Critical Care Medicine in Low Resource Settings: Obstacles and Opportunities

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NEPAL
Nepal

• Federal Democratic Republic of Nepal
• Landlocked sovereign state located in South Asia with 147,181 square kilometers area.

• POPULATION: 30 million ( - 5 million)
• MMR: 231 per 100,000 live births
• Life expectancy: 69 years
• Per capita income: 699 USD

Central Bureau of Statistics (Nepal), 2011 / 2012
World Economic Outlook Database-September 2011, International Monetary Fund.
Lord Buddha
BEFORE 1890

TRADITIONAL MEDICINE

• AYURVEDA:
  – Traced to as early as Vedic period (1500-800 BC)
  – Herbal Resources, Life style modifications
    • Total 1400 practitioners

• NATUROPATHY

• FAITH & SPIRITUAL THERAPIES
Development of Medicine in Nepal

- 1890: Prithvi Bir Hospital
- 1951: Few Mission Hospitals started after the end of autocratic Rana regime
- 1978: Bachelor Course in Medicine at Institute of Medicine, First Medical School
- 1980: T U Teaching Hospital
- 1993: BPKIHS, Dharan (2nd Medical School)
- 1994: Manipal College of Medical Sciences, Pokhara (First Private Medical College)

More Medical Colleges & Institutions

Health Services/Medical Education

• Private sector >>> Governmental
2/3rd Health service, 3/4th Medical education
People have to pay for their healthcare
No Health Insurance System

• Last two decades : 18 Medical, 5 Dental colleges

• Total Hospitals = 145

• Inadequate health facilities and resources
1963: First Medical Journal
History of Intensive Care Service

• First ICU established in 1970 in Bir Hospital Kathmandu (After King Mahendra), 5 bed, mixed.

• Second ICU in 1983 at TU Teaching Hospital, 6 bed, mixed medical surgical, now increased to 11 beds.

• Totally, Now there around 75 ICUs:
  – What is an ICU Bed? Total 550 Beds.
  – Quality and Standards are not measured.
  – Data/Statistics are never published (except for few)

Obstacles:

1. Trained Manpower
   - Intensivists
   - Critical Care Nurse
   - Others:
     • Infectious Disease Specialist
     • Infection Control Team
     • Clinical Pharmacist
     • Physiotherapist
     • Nutritionist
Trained Manpower

- No Intensivists till 2012
- Few Trained Intensivists returned and started working
- No Subspecialty Training program in Critical Care till mid 2013
- DM (Doctorate of Medicine) in Critical Care Medicine started at Institute of Medicine (IOM), Tribhuvan University from October 2013
  - Support and Collaboration from Royal College of Physician and Surgeons of Canada

MEMORANDUM OF UNDERSTANDING

BETWEEN:

Royal College Canada International a non-profit corporation Incorporated under the laws of Canada ("RCCI");

And

Institute of Medicine, Tribhuvan University a non-profit organization Incorporated under the laws of Nepal (the IOM)
Critical Care Nurse

• No academic training and certification
• Very few CCN Training Courses
  – Short term: Few weeks to 3 months
  – TUTH Nursing In Service Education Unit : 3 months ICU CCU Training
  – Training by Team of Doctors
• 2014:
  – Critical Care Nurse Education Program: Royal College of Canada Collaboration – Rapid Access to ICU Services in Nepal (RAISE Nepal Project) – Marilyn White
    • 10 CC Nurse Educators Produced
    • They started training other nurses: 20 per batch
    • First Batch Graduated recently
• MIGRATION OF CC NURSES - ABROAD
Others.....

