CAN EMERGENCY OBSTETRIC &NEWBORN CARE REDUCE MATERNAL & NEWBORN MORTALITY EVIDENCE

EMERGENCY OBSTETRIC CARE (EMOC) & EMERGENCY OBSTETRIC &NEONATAL CARE (EMONC)

- EmOC is defined as a package of eight medical interventions required to treat direct Obstetric Complications that cause a vast majority of maternal deaths during pregnancy, at delivery and during postpartum period.
- WHO and others have added immediate newborn care including management of the newborn and resuscitation to the continuum, extending the concept to Emergency Obstetric & Neonatal Care (EmONC)

EMONC SERVICES

- EmONC addresses most common causes of mortality
  - Haemmorhage
  - Obstructed Labour
  - Eclempsia
  - Sepsis
  - Post abortion complications
  - Newborn Asphyxia
  - Low birth weight Newborn
  - Newborn with sepsis
- 98% of the stillbirths and newborn deaths occur in low developing countries, Obstetric complications are responsible 58% of them. Addressing obstetric complications improves stillbirths and neonatal deaths

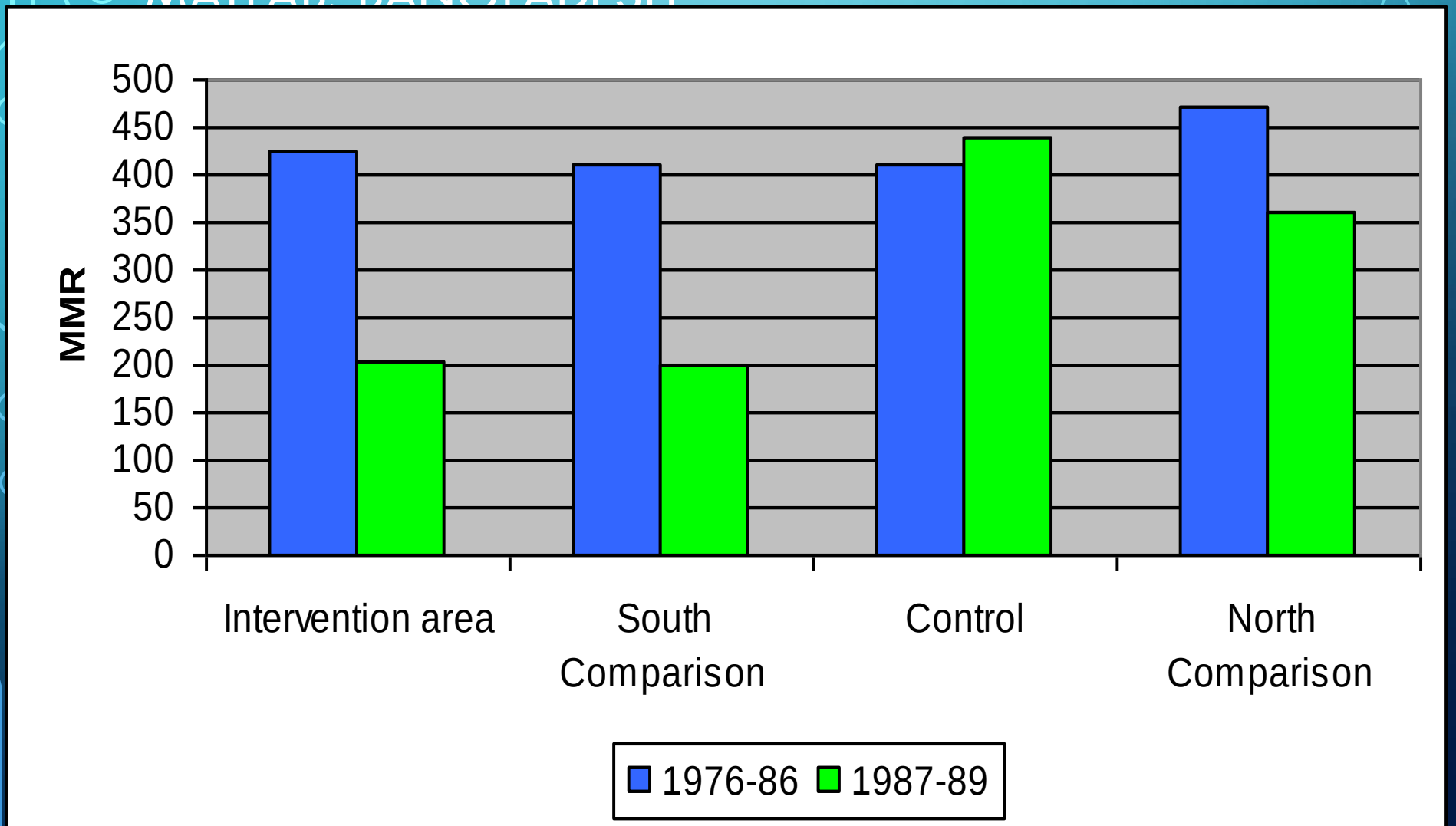
MATLAB STUDY

- quasi experimental study comparing models of obstetric care service provision in Matlab, Bangladesh
- In 1987, a community based maternity project was added to one part of pre-existing MCH/FP Programme, areas north & south received no special services but closely monitored
  - Midwives trained in both normal deliveries and obstetric emergencies posted in 2 health centers in intervention area
  - maternity care clinic was established in Matlab.
  - improved referral to Maternity care clinic (BEmOC)
  - Improved referral to District hospital (CEmOC)
  - Transportation: 24 hours access to boat and boatman & ambulance
- Maternal mortality in intervention area was compared with three other parts of study area, the area of MCH/FP programme not augumented with maternity services (control area) and two areas in which only Government services were available.
- North comparason area had poor access to the to EmOC (up to 4 hours travel time) and South comparason area had good access (less than 2 hours travel time)

Fauveau V, Stewart K, Khan S, Chakraborty J. Effect on mortality of community care programme in rural Bangladesh. Lancet 1991; 338:1183-6

2. Ronsmans C, Vanneste J, Van Genneken J. Decline in maternal mortality in Matlab, Bangladesh: a cautionary tale. Lancet 1997;350:1810-4

