

# The Effectiveness of A Maternal Death Review Committee in Reducing Maternal Mortality & Morbidity

Stacie E. Geller, PhD

Associate Professor

Department of Obstetrics & Gynecology

Director, National Center of Excellence in  
Women's Health

University of Illinois, Chicago

# Background

- Since 1982, the US has made no progress toward achieving the goal of 3.3 maternal deaths per 100,000 live births overall, & 5.0 maternal deaths per 100,000 live births among African American women
- The current overall maternal mortality ratio is 11.5 with an increased risk of a pregnancy-related death for African American women, older women, and women with no prenatal care (Berg et al,

2003)

# Background

- Illinois has faced similar disappointing trends in maternal mortality
- Between 1982 – 1996 the overall maternal mortality ratio was 7.5 / 100,000 live births
- Maternal mortality ratio for African American women was 21.3 / 100,000 live births compared to 4.3 for white women
- The black to white ratio of 5.0 was one of the highest in the nation (MMWR, June 1999)

# Background

- In the U.S., pregnancy-related mortality surveillance is a state responsibility, although federal agencies do provide national data & assistance in coordinating activities in this area
- The process for the identification, evaluation & comparison of maternal deaths across the US has been constrained by:
  - a lack of uniformity in definitions
  - reporting requirements
  - evaluation mechanisms among the individual States & CDC's NCHS

# Background

- In 1992, IDHS implemented a data collection effort which moved beyond vital records reporting for the analysis of maternal deaths
  - Maternal Mortality Review Form (MMRF) with more detailed information about the death as well as a mandated review process within the Perinatal Center
  - No data base or dissemination effort

# Background

- In 1999, a collaborative effort between the UIC, IDPH, IDHS, & the SQC began to address data collection & analysis issues including:
  - Establishing appropriate methods for categorizing & reporting maternal deaths
  - Extending the surveillance of maternal death past 90 days after termination of pregnancy
  - Modifying the data collection form used to summarize each maternal death to include additional significant data elements
  - Developing a uniform database
  - Analyzing & disseminating information for use by the perinatal system and the public
  - **Implementing a State Maternal Death Committee to review cases from a Statewide prospective in order to examine patterns of preventable causes**

# Background

- As a result of this effort much progress has been achieved
  - Rule change was achieved so that deaths occurring to women who were pregnant within the past year must be reported
  - A new expanded data collection form has been implemented
  - Data entry and storage in an electronic database
  - A Maternal Mortality Review Committee (MMRC) was initiated in August of 2001, meets quarterly & routinely carries out case reviews
    - 1<sup>st</sup> case review was Oct, 2001

# The MMRC Committee in Illinois

- MMRC is an expert committee which reviews maternal deaths in the state from across the 10 perinatal centers
- Proceedings are conducted under the protection of the Illinois Administrative Code, Chapter 1: Part 657
- **The discussions & findings of the MMRC Committee are protected from discovery and use in legal procedures**

# MMRC Membership

- Members with expertise in various aspects of clinical medicine and public health including:
  - Representatives from IDPH
    - Data, program, and policy members
  - Representative from the Chicago Department of Public Health
  - 2-4 Directors of Maternal Fetal Medicine Divisions
  - Obstetrician representing ACOG
  - Pathologist
  - 3 Perinatal Network Administrators
  - Midwife
  - Nurse
  - MCH Academic from a SPH versed in principles of epidemiology and /or public policy

# Scope of Work

- The MMRC acts as a scientific as well as a public health body to insure that the appropriate cause of death had been determined
- The committee has 4 main responsibilities:
  - Review selected maternal death events
  - Review aggregate statistical reports regarding maternal deaths to determine:
    - possible trends or clusters of events
    - uniformity of the case review process through out the State
  - Make recommendations for improvement to appropriate public health & professional institutions
  - Work with the IDPH to insure state wide dissemination of findings

# Scope of Work

- The role of MMRC is to examine medical and technical aspects of the care for women who have died **but most importantly to identify patterns of these adverse outcomes and address non-medical and system-related factors that may have contributed to a maternal death**
- The MMRC may come to a consensus that the cause of death is different than the one determined at the initial joint review &/or determine that a different disposition should be assigned
- The scope of the work could be expanded to include cases of near-miss or life-threatening morbidity