• Infectious Disease Specialist
• Infection Control Team
• Clinical Pharmacist
• Physiotherapist: with ICU specific training
• Nutritionists
• Clinical Microbiologists:
  – Available but focused in Laboratory
  – Do not see patients
Obstacles:

2. Resources

- Lack of Equipments
  - 11 Beds – 8 Ventilators
  - Inadequate Pumps: Syringe, Infusion, SCD, Feeding
  - Monitors: Not properly functioning
  - Beds – Proper ICU Beds

- NOT ABLE TO BUY vs. NOT A FOCUS OF GOVERNMENT
  - BECAUSE OF INADEQUATE FUNDS FROM GOVERNMENT
  - Once Bought – Maintenance Not Done
    - Once broken, not repaired

- PRIVATE HOSPITALS: Increased Resources
Private Hospitals ICU
Obstacles:

3. Supplies

– Oxygen
  • Oxygen Plant is 30 years old
  • Gives 60% oxygen when on 100%
  • Oxygen Cylinder is connected if high FiO2 is required
  • Oxygen Plant needs a big budget from Government

– Electricity:
  • Load Shedding 8 hours per day
  • In Winter 12-14 hours per day
  • Back up on Generator – Diesel run
  • Fuel Shortage

– Water:
  • Not regularly available, not clean
  • Hand washing – Difficult, Hand Sanitizers are expensive
Obstacles:

4. Consumables
   - Difficult to afford
     • Ventilator Circuit:
       - Costs 30 $, From Reusable to Disposables
     • CVC – 35 – 50 $
     • Pressure Monitoring Transducer Set- 35 – 40 $
     • Closed Suction- 50 $, Open Suction – 5$
   - Hand Sanitizer: $5 - $10
   - Cost: 200 – 250$ per day
   - Higher Antibiotics: 100$ -150$ per day
   - Unavailable:
     • SCD Pump
     • Feeding Bags for Continuous Feeds
     • Nutrition Supplement:
       - We feed food items prepared in our Kitchen
Obstacles

5. Patient Safety and Quality of Care
   – Focus only on ACCESS and Early Treatment
   – No Quality Care Indicators
   – No Concept of Patient Safety and Quality
   – Iatrogenic Complications: Not Published at All
6. Interdepartmental Conflict

- Anesthesiology, Internal Medicine, Pulmonology
- Every department claims Critical Care as its domain – very few are dedicated and committed to work in ICUs
- No full time Intensivist
- Only few Closed ICUs, Only very few Intensivists

Might be solved once there is dedicated full time Intensivist
Obstacles

7. Supervising Authority:
   – Political Fluidity, No Supervising Authority
   – Medical Council, involved in affiliation of medical colleges and accreditation
   – No Organization to take care of Patient Safety and Quality
   – ICU is NOT a priority for government
     • ARI, Diarrheal Disease, Epidemics and now the EARTHQUAKE
Opportunities

• Academic Training Program:
  – Opportunity to learn
  – Organizational skills
  – Academic Training as well as Clinical Services
  – Collaboration with International Organizations

• Learning to work in Resource Limited Settings
Notice Anything?
21/ M Refractory Status Epileptics, STP Infusion for 21 days, VAP, CPR x 2 – LOS 105 days, Now a Management Student

27/ M Acute Biliary Pancreatitis, Severe ARDS, Prone Position, LOS ICU 42 days – Started his own business

67/ M COPD, CAP, Type II RF, Arrested in ED, Hypothermia for 24 hrs, LOS ICU 7 days, Extubated 3 hours back, Mobilizing
Opportunities

• Managing Interdepartmental Politics
  – Conflict Management

• ICUs in Private Hospital and Private Medical College
  – Level of Care / Service is Improving
  – Doctors Quitting Public Academic Institutions and Moving to Private Institutions

• Non Profit Organizations
Nepal Critical Care Development Foundation (NCCDF)

www.nccdfnepal.org
www.facebook.com/nccdf
NCCDF

• Non Governmental Organization – Charitable

• ICU Care Box:
  – Containing supplies of emergency materials in ICU
  – Chest tubes, airway device, Lines etc.
  – So that no time is wasted in emergency management
  – Became very handy after the Major Earthquake
Sepsis Campaign

- World Sepsis Day Rally
Awareness: Hand Hygiene Posters

Wash your Hands!