DIRECT OBSTETRIC MORTALITY PER 100,000 LB IN MATLAB, BANGLADESH



EFFICIENT AND EFFECTIVE EMOC IN RURAL INDIAN COMMUNITY

- A cohort study in rural India documented obstetric outcomes and patterns for women living in 25 villages surrounding town of Jamkhed, the site of comprehensive rural health project.
- For this study information recorded on 2905 pregnancies for the period January 1996 to June 1999 from projects VHW record books were reviewed
- 2861 pregnancies went beyond 24 weeks and 85% deliveries took place at home, mostly attended by family member
- Of the 15% of deliveries that occurred in a hospital or clinic, most began at home with a transfer to facility during labour
- The rate of Cesarean delivery was 2% of all deliveries in population
- Only 2 maternal deaths were recorded in cohort due to hemorrhage (one in home delivery and one in hospital)

McCord C, Premkumar R, Arole S, Int J Gynecol Obstet 2001;75:297-307

GUINEA BISSAU
LONGITUDINAL POPULATION BASED STUDY

- Nationally representative study, 20 clusters of 100 women randomly selected Over 92% of the study population lived more than 5 km from hospital
- Of 10,931 prospectively registered pregnancies in a 6 year cohort study, 85 resulted in maternal death
- The study gathered information on demographic variables with focus on 4 factors
  - availability and use of health system
  - place of birth
  - presence of health post in village
  - distance of health center and distance of hospital in addition to other
- Maternal death was most strongly associated with increased distance (6-25 km compared to 0-5 km) from a hospital
- Distance more than 25 km from a hospital further increased odds of maternal death
- Thus most women in the study were at increased risk of maternal mortality due to lack of access to a hospital

Hoj L, da silva D, Hedegaard K, Sanusstorm A, Aaby P., Br J Obstet Gynecol 2002;109:792-9

BAMAKO, ASSESSMENT OF MATERNAL MORTALITY,

- A prospective cohort study demonstrates that access to maternity care is not sufficient if the care is not of good quality
- The study followed all pregnancies enrolled over a 3 year period from identification of pregnancy through one year postpartum
- Almost 90% of women in cohort delivered at maternity hospital and all had easy access to EmOC but 15 maternal deaths suggest poor quality

