

***Impact of Tsunami***  
***on***  
***Maternal & Perinatal Health***  
***Care in Southern Sri Lanka***

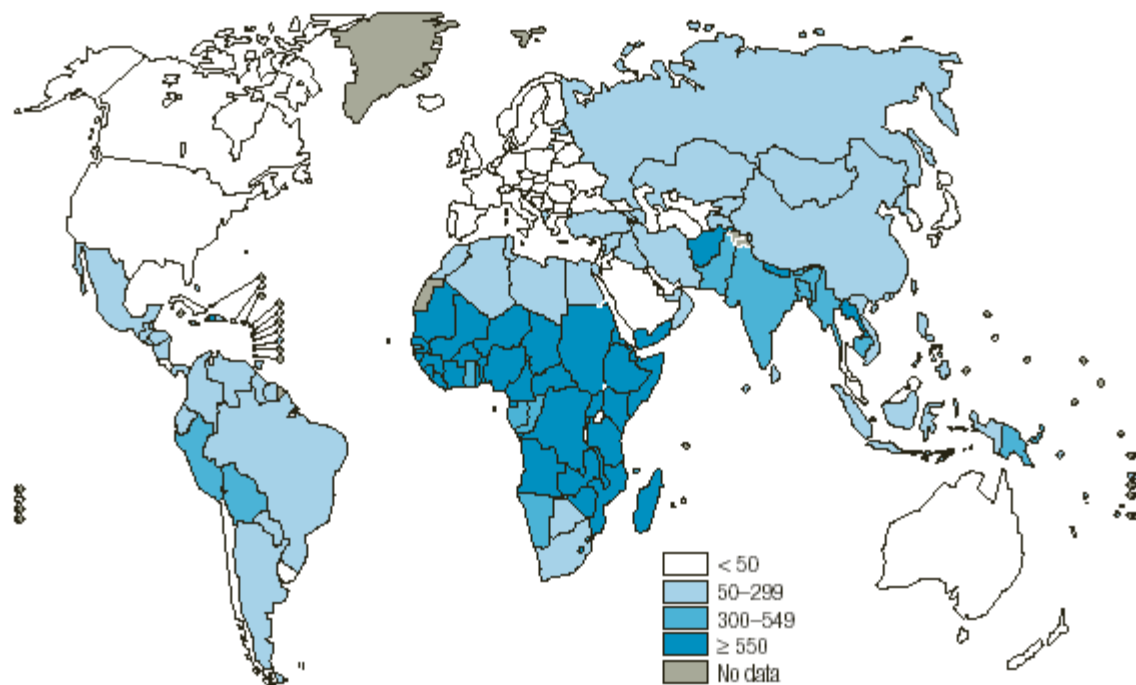
**Malik Goonewardene**

**Faculty of Medicine,  
University of Ruhuna,  
Galle, Sri Lanka**

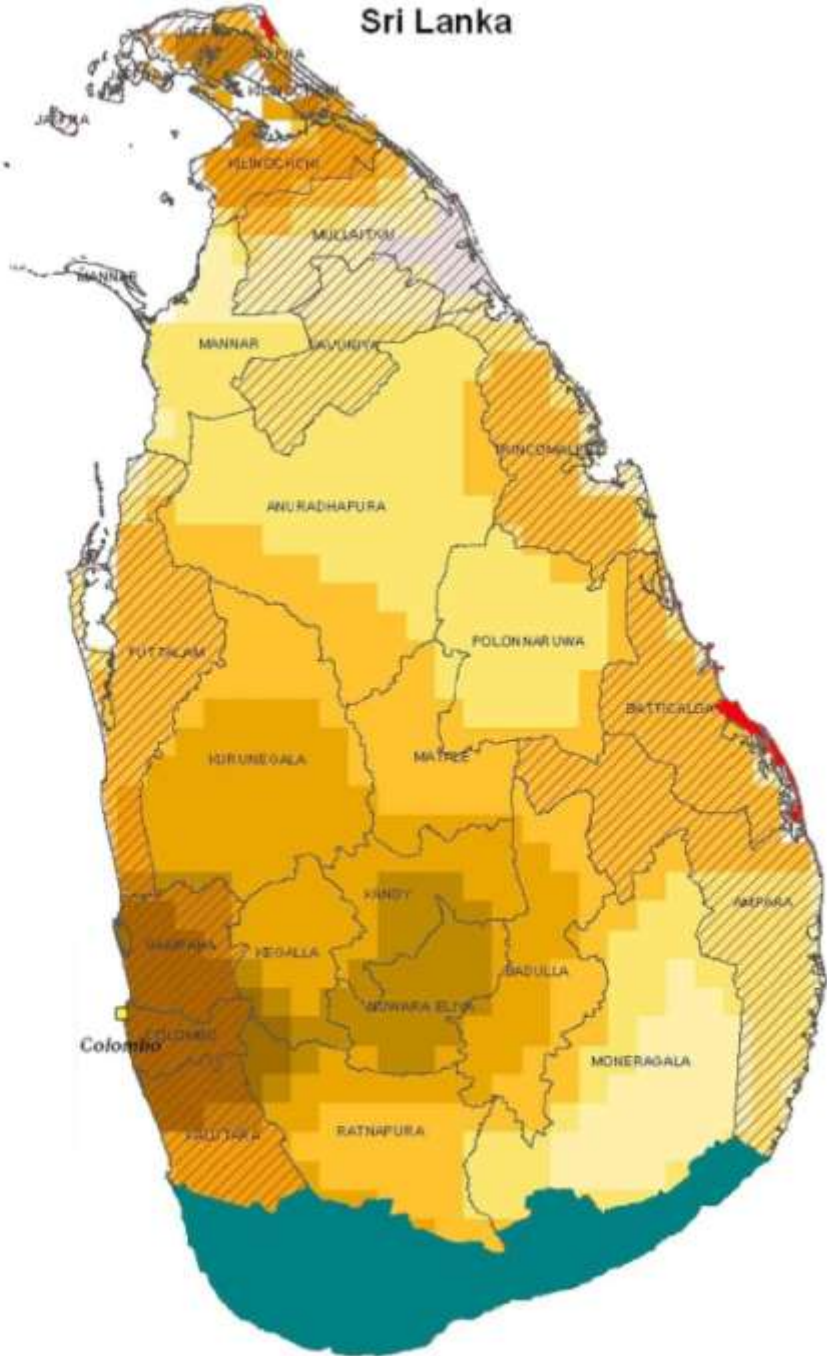
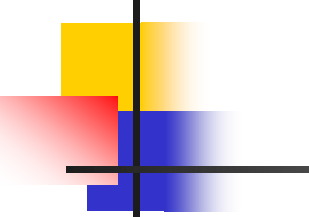
**Training Course in Reproductive Health Research  
WHO 2008  
WHO-Sri Lanka Scholarship**