1. BEFORE TOUCHING A PATIENT
2. BEFORE CLEAN/ASEPTIC PROCEDURE
3. AFTER BODY FLUID EXPOSURE RISK
4. AFTER TOUCHING A PATIENT
5. AFTER TOUCHING PATIENT SURROUNDINGS

Your 5 Moments for Hand Hygiene

1
2
3
4
5

WHEN?
Clean your hands before touching a patient when approaching him/her.

WHY?
To protect the patient against harmful germs carried on your hands.

WHEN?
Clean your hands immediately before performing a clean/aseptic procedure.

WHY?
To protect the patient against harmful germs, including the patient’s own, from entering his/her body.

WHEN?
Clean your hands immediately after an exposure risk to body fluids (and after glove removal).

WHY?
To protect yourself and the healthcare environment from harmful patient germs.

WHEN?
Clean your hands after touching a patient and her/his immediate surroundings, when leaving the patient’s side.

WHY?
To protect yourself and the healthcare environment from harmful patient germs.

WHEN?
Clean your hands after touching any object or furniture in the patient’s immediate surroundings.

Nepal Critical Care Development Foundation
Maharajgunj, Kathmandu, Ph. 01-4721189
www.nccdfnepal.org
Hand Hygiene Survey in Various Hospitals
Teaching Infection Control Practices
We Save Lives !!!
Message from the President, WFSICCM

As I write this message our colleagues in the Korean Society of Critical Care Medicine are making their final arrangements to host the 12th World Congress in Seoul next month. The World Federation Executive Committee and Council have been working very closely with the Local Organising Committee and I can confidently predict this will be a great World Congress. We already owe a debt of gratitude to our Korean friends for their comprehensive and efficient organisation. The time is almost here for us all to play our part by participating in this landmark event from August 29th to September 1st.

I am aware that the final preparations for the World Congress have been partly overshadowed by the recent MERS-CoV outbreak in Korea. Based on frequent inputs from local experts and our own monitoring we are very hopeful that the outbreak will be under control. I am pleased to report that registrations continue to progress very well and I hope that delegates will not be discouraged from travelling to Seoul in August. In reality, the MERS-CoV provides an opportunity for us to discuss our response to contagious diseases around the world and to learn how we can be better prepared in the future. We will certainly learn from our Korean colleagues and compare their experience with others. One of the tasks of the World Federation is to coordinate such activities. This is an important reminder that disease does not respect international boundaries. Undoubtedly there will be other pandemics and natural disasters that require a coordinated response from us. As a timely example, the World Federation was very pleased to assist in responding to the earthquake in Nepal. In liaison with our colleagues in the Nepalese Society of Critical Care Medicine, we contributed to a “Care Box Appeal” to provide medical supplies and equipment.
Donation from WFSICCM for Disaster Relief ICU Care Boxes
Nepalese Society of Critical Care Medicine
www.nsccm.org

- Member of WFSICCM - Recently
- 78 Members
- Intensivists, Physicians, Anesthesiologists
- Professional Society,
- Organizing CME, Conferences
- Not involved in Academic Training : University Based System
Nepalese Society of Critical Care Medicine
www.nsccm.org

• Regular Workshops:
  – BASIC
    • Basic Assessment and Support in Intensive Care
    • First Workshop in November
    • Planning for Next – Disaster
  – Acute Care Ultrasound
    • One Day Workshop: FAST, Cardiac, Lines, Lung, RUSH
    • Trained around 70 participants
  – ENLS
  – Mechanical Ventilation
    • One Day Workshop
    • Basics of Mechanical Ventilation
    • For Doctors and Nurses
Nepalese Society of Critical Care Medicine
First National Conference
First Conference of ASAARCCCS
Acknowledgements

Prof Moda Nath Marhatta
Founder President, Nepalese Society of Critical Care Medicine

Prof Roshana Amatya
Program Coordinator, DM CCM Program

Prof Redouane Bouali
Project Director, Royal College of Physicians and Surgeons of Canada
Tribhuvan University Teaching Hospital, IOM

Thank you

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