Etard J-F, Kodio B, Traore S, Assessment of maternal mortality and late maternal among a cohort of pregnant women in Bamako, Mali Br J Obstet Gyneacol 1999; 106:60-5

DOMINICAN REPUBLIC

THE PARADOX OF QUALITY OF CARE IN INSTITUTIONAL DELIVERIES

- The findings of Bumako study echo with a study from Dominican Republic, a country with MMR of over 100/100,000 LB
- Here 97% of the women deliver in health facilities most of which provide EmOC
- The quality of care undermines the potential for these services to further reduce MMR

Miller S, Corderol M, Coleman A, Figueroa J, Brito Anderson R, Dabagh R, et al,

ENGLAND AND WALES

- Data from 19th and 20th century from Britain shows a close correlation between availability of medical interventions comprising EmOC and reduction of MM
- In mid 19th century, MMR in England & Wales was 546/100000 LB
- 1934-1950 the MMR Britain fell from 441 to 87 with similar decline in European countries & USA during same period
- This decline corresponds to the advent of widespread use of antibiotics for infection , blood transfusion for haemorrhage and improved surgical techniques
- This is compelling evidence for a strong association between the ability to treat obstetric complications and maternal mortality

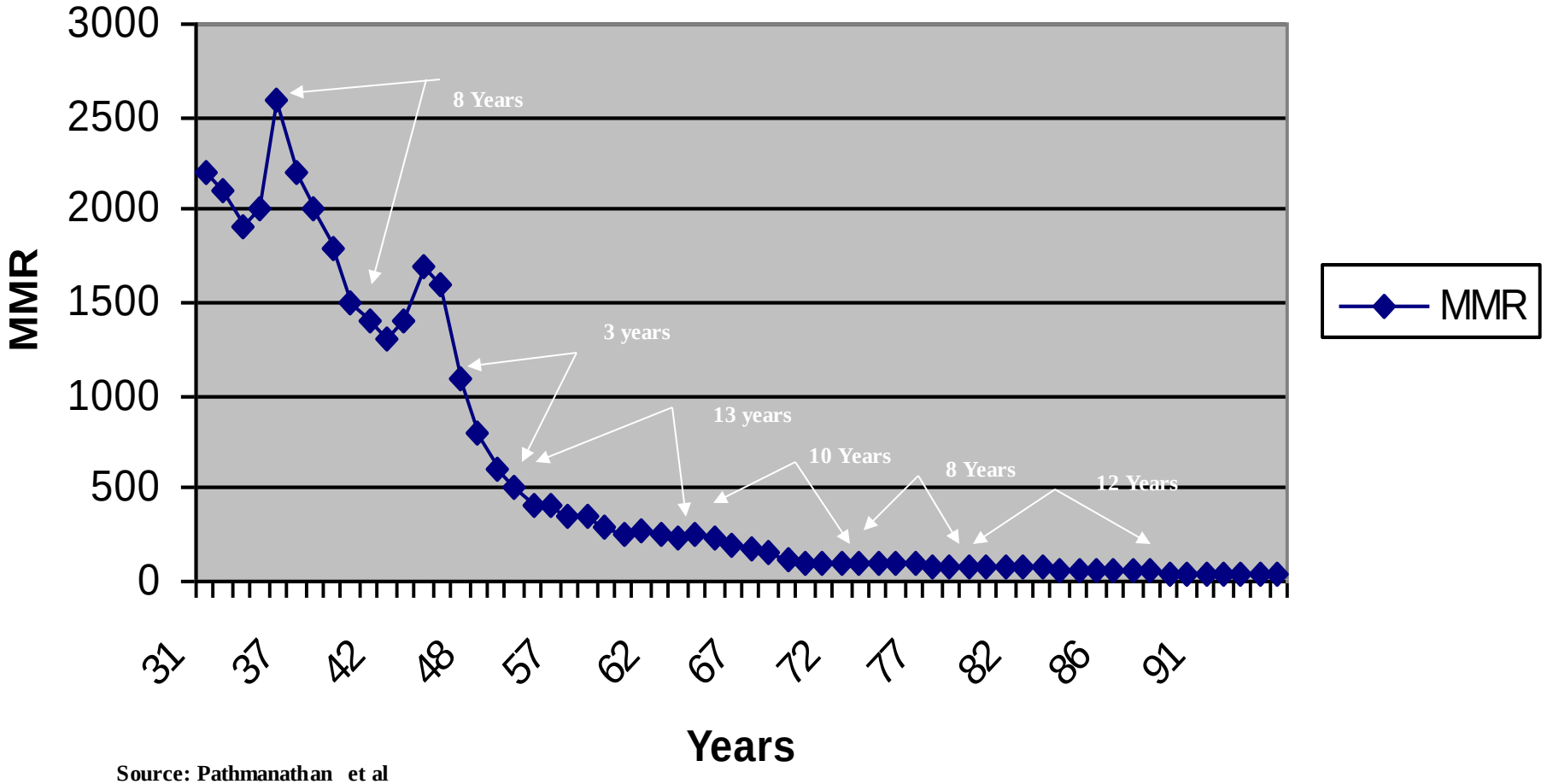
SRI LANKA AND MALAYSIA

- In Sri Lanka MMR was reduced by half from 1056 to 486 in 3 year period during 1947 to 1950
- In Malaysia MMR was halved from 534 to 282 in 7 years from 1950 to 1957
- Both countries achieved second halving of MMRs in subsequent 13 years.
- This experience provides lesson of particular relevance to low and middle income countries

SRI LANKA AND MALAYSIA CONTINUED

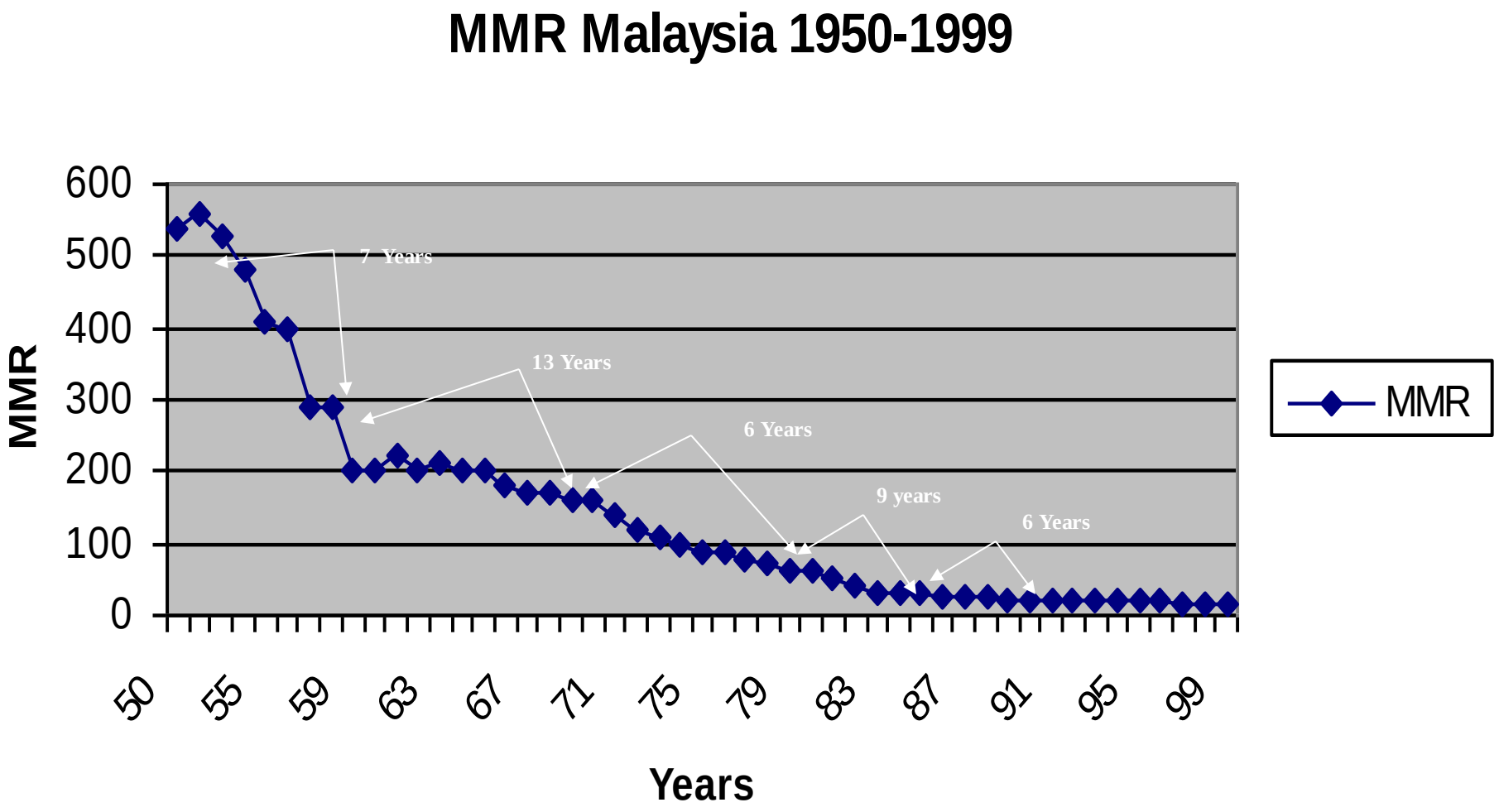
- These dramatic reductions were attributed to step by step implementation of interventions appropriate to evolving capacity of countries health system
- Three phased approach was considered:
  - focus on services availability
  - focus on utilization
  - then on quality improvement
- Key factors were:
  - midwifery care
  - expanding network of facilities that could provide drugs, equipments and back up of a referral system for treating complications