Maternal mortality ratio per 100 000 live births in 2000



# Sri Lanka





# ***Sri Lanka - 2003***

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- Area 65,525 sq km
- Population 19.2 million
- Life Expectancy 71 (M) 76 (F)
- Literacy Rate 92 (M) 90 (F)
- Per Capita Income USD 1355 pa
- National Poverty (< 1 USD/day) 23%



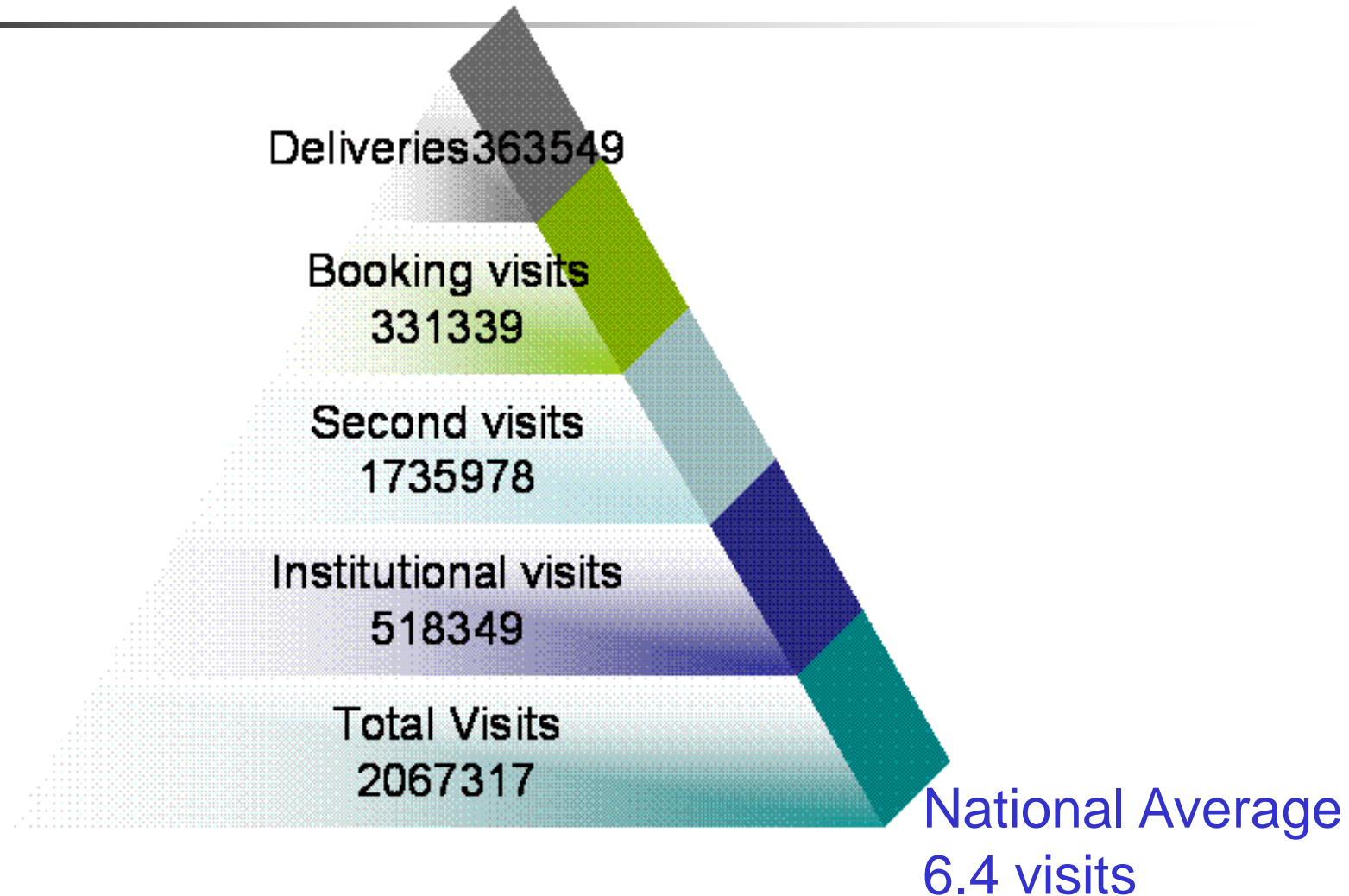
# ***Sri Lanka - 2003***

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- Maternal & Child Health Cover 94%
- Hospital Deliveries 98%
- Neonatal Mortality Rate 13%