# Criteria for Case Selection

- All pregnancy related deaths
- All potentially avoidable deaths
- All networks are sampled in proportion to the number of deaths that occurred in the region
  - These cases can be pregnancy related OR pregnancy associated
- All cases requested for review by a Perinatal Center

# Is the MMRC Effective in Improving Maternal Health?

- Data Use
- Identify patterns of these adverse outcomes
- Preventability
  - Address medical, non-medical & system-related factors that may have contributed to a maternal death
- Feedback & recommendations
- Policy and procedural issues
  - Legal issues

# Use of Data

- Report to examine the maternal mortality review data collected from 1994-2001
- Data had never been systematically analyzed
- Data used to gain insight into data quality issues & provide historical perspective on maternal mortality in Illinois as the State moves toward more sophisticated maternal mortality surveillance
- Report focused on 4 areas:
  - Assessing data quality
  - Preliminary analysis, including trends over time
  - Making recommendations regarding the usefulness of the data
  - Making recommendations for data collection & analysis in the future

# Findings: Data Quality

- Data quality was considered along two dimensions:
  - Completion of reviews forms was relatively low & differential inclusion of certain factors
    - e.g., geographic region, race / ethnicity, maternal age
  - Incomplete & missing data elements
    - e.g., education, ICD-9 coding

# Recommendations: Next Steps

- Revise MMR form
- Work with the state for more timely access to medical records
- Additional training (e.g., ICD-9 coding)
- The data quality issues are critically important, but even with the highest quality data for maternal death cases (the numerator) it will not be possible to conduct a full analysis without access to birth cohort data (the denominator)

# Identify patterns of adverse outcomes

- Across institutions
- Types of institutions
- Cause of Death
- Timing
- Preventability
  - Patient
  - System/Facility
  - Provider

# Cause of Death

- DIC/Pulmonary Emboli
- Other Thromboembolic Events
- Uterine Rupture
- Septic Shock
- Amniotic Fluid Emboli
- Intracranial Hemorrhage
- Anoxic Encephalopathy
- Hemorrhage
- Homicide/Suicide/Motor Vehicle Accidents

# Disposition of Mortality: Issues Related to Preventability

- Not Avoidable
- Undetermined
- **Potentially Avoidable** *(Must include a plan of action)*
  - By antepartum, intrapartum or postpartum factors
  - PNC site
  - Hospital of delivery
  - Hospital of death
  - Emergency room
  - Provider
    - PNC
    - Delivery
    - Post partum
  - Patient
  - Systems

# Preventability: Issues Across Multiple Levels

- Provider: Knowledge
  - Lack of proper risk assessment (failure to ID high risk)
  - Lack of basic assessment of vital signs
  - Delay in care
  - Inadequate or non-existent documentation
  - Incomplete/inappropriate management
  - Deficit in knowledge/training

# Preventability: Issues Across Multiple Levels

- System
  - Appropriate Consultation
  - Lack/inadequate policies based on accepted standards of practice
  - Compliance issues (ambulatory care centers)
  - Lack of police, ambulance and paramedic records
  - Lack of autopsy performance and/or report as there is often no criteria for when an autopsy is indicated in a maternal death case
  - Inadequate oversight of obstetric procedures by the Perinatal System
  - Inspection of equipment and assessment of procedures for emergency response is monitored for Obstetric cases

# Feedback & Recommendations

- Implement Quality Improvement policies & procedures
- Establish & enforce standards reflective of IDPH/JCAHO requirements
- Comprehensive site visit by Perinatal Center
- Hospital review of Obstetric documentation
- Appropriate Consultation for high risk
- Peer Review
- Obstetrics Morbidity/Mortality Reviews
- Review of physician privileges
- Ambulatory Facility Site Visits
- Improved access to police, paramedic & ambulance reports

# Limiting Steps

- Policy and procedural issues
  - Working within a bureaucracy
  - Sharing of data
  - Confidentiality
  - Legal issues regarding release of information

# Conclusions

- Raising the level of awareness across the state with multiple stakeholders
- Change will happen through multiple efforts
- MMRC is one part of that effort









Thank you!