DHECARE
Dhulikhel Hospital
Emergency Care Study

A collaborative study:
KUSMS/ Dhulikhel Hospital
and
NTNU Faculty of Medicine
(ISM+ISB)
and
St Olav University Hospital
(Pediatric/Acute/Intensive+SIM)
Established in 1996

Based on the principle of social equity and quality health care

Not for profit, non-governmental, community based hospital
Services

• Inpatient services
• Emergency services
• Outpatient services
• Diagnostic services
• Operative services
• Academic program
• Community outreach program
Since 1996

Every Village has got its HERO!!!
Outreach Programme

Public Health Programmes

Curative services

Community Development Programmes

Research
Curative service

Round the clock service for the community

Laboratory

Doctor’s visit
Health Camps
Public Health Programmes

Women’s Health Programme
School Health Programme

- School Health Club
- Oral Health
- Health screening
- Health education
Improved cooking stove

IN-DOOR AIR POLLUTION FREE VILLAGE
Microfinance Programme

Income generation activities

Social security

Skill based training
Plantation Program
Bridging the gap between two hills
Academic Programme

• Students placement
  – Community diagnosis
  – Public health program
  – Community interventions

• Interns placement
  – Primary health care
  – Public health program
Global Health Students from all around the world

Researches from various master level students from different countries like the Netherlands, Japan, USA, Norway in community

Students from USA under Global Health Programme
Cooperation between Kathmandu University (KU) and Norwegian University of Science and Technology (NTNU) A 20 years experience:

- 1993 onwards – cooperation between the two universities on establishing an Engineering School
- 2002 – general agreement signed between the two universities concerning cooperation within education and research
- 2007 - agreement signed on cooperation in medical education and research
2009: Training of health personnel in a simulator setting

- Resuscitation of the newborn and mothers
- Initial evaluation of the critically ill patient
Stian Otterdal Klokk
Øystein Bakke Larsen
Skjalg Haugsbak Talåsen

Development and Implementation of an Emergency Registry at Dhulikhel Hospital, Nepal.

A pilot Study.

Trondheim, January 2012
DHECARE Study
2013 Dhulikhel Hospital Emergency CARE Study
Why emergency care in this low resource setting?

The paradox:

- Increasing focus on emergency medicine in IC
- **Emergency Medicine: a neglected topic in MLIC**
  - Increasing burden of non-communicable diseases, exacerbations
  - High burden of accidents (traffic) and poisoning
  - The knowledge about the epidemiology and burden of emergency medicine is sparse from MLIC
  - Health delivery systems not set up for emergency medicine
Advances in emergency medicine

• Pre hospital treatment
• Emergency room treatment
  – Triage, organization, level of competence
• Early targeted therapy
  – Sepsis, stroke, MI
• In hospital treatment
  – Disease specific competence early in the chain of treatment
Main finding: Inpatient mortality rate was reduced from 13% to 6%
DHECARE Study
An interventional study to improve emergency care

1: Record morbidity and mortality
Implementation of a patient registry

2: Local intervention
Implementation of training and triage. Organizational interventions

3: a. Post – Intervention data collection
b. Analyses
DHECARE Study

• Primary aim:
  – To assess whether changes in the organization of emergency care, including implementation of triage system and systematic training program for staff can reduce mortality and improve quality of care

• Secondary aims:
  – To describe the epidemiology of emergency cases
  – Study the association of socio-economic and environmental factors with admissions for the main disease categories with focus on the determinants for non-communicable diseases
Phase 1 – September 2013-January 2014

Implementation of a patient registry

- Registration forms in ER
  - Reason for contact, clinical status, time to treatment
- Data extraction from existing discharge books
  - Diagnosis at discharge – ICD-10, length of stay
  - Discharged, DOR, LAMA, Expired
- Telephone interview for 30 days follow-up
  - Mortality, referrals, readmissions, status if alive, SES
Resources

- **International multidisciplinary group**
  - Dr. Koju (DH Hospital director, project board director)
  - Dr. Kari Project co-founder/director
  - Dr. Erik Project co-founder/director
  - Project Manager/phd candidate: Samita Giri MPH
  - Dr. Sanu, ER (Local PI) 30% Dhecare
  - Dr. Sangina, IC
  - DH: 2 medical assistants full-time (funded by St Olav)
  - Experts from St. Olav for the intervention (triage, simulation, management)

- **Funding from St. Olavs Hospital & NTNU**
DHECARE
PROJECT STATUS
October 2014
DHECARE October 2014

- Preintervention registration (Oct2013- Jan 2014)
  - Nearly 4000 hospital-discharged patients included
  - Ward: Half of patients from ER, half from OPD
  - Half of patients from ER were admitted to ward

  - Prolonged preregistration until June 2014 (nearly 9000 patients)
Unselected population

- DH Gate
  - ER
    - Home (2000)
  - OPD
    - Home (2000)
- Admitted Hospital Ward
  - Discharge (4000)
Cases by Wards

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<th>ward_7</th>
<th>Freq.</th>
<th>Percent</th>
<th>Cum.</th>
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<td>ENT</td>
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<td>5.79</td>
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<td>ICU</td>
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<td>8.98</td>
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<td>61.69</td>
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<td>Orthopedic</td>
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<td>13.06</td>
<td>85.15</td>
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<td>Surgery</td>
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<tr>
<td>Total</td>
<td>3,952</td>
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Figure 1: Distribution of disease groups in non-traumatic and non-obstetric patients
May 2014: Focus groups - plans of interventions

• Organization
  – Improve registration systems/record keeping (electronic?)
  – Sorting severity of cases for appropriate level of care/resources
    • INTRODUCING TRIAGE SYSTEM
  – Communication and plans for critical cases
    • Walkie talkie/beeper
    • Acute teams
    Disaster planning (big accidents, epidemics (ebola?))

• Training
  – maternal/neonatal, surgical, medical response teams
Intervensions October 2014

Multidisciplinary team from ntnu/St Olav
2 doctors 2 nurses 1 manager
Simulation centre
Acute Clinic
Pediatric clinic
St Olav manager of emergency responses
DHECARE Spin-offs

- Local competence building: research, project /hospital management and effective medicine (local staff and students)
- NTNU student global health education and interest (9 students affiliated, increasing interest)
- Observational studies based on patient registry
  - NCD
  - Newborn
  - Prepare responses to Vision 2030

Figure 2: Proportion of various NCDs
Miles to go...... Together...
Thank you !!!