Methodological issues of measures of maternal morbidity/mortality

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Introduction and objectives (1)

- The death of a mother is a tragedy:
  - Loss of a young life
  - A traumatic event
  - Immense impact on the well-being of the family members who survive her
  - Adversely affects survival and development of her children
  - A loss to the society

Introduction and objectives (2)

- Morbidity causes wastage in:
  - Time
  - Resources (human and financial)
- May lead to loss of life
- Permanent or partial loss of some functions

Introduction and objectives (3)

- Reported MM/MM underestimates the true magnitude of the problem by 70% in some countries (Royston and Armstrong 1989)

- It is estimated that in 1993 in the Americas almost 20.000 women died from pregnancy/ complications

- Three times as much, suffered morbidity

Introduction and objectives (4)

- A study of MM among 20.300 French speaking women in West Africa from pregnancy through delivery and post partum showed:
  - 1/3 had one light morbidity during pregnancy
  - 1/16 suffered severe morbidity
  - 340 lost their lives
- In Cameroon, MM2 stands at 640/100.000 LB
- MM1values are not known
- This explains the importance of this topic

Introduction and objectives (5)

- Measures of MM1/MM2 constitute a component of health information system
- It permits :
  - Identification
  - Notification
  - Quantification
- Determination of the causes and avoidability of MM1/MM2 for a:
  - Defined time period
  - Geographic location
  - With the goal of orientating measures necessary for prevention

Rationales (1)

- Establish an accurate assessment of the magnitude of MM1/MM2

- This will permit/compel:

  - Policy and Decision makers to pay greater attention to the problem

  - Evaluations to have a more accurate baseline for assessing interventions

  - Clinicians/health care providers can understand what actions need to be taken at different levels

Rationales (2)

- The overall goal is to monitor and reduce MM1/MM2

Overall objectives

- To guide activities whose aim is to reduce MM1/MM2 by

    – Collecting

    – analysing and interpreting data

    – Reporting finalising and making recommendations for action

Specifics objectives

1. To collect accurate data on all MM1/MM2
   a. Number-identification audit of all MM1/MM2
   b. Cause – investigation audit of all MM1/MM2
2. To analyse data collected
   a. Trends in MM1/MM2
   b. Causes of morbidity/mortality
   c. Avoidability of MM1/MM2
   d. Cluster risk factors and HR groups

3. To make informed recommendations for actions to decrease MM1/MM2 such as decreasing unwanted pregnancies etc..

   a. Community education
   b. Timeliness of referrals
   c. Access to and delivery of health services
   d. Quality of care /training needs
   e. Legislation
   f. Resource distribution

4. To disseminate the findings and recommendations
5. To evaluate the impact of interventions
6. To increase awareness among families
7. To allow the comparability of MM1/MM2
8. To identify key areas requiring further research

Maternal morbidity/ obstetric morbidity (1)

- Definitions:

Diseases that affect a woman who is or has been pregnant from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes.

Maternal morbidity/ obstetric morbidity (2)

Maternal mortality is the death of a woman while pregnant, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes (WHO 1979).

Measures of MM2

- Death of a woman of reproductive age

- Identification of case as a maternal death

- Investigation of medical and non medical causes of death

- Determination of avoidability

- Analysis of data

- Action: dissemination of recommendations interventions and evaluation

Identifying maternal deaths

- Identify all deaths that occurred among women of reproductive age

- Establish which deaths occurred among women during or within 42 days of delivery

- Investigate all deaths among women during or within 42 days of termination of pregnancy

- Determine which deaths were caused by pregnancy or childbirth, its complications or management

Sources of information

- Death certificates

- Hospitalisation records

- Community identification of deaths

- Formal surveillance systems

Investigation of deaths (audits)

- Provides information about the cause
- Guides the development of interventions to prevent such deaths
- Aim at successful investigation of MM2 and not to blame
- Information obtained is confidential
- Conducted by personnel not directly involved in the management

- What is investigated:
  - Medical/pathological causes
  - Non-medical causes
    - Timeliness of problem recognition, decision making and actions
    - Access to care and logistics of referrals
  - Quality of medical care (short comings) of the health services

- Sources of certificates
  - Death certificates. Every death is registered with an accurate cause
  - Hospital records
  - Community identification of deaths
  - Formal surveillance systems. Where maternal death is notifiable

- Establish the medical cause of death:
  - Hospital deaths
  - Deaths occurring outside of the hospital
- Establish the non-medical causes of death
  - Timeliness of problem recognition and decision making
  - Access to care/logistics of referral
  - Assess the quality of medical care

- How is avoidability determined?

  N/B: investigation – determine cause of death, avoidability – prevention
- Factors to be assessed to determined avoidability:
  - Family / community level
    - Patient / family factors
  - Did the woman and her family
  - Recognise that a problem existed?
  - Seek a solution?

- Comply with any medical advice given
- TBA factors – did the TBA
  - Manage the labour and delivery correctly
  - Recognise that a problem, existed
  - Refer the woman appropriately and without delay
  - Consider herself part of the local heath care system

- Formal health care delivery system
- ANC - Determine whether:
  - The woman received ANC
  - ANC followed country guidelines
  - Risk factors and medical problems were correctly assessed and treated
- Hospital factors - Determine whether
  - Essential obstetrical functions were available at the first referral level
  - Resources were available to solve the problem

- Protocols were available and appropriate
- Care was available regardless of the ability to pay
  - Health care provider factors – Determine whether the health care provider/personnel
- Were trained to treat the problem correctly
- If so, treated the problem adequately
- Were sensitive to the social and cultural values of the patient and her family

- Intersectoral level
  - Transportation factors
  - Education factors
  - Communication
  - Status of women

Analysis – turning data into information

A. Qualitative analysis

• Health care delivery system levels
  – Community level – individual, family
  – Formal health care and community system level –health posts, health centres, hospital and associated staff
  – Intersectorial level – education, transport, communication, agriculture

- Possible problems at each level
  - Attitude
  - Skill and knowledge
  - Resources (money, materials, man-power, management skill)

B. Quantitative analysis

- Data tabulation
  - Person – age, race/ ethnicity, education
  - Place – residence, delivery, death
  - Time – year, season, day of week, time of day

- Reproductive characteristics
  - Parity
  - Pregnancy outcome – still birth, livebirth
  - Abortion (induced /spontaneous/ EP
  - Gestational/ duration
  - Type of delivery – vaginal/ cesarean
  - Antepartum, intrapartum, post partum status
  - Delivery to death interval
  - Medical cause of death

Data analysis

- Examine trends in MM2 overtime in a given area

- Compare the risk of MM2 between groups

- Compare data among different groups in the population – age, ethnicity