- Maternal Mortality Ratio 38 /100000 LB
- Infant Mortality Rate 11.2 /1000 LB
- Total Fertility Rate 1.9%
- Contraceptive Prevalence Rate 67%
- Crude Death Rate 5.9/1000 pop
- Annual Population Growth Rate 1.3%

# Antenatal Care

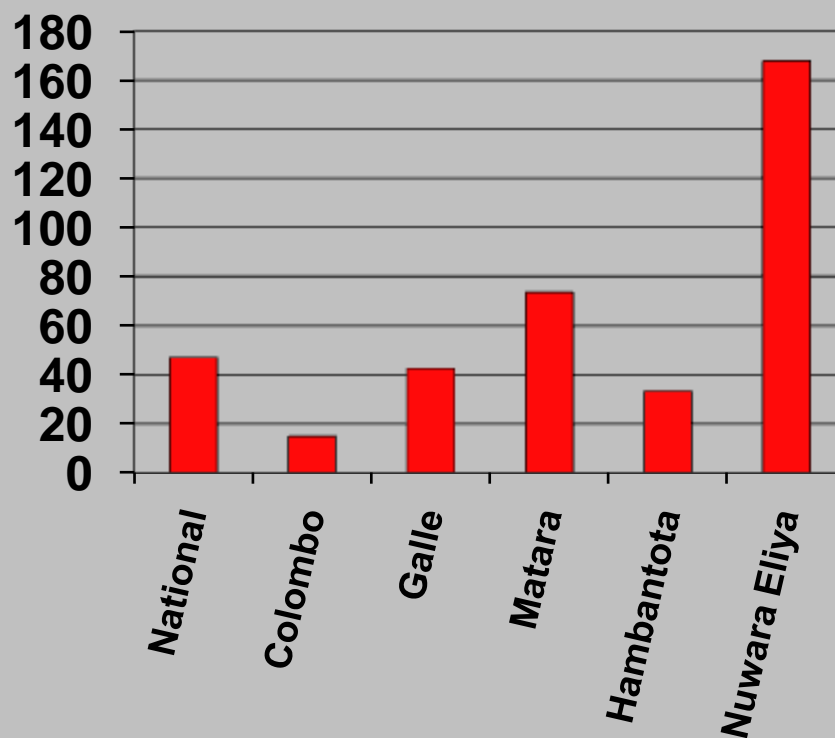
## - Peripheral & institutional



# Maternal Mortality Ratio – South Asia

*(The Report Card 2004, Population Action international)*

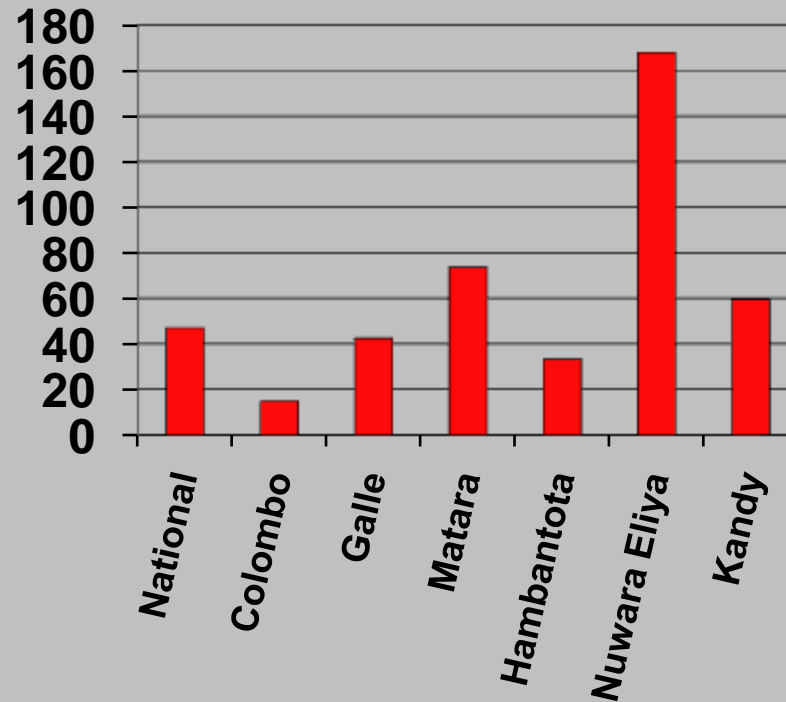
■ MM Ratio per 100,000 LB



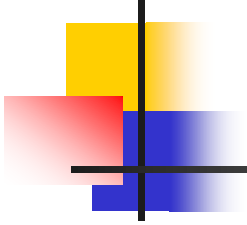
# Maternal Mortality Ratio - Sri Lanka - by district

