o P0 presents to MFM for 1st PNV at 15 wks
- SLE, renal failure, dialysis
- 1998 renal transplant from sister
  - Failed after 6 days, secondary to thrombosis
- 1998 2nd renal transplant from husband
  - Stable on immunosuppresive meds for 6 years
- Nephrologist stops meds at 7 wks of preg
- Abnormal u/a & inc creatinine – 10 wks
- Renal bx in pregnancy to r/o rejection – 10 wks
- Hemorrhage from bx – nephrectomy

Renal Transplant

- Pregnancy on dialysis since 10 wks
- Uncontrollable HTN, seizures at 23 wks, pt declines TOP despite risk of maternal death
- Fetus IUGR (280gm at 24 wks) – IUFD
- Patient anephric on dialysis, awaits transplant

Renal Transplant
Preconception Counseling & Recommendations

- Evaluate length of time without rejection
- Continue immunosuppressive medications
  - Benefit of controlling rejection outweighs theoretical risks of medications
- Obtain baseline renal function
- Folic acid

Sepsis: Case

- 21 year old G1P0 at 28 wks c/o fever/chills, malaise, nausea, back pain and SOB
- T 39° BP 85/40 HR 130 RR 24 O2 sat 98% RA
- FHR: 170s with minimal variability; Toco: irregular contractions; Ultrasound: AGA fetus, normal AFI
- PE: flushed, rigors, clear lungs, nontender fundus, right CVA; Cx-L/C/P, no ROM
- Prior Ucx >100,000 pansensitive E. coli

Sepsis: Case

- Despite acetaminophen and 1000cc of crystalloid while awaiting laboratory results she felt worse with increasing SOB, lethargy
- Antibiotics not yet started
- BP 80/40 HR 140 RR 32 O2 sat 92% on room air, T 38.5. UO in the hour since arrival is 15cc.
- Labs results remarkable for: WBC 18,000, UA +protein, nitrites, leucocytes and bacteria, BUN 12, Creatinine 0.9

Sepsis: Background

- Incidence
  - Bacteremia 7.5 per 1000 obstetric admissions
  - Sepsis in only 8-10% of bacteremic OB patients
- Mortality approx 3%
  - Delayed diagnosis
  - Failure of early aggressive treatment
  - Combination of end-organ dysfunction

Sepsis: Barriers to Appropriate Prevention, Recognition and Treatment

- Prevention
  - Hesitant to start therapy for presumed UTI
  - Inadequate follow-up of cultures and sensitivities
- Recognition
  - Abnormal vital signs under-appreciated (Increased HR, RR, decreased BP attributed to pregnancy)
  - Confusion over absence of fever (may become hypothermic as shock progresses)

Sepsis: Barriers to Appropriate Prevention, Recognition and Treatment

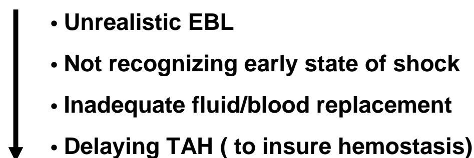
- Treatment Delay
  - Due to delay in recognition of seriousness
  - Inadequate knowledge about improved outcomes with IV antibiotics started within 1 hour
  - Technical issues (antibiotics in pharmacy, patient transfer, etc)

Sepsis: Management

- Principles
  - Treat mother, monitor fetus
  - Source control
  - Initial resuscitation
  - Prevent secondary infections
- Goal
  - Eradicate infection
  - Prevent organ failure

Maternal Mortality
Hemorrhage

Obstetrical Hemorrhage

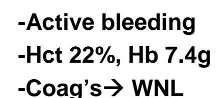


- Unrealistic EBL
- Not recognizing early state of shock
- Inadequate fluid/blood replacement
- Delaying TAH (to insure hemostasis)

Maternal Mortality *(Majority are preventable)*

Maternal Mortality
Peripartum Hemorrhage

Patient 38 yrs old with a known Dg of Placenta Previa. Admitted at 32 wks gest wit vag bleeding



-Active bleeding
-Hct 22%, Hb 7.4g
-Coag's→ WNL

Emergency C/S performed

Maternal Mortality
Peripartum Hemorrhage

Time	BP	Urine	Hct	Action
5/2-8 AM	120/70	10cc		
5/2-9 AM	115/70	6cc		
5/2-10 AM	113/70	4cc	20%	
5/2-11 AM	130/75	4cc		
5/2-12 PM	115/70	2cc		
5/2-1 PM	125/70	2cc	15%	
5/2-2 PM	118/75	2cc		