MATERNAL MORTALITY RATIO, SRI LANKA 1930-1995



Source: Pathmanathan et al

MATERNAL MORTALITY RATIO, MALAYSIA 1950-1999



SRI LANKA AND MALAYSIA CONTINUED

- The experience of Sri Lanka and Malaysia is also instructive because these declines in MMR took place when both countries had low per capita GNP and modest expenditure on health
- It shows achievements are not from the level of expenditure , but from pursuing right polices of phased development of widespread accessible network of facilities able to treat obstetric emergencies

RONSMAN C, ETARD J, WALRAVEN G, HOJ L, DUMONT A, DE BURNIS L, MATERNAL MORTALITY AND ACCESS TO OBSTETRIC SERVICES IN WEST AFRICA. TROP MED INT HEALTH 2003;8:940-8

- An ecological study linked population based estimates of maternal mortality from 16 sites of 8 countries in Africa with 5 indicators of maternity care i.e.,

1. Percentage of births with SBA,
2. Percentage of births in health facility,
3. Percentage of births in health center,
4. Percentage of births in a hospital (that can perform surgery), and
5. Percentage births by cesarean.

- Of these 1, 4 and 5 correlated well with estimated maternal mortality

CONTINUED

- Important finding is that access to maternity care and estimated MMR are sharply different in urban and rural areas
- Maternal deaths per 100,000 live births were 241 in urban areas and 601 in rural areas
- In urban areas 83% births took place in health facilities (hospitals) by contrast 80% deliveries in rural areas were at home with no skilled attendance