*(Family Health Bureau, Ministry of Health, Sri Lanka 2001)*

■ MM Ratio per 100,000 LB







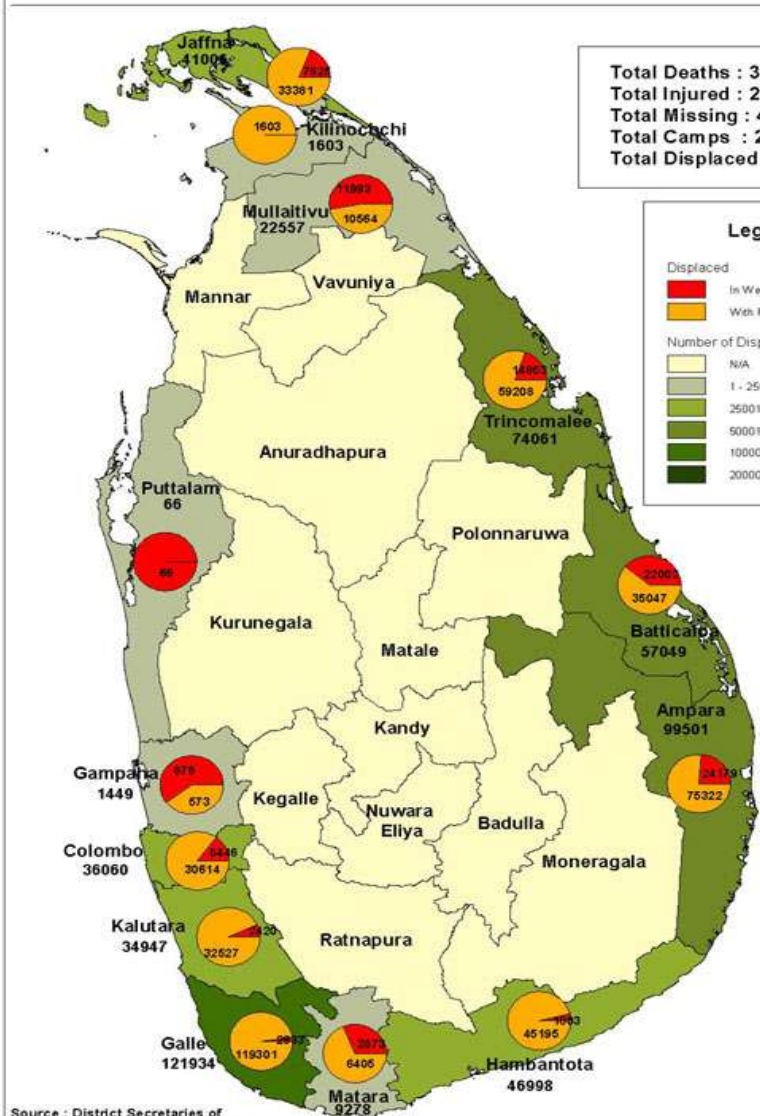
# ***Tsunami***

***26<sup>th</sup> December 2004***

# Displacement Due to Tsunami - 21/02/2005



**Total Deaths : 31,147**  
**Total Injured : 23,059**  
**Total Missing : 4,115**  
**Total Camps : 262**  
**Total Displaced : 547,509**



Source : District Secretaries of the affected Districtselfare

24 February 2005



# ***Due to the Tsunami***

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- > 35000 died in Sri Lanka
- Coastal region of Southern Province (Galle, Matara & H'tota)
  - severely affected
- 3 million (1.2 Mil Women Reprod Age)
- Teaching Hospital Mahamodera Galle damaged & evacuated (450 Obs / Gyn beds)
  - C. Section, LFD, MRP, ERPC, ..Mothers in Labour
- Emergency services provided (with great difficulty) in a near by hospital with no previous Obst / Gyn facilities
  - up to 13 Feb 2005

# ***Entrance – Teaching Hospital***

## ***27<sup>th</sup> Dec 2004***

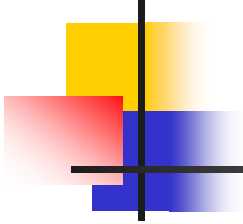




***Blood bank Roof***

## ***Inside of a Prenatal Ward***





## ***Corridor to Operation Theatre***



## ***From 13 Feb. 2005 - up-to-date***

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- Back at Tsunami damaged THMG (50% beds & floor space)
- Project Proposals +++
- Numerous Donations – National & International, Individual & Corporate
- Temporary Facilities:
  - Mobile Field Hospital (Sweden) – 6 Tents
    - post partum & post C. Section
  - Mobile Field Hospital (UK) - 6 Tents
    - prenatal clinic, day assessment, day surgery, student training & evaluation
- Enhanced endoscopic surgery at THMG
- Reduced – Severe congestion & overcrowding of THMG
  - bed occupancy 175%, mean Inward Stay 24hrs- 3D (1/2 - 2004)