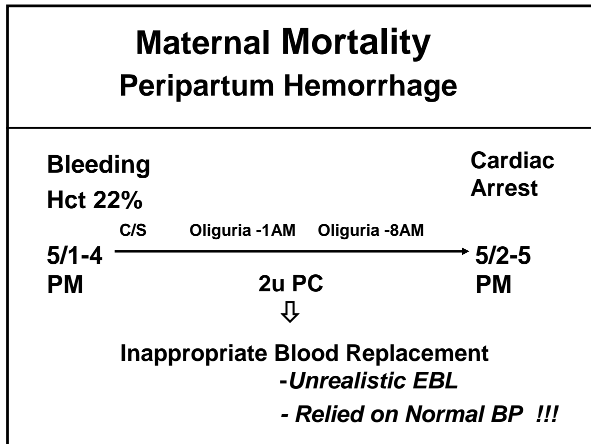
Maternal Mortality
Peripartum Hemorrhage

Time	BP	Urine	Hct	Action
5/2-3 PM	120/70	0		3rd RBC
5/2-4 PM	130/80	0		4th RBC

5 PM → Cardiac arrest

CPR failed

5[35] PM → Pronounced dead



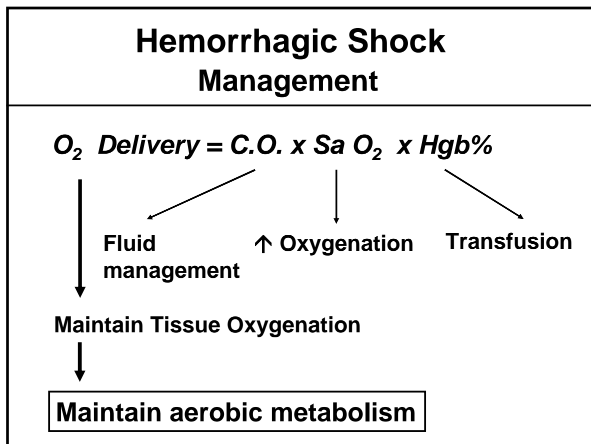
Hemorrhagic Shock
Role of Vital Signs

Vital Signs

→ When abnormal in the context of hemorrhage they are helpful in assessing the severity of the hypovolemic shock.

→ When normal however, they are not reliable in assessing the severity of the hypovolemic shock

Wo et al Cr Care Medicine 1993



Hemorrhagic Shock
Indications for Transfusion

1. Signs & Symptoms of Hypovolemic Shock	*Bp, Pulse, Urine Output, O_2 Sat pH, BD, Clinical signs*
2. Pre-existing medical complications	*Cardiac (can'nt ↑ CO, etc) Cr pulmonary dis*
3. Likelihood of further bleeding	*Surgical hemostasis → Difficult Coagulopathy*
4. EBL ???	*Underestimated→ 40-50%*

Maternal Mortality
Hemorrhage

Decreasing the risk of maternal mortality from hemorrhage:

1. Identify Patients at risk for PPH
2. Recognize early sign of hypovolemic shock
3. Accurate/realistic assessment of EBL
4. Timely intervention (medical, surgical,)
5. Clinical support
   -Surgical, anesthesia, critical care, nursing
6. Laboratory/Blood Bank support
7. Logistical support

Patient Safety Initiative

Improving Patient Safety

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- Team approach to patient care
- Improved Communication
- Evidenced based clinical protocols

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- Safe Motherhood Initiative -

Patient Safety
- Historical perspective -

In 1999 the Institute of Medicine published "*To Err is Human* " reporting that 44-98,000 people die in US Hospitals annually as a result of medical errors

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Bad systems not bad people, lead to majority of errors and injuries, → *a crucial scientific foundation for improvement of safety in all successful high-hazard industries (i.e. health care)*

Patient Safety Initiative
- Historical perspective -

Individual Performance

???

- Human error
- Poor communication
- Conflict of opinion
- Lack of standardization
- Workload

↓

- Quality Care
- Good Outcome

Patient Safety Initiative
- Crew Resource Management -

Team approach (CRM)

Safety net

- Cross-monitoring
- Improves communication
- Improves standardization
- Mutual support
- Situational awareness
- Conflict resolution
- Variable workload

↓

- *Quality Care*
- *Good Outcome*

Patient Safety Initiative
- Crew Resource Management -

Team building

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- Professionalism
- Courtesy
- Mutual respect
- Encouraging discussions, questioning and expressing different points of view

Resources

- ACOG District II/NY Website: www.acogny.org
- Centers for Disease Control and Prevention (CDC) www.cdc.gov
- New York State Department of Health www.health.state.ny.us

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