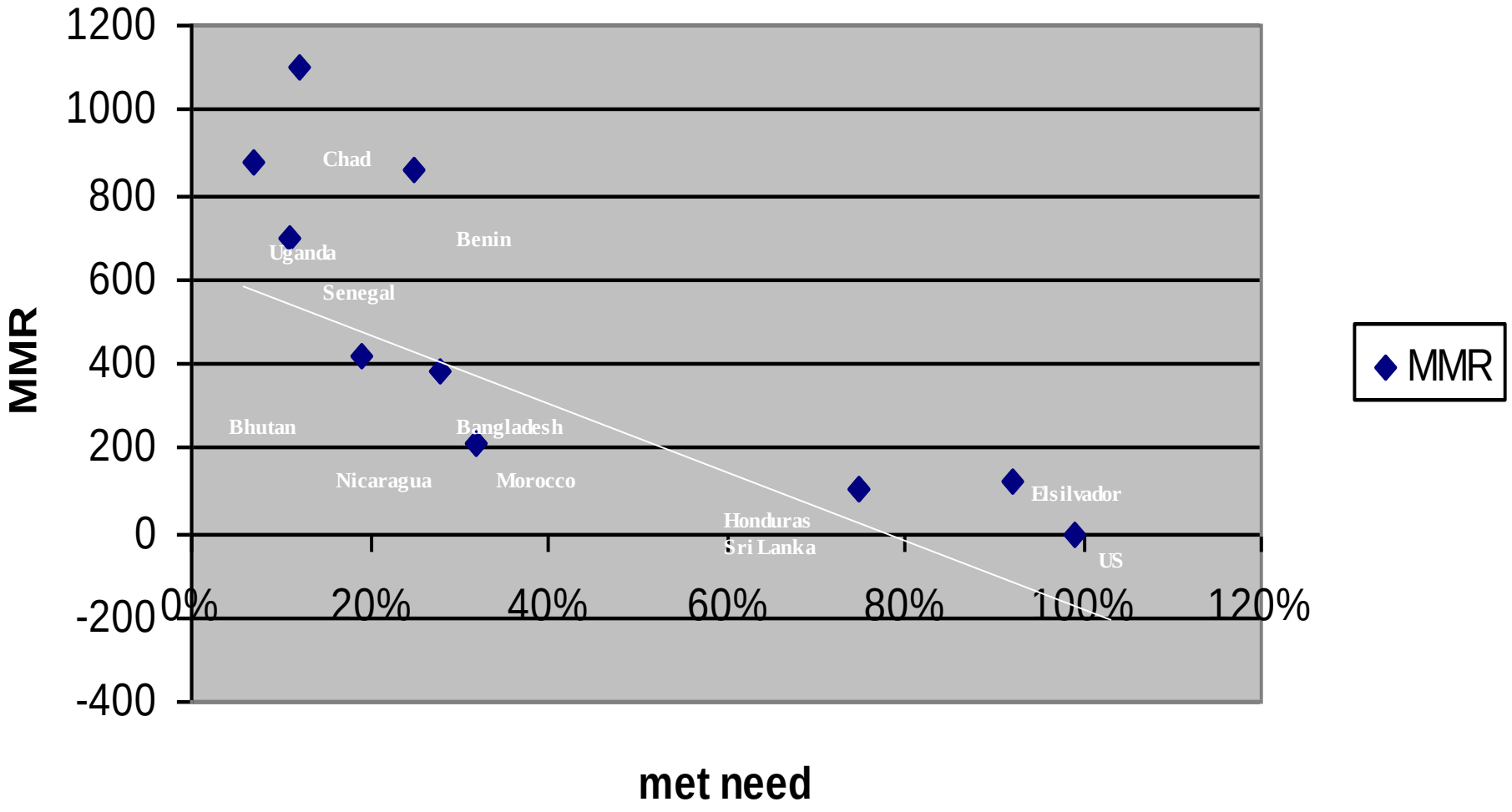
BULATAO R ROSS J. RATING MATERNAL & NEONATAL HEALTH SERVICES IN DEVELOPING COUNTRIES. BULL WHO 2002;80:721-7

- An analysis looked at estimated MMR in developing countries in relation to adequacy of reproductive health services
- The information was gathered from experts in 49 dev countries on maternal health services in 1999-2000
- Regression analysis were run with MMR estimates as dependant variable and expert rating of services as independent variable
- Suggesting that access to the services, regardless of income of the country is associated with low maternal mortality.
- Among services EmOC and access to safe abortion services had stronger relationship with maternal mortality

ANALYSIS OF RELATIONSHIP BETWEEN ESTIMATED MMR AND MET NEED FOR EMOC

- An analysis of relationship betwwen estmated MMR in select countries and met need for EmOC was conducted based on data from need assessments, with US added for comparative purpose
- The graph shows that MMR is inversely related to met need, such that countries with lowest MMR has the highest met need and countries highest MMR have lowest met need

CORRELATION BETWEEN MMR & MET NEED FOR EMOC



CONCLUSION

- Can Emergency Obstetric &Newborn Care reduce maternal & Newborn Mortality?
- Yes, provided that:
  - There is universal access to EmONC
  - Increased utilization of services
  - High quality services
  - Functional, effective and efficient referral system
  - Effective monitoring and supervisory system

THANK YOU