# ***Mobile Field Hospital - 1***





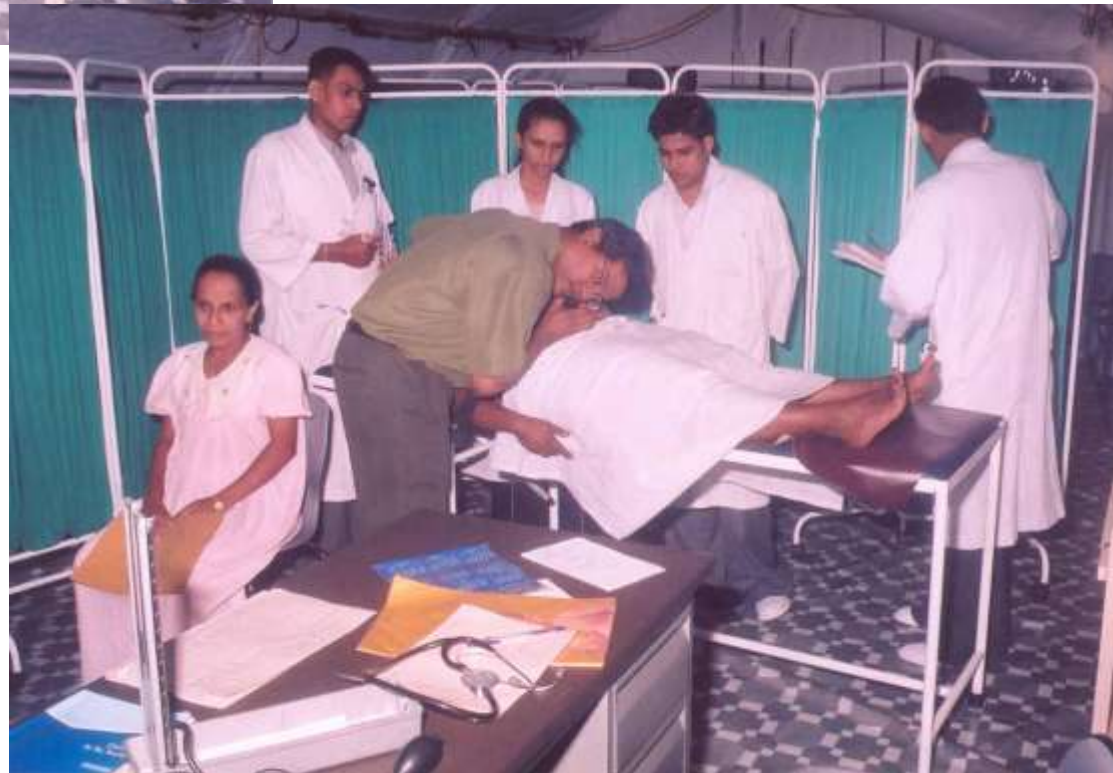


# ***Mobile Field Hospital - 2***





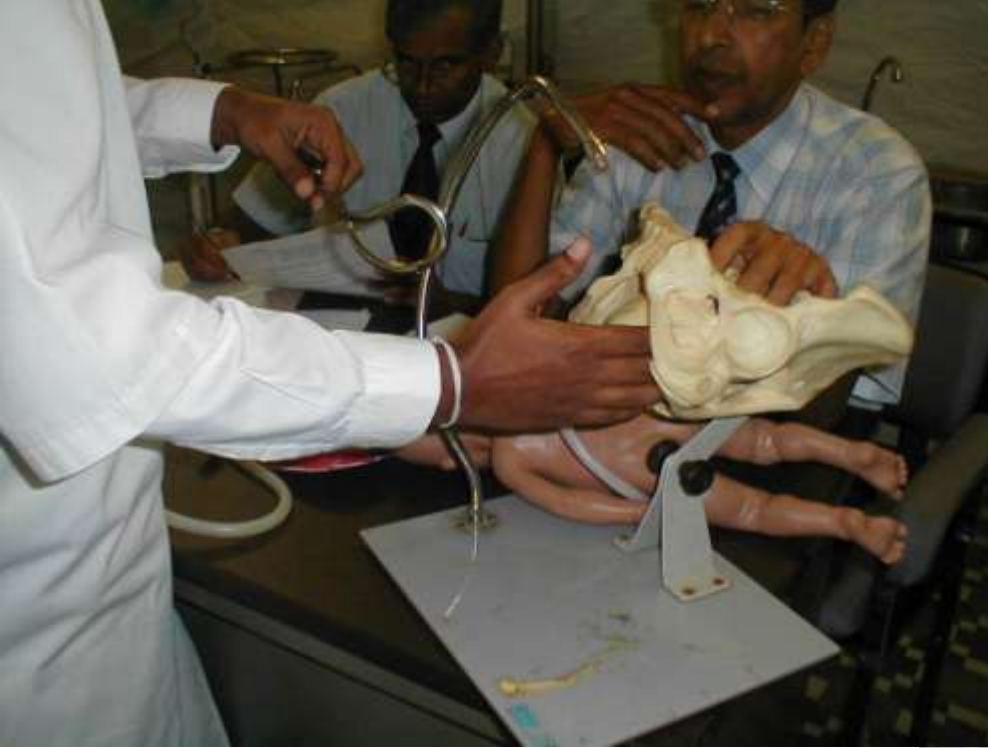
# ***Prenatal Clinic***





# ***Colour Doppler Sonology & Cardiotocography***





# ***Skills Training & Evaluation***





***Trans Vaginal  
Sonology &  
Conscious Outpatient  
Hysteroscopy***



# *Research Methodology Training*





## ***Publications: 2005 – 2008 = 9***

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1. Rameez MF, Goonewardene IM. Nitric oxide donor isosorbide mononitrate for pre-induction cervical ripening at 41 weeks' gestation: A randomized controlled trial. *J Obstet Gynaecol Res.* 2007 Aug;33(4):452-6.
2. Strategies to improve adherence and acceptability of hormonal methods of contraception: RHL commentary (last revised : 15 December 2006 ). The WHO reproductive Health Library No 10, Update Software Ltd, Oxford, 2007.
3. Batcha TM, Goonewardene IM. The fetal acoustic stimulation test: a reliable and cost effective method of antepartum fetal monitoring. *Ceylon Med J.* 2005 Dec;50(4):156-9.
4. Goonewardene IM, Deeyagaha Waduge RP. Adverse effects of teenage pregnancy. *Ceylon Med J.* 2005 Sep;50(3):116-20.
5. Clinical experience, evidence based medicine, and changing trends in Obstetric care. *GMJ* 2005 ; 10(1): 3-6.
6. Goonewardene IM. Couple characteristics and outcome of therapy in vaginismus. *Ceylon Med J.* 2005 Jun;50(2):95.
7. The outcome of preterm labour and preterm prelabour rupture of membranes after oral salbutamol or nifedipine *SLJOG.* 2005; 27: 32-36.
8. Intra umbilical vein oxytocin: A management option for retained placenta. *SLJOG.* 2005; 27: 23-28.
9. Evidence Based Medicine. *SLJOG.* 2005; 27: 20 -22.



## ***Published in Abstract form: 2005 – 2008 = 9***

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**Medico –Legal Implications in Obstetrics : 3rd & 4th Degree Perineal Tears  
Abstract of the Professor S. Arulkumaran Felicitation Scientific Sessions of the SLCOG 2008;48**

**Low Tech Obstetric Interventions in a Tsunami damaged teaching hospital  
Abstracts of the 6th SAFOG Conference 2007: 203**

**Comparative Study of Induction of Labour and its Outcome in a Teaching Hospital  
Abstracts of the 40th scientific sessions of the SLCOG 2007; 35**

**The Effects of Two Different Doses of Vaginal Nitric Oxide Donor Iso sorbide Mononitrate,  
used for Pre Induction Cervical Ripening on the Mother and the Fetus  
Abstracts of the 33rd scientific sessions of the SLCOG 2007; 36**

**Intra umbilical vein injection of oxytocin for retained placentae: comparison of two doses  
Abstracts of the 40th scientific sessions of the SLCOG 2007; 38**

**Induction of labour and its outcome in a teaching hospital  
SLJOG 2006; 28: (sup 1) : 48**

**Aggressive & expectant management of labour  
SLJOG 2006; 28: (sup 1) : 42**

**Fetal Acoustic Stimulation Test for early intrapartum fetal monitoring  
SLJOG 2006; 28: (sup 1) : 41**

**Intraumbilical vein injection of oxytocin for retained placentae: comparison of two doses  
GMJ 2006; 2 (1): 82**





# ***Ongoing Research Projects at THMG***

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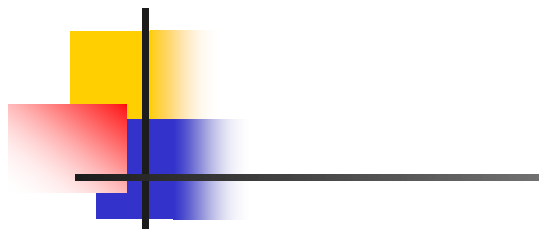
- **Comparative Study of Restricted Episiotomy Vs Routine Episiotomy**
- **Expectant Care Vs Surgical Management in Incomplete Miscarriage**
- **Symphysiofundal height charts customized according to parity and body mass index**
- **Gestational age specific birth weights in singleton male and female babies delivered after normal pregnancies.**



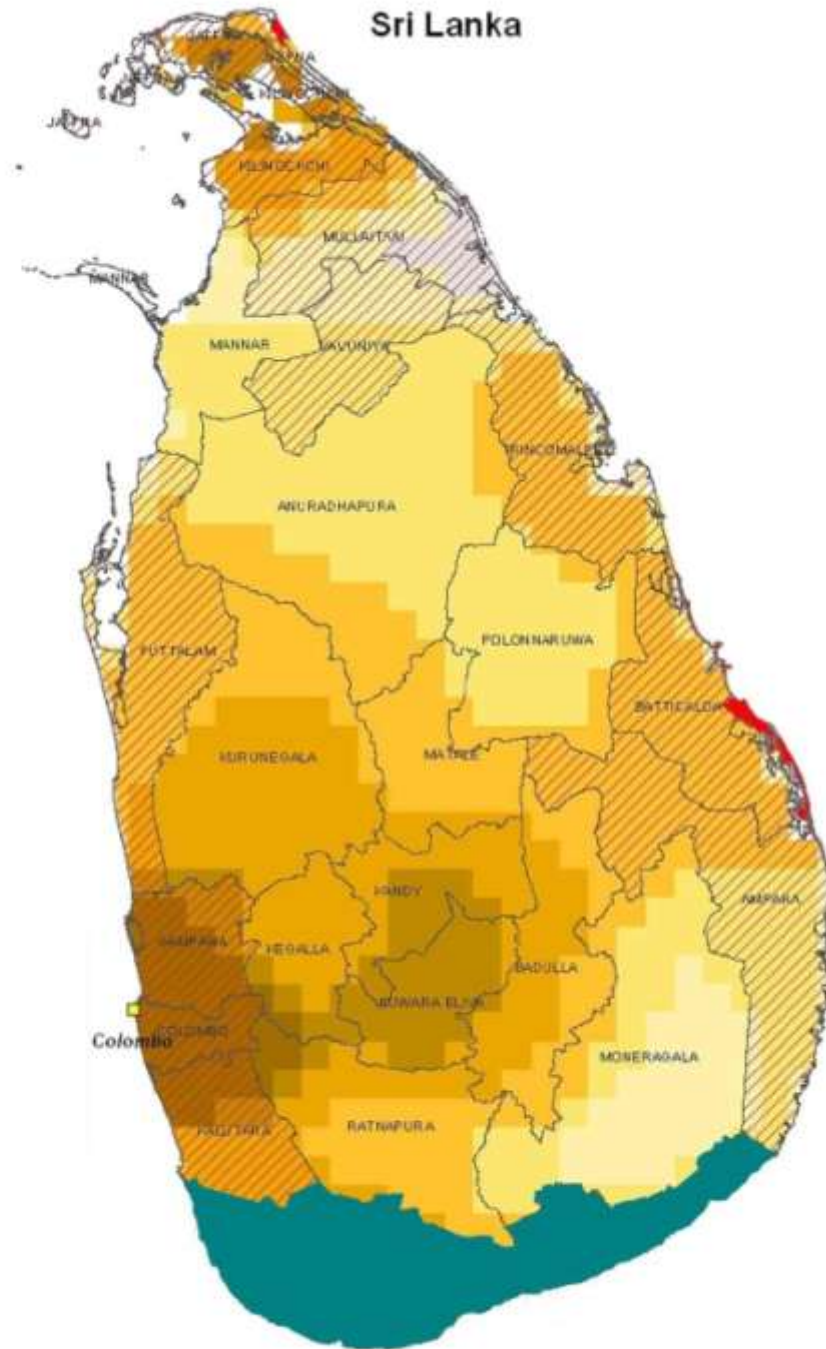
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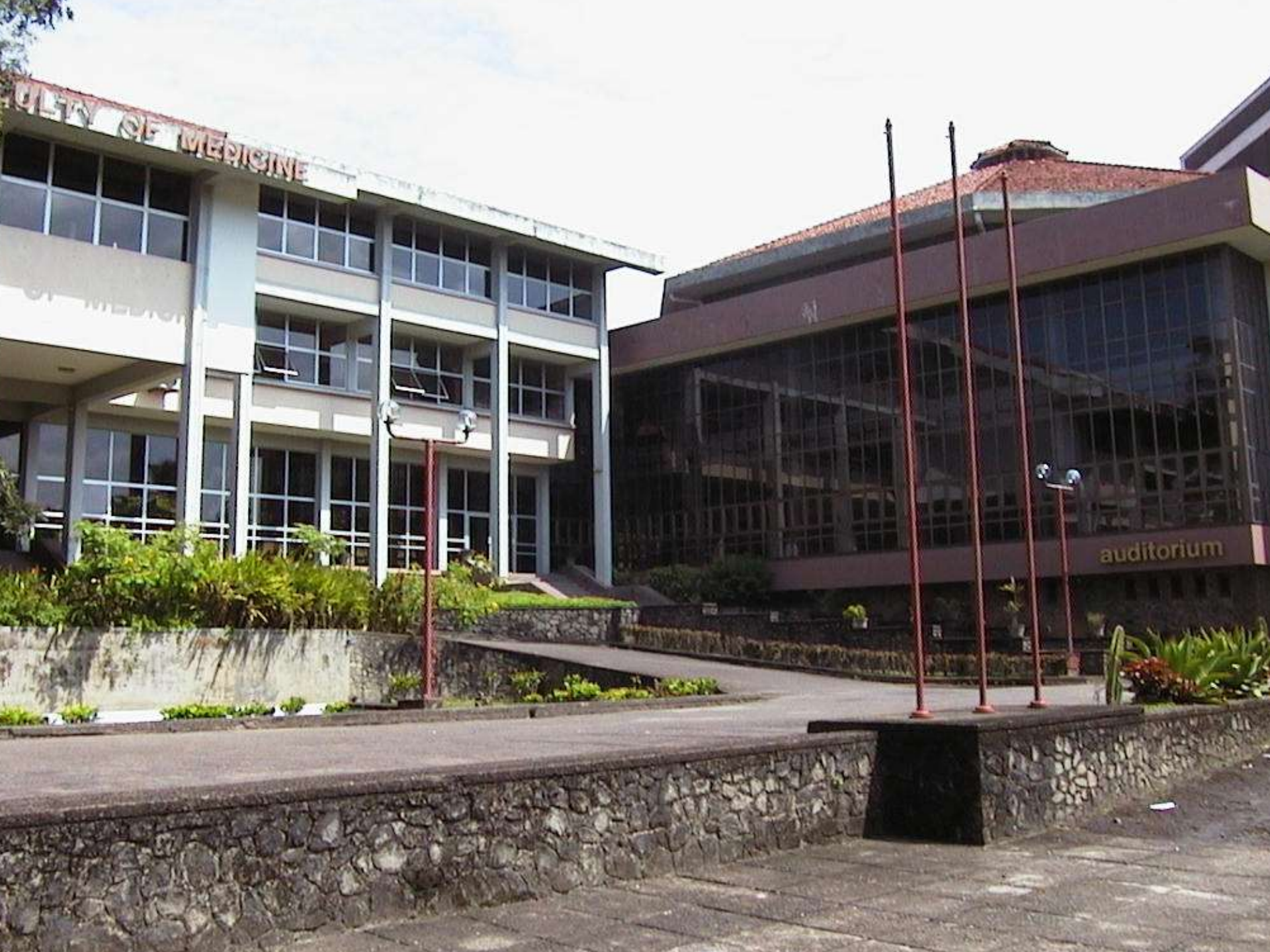
***Adverse effects on  
Maternal & Perinatal  
Outcomes***



Sri Lanka



***Southern  
Province***



FACULTY OF MEDICINE

auditorium



# *Objective*

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To study the impact of the 26<sup>th</sup> December 2004 Indian Ocean Tsunami on maternal and perinatal health care services in the southern province of Sri Lanka and identify any adverse effects.



# ***Specific Objectives***

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- Compare Maternal & Perinatal Health **Services & Resources** in Galle, Matara & H'tota:  
2003 vs 2005 - 2008
- Compare **Utilisation** of Maternal & Perinatal Health Services in Galle, Matara & H'tota:  
2003 vs 2005 - 2006
- Compare **Maternal & Perinatal Mortality & Morbidity** in Galle, Matara & H'tota:  
2003 vs 2005 - 2006



# ***Method***

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- Data re: availability of maternal & perinatal services & resources - **Regional Offices** of G, M & H: 2003 vs 2005-8
- Data re: maternal & perinatal mortality - Regional Offices of G, M & H & **Family Health Bureau**: 2003 vs 2005-6
- Data re: Deaths of Women of Reproductive Age  
**District Secretariats** G, M & H 2003 vs 2005-6
- Data re: availability of maternal & perinatal services & resources, their utilisation, and maternal & perinatal mortality & morbidity **All Hospitals in G,M & H**: 2003 vs 2005-6

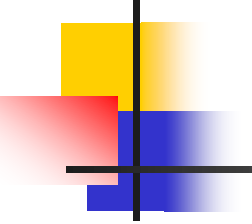


# ***Data to be collected***

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- Number of **Institutions**
  - Type
  - Number of beds
  - Availability of Basic or Comprehensive  
Em.Obst.Care
- Availability of Human **Resources**
  - Different Categories of Staff
- **Utilisation** of ANC & PNC



- 
- 
- No of Live Births
  - Age & Parity of Mothers
  - No of Maternal & Perinatal Deaths
  - Mothers: Duration of Inward Stay
    - No Admitted to HDU / ITU
    - Duration of Stay in HDU / ITU
    - Reason for admission to HDU / ITU
  - Babies : No admitted to the SCBU
    - Duration of Stay in HDU / ITU
    - Reason for admission to HDU / ITU

# ***Data –***

## ***Maternal & Perinatal Deaths***

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- Age & Parity
- Distance from ANC / Hospital & Utilisation of ANC
- Place, Mode of delivery & Babies' details
- Cause of death (Categories + Details)
- Any delays? (1, 2, 3 )
- Preventable?
- Under reporting?



# ***Time Periods of Analysis***

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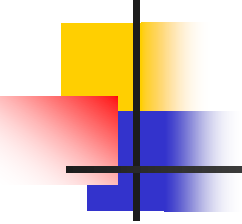
- Pre Tsunami : 2003
- Post Tsunami:
  - Jan - Mar 2005
  - April - June 2005
  - July - Dec 2005
  - 2006 - 2008



# ***Ethical Considerations***

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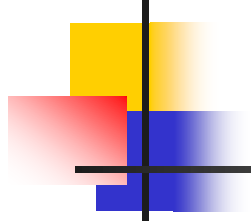
- Data will be entered onto an ongoing computer data base
- Confidentiality will be ensured
- Only grouped data will be presented
- Ethical approval will be obtained from the Ethical Review Committees of
  - Medical Faculty, Galle
  - Ministry of Health, Sri Lanka



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If any adverse outcomes are detected, possible remedial measures will be identified and appropriate measures will be adopted in order to facilitate improvements in the situation.

A Regional Research Methodology Training Center will be established in Galle.



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***Thank You***