SUMMARY OF TRIP 1 FEBRUARY 4-24, 2015

TRAINER OF TRAINERS IN NEONATAL RESUSCITATION

PLACE: COLLEGE OF MEDICINE AND HEALTH SCIENCES UNIVERSITY OF GONDAR, GONDAR ETHIOPIA

OUTCOME: A team of 5 American trainers (Patricia Bromberger MD, neonatologist; Karin Davies MD, pediatrician; Elisa Imonti, neonatal nurse; Emilie Jean, respiratory therapist; Fary Moini, Rotarian and logistics coordinator) spent 2 weeks at the University of Gondar College of Medicine and Health Sciences.

Rotary VTT team

During that period we trained 17 health care professionals (4 pediatricians, 1 general practitioner, 3 obstetricians, 4 nurse midwives and 5 nurses) involved in the care of babies in the delivery room in a 4 day instructor course to become Neonatal Resuscitation Program (NRP) instructors.

University of Gondar NRP Instructors

We then mentored each group of 4 instructors while they taught their first NRP provider course, training an additional 67 providers. In all, 84 health care professionals were trained as NRP providers (16 pediatricians, 2 general practitioners, 23 obstetricians, 20 midwives and 23 nurses). We provided all training materials for the course; provided materials to be used for continuing NRP training programs; and provided medical supplies to be used for implementation of the resuscitation practice in the delivery room at the University of Gondar Hospital.

First NRP provider class taught by the University of Gondar NRP instructors

BACKGROUND: The College of Medicine and Health Sciences is part of the larger institution of the University of Gondar. The College of Medicine and Health Sciences is responsible for the pre-professional and post-professional training of physicians, nurses and nurse midwives. In addition, the University of Gondar Hospital serves as a referral hospital for a population of 6 million people living in the surrounding area. In the past years, the number of students and patients has grown enormously, while the number of trained faculty has grown much more slowly. The need to provide training for instructors responsible for the training of health care provider students has become a critical issue in the quality of education.

METHODOLOGY: The NRP training program encompasses a number of educational methods including lecture, demonstration, skills practice and simulation of clinical situations through the use of scenarios. In addition, behavioral skills such as organization of equipment, team work and interpersonal communication are emphasized and practiced.

Skills tr

Lecture with demonstration

Emphasis on teamwork

Administering clinical scenarios

CERTIFICATION PROCESS: All provider students took a knowledge pretest and a skills pretest. At the end of the course they passed a written post test, a skills post test where they demonstrated the basic and advanced resuscitation skills (including initial steps, bag and mask ventilation, chest compressions, intubation and drug administration) and the passed an integrated skills station where all skills were placed in a real-time clinical scenario. Every student demonstrated a substantial improvement in theoretical knowledge and, most importantly, practical skills.

BENEFITS OF THE PROGRAM:

1. Our partners at the College of Medicine and Health Sciences, specifically Dr Zemene, Head of the School of Medicine and Clinical Director; Dr Genet, Chief of Obstetrics and Gynecology; and Dr Mahlet, Chief of the Department of Pediatrics did a magnificent job of selecting an excellent multi-disciplinary team of instructor candidates and making sure that each provider class was full. This allowed us to have the maximum effectiveness in training while we were in Gondar. They all expressed satisfaction with the program and commitment to continuing the training program.
2. Our Gondar partners expressed the desire to train all health care professionals caring for babies through this program in order to upgrade and standardize the neonatal resuscitation care at

their institution. This makes it very likely that the University of Gondar NRP training program will continue to hold more NRP provider classes going forward.

3. All the students, both instructor and provider students, were very enthusiastic about the training program. The provider course was an intensive 2 day program which lasted 8 hours/day. They all attended both days and completed all pre and post testing. For the 4th provider class, 10 extra students showed up unexpectedly because of the "word-of-mouth" enthusiasm for the training.
4. In particular, all students expressed satisfaction with the hands-on skills practice. In the current educational system, theoretical knowledge is given through lecture. The hands-on skills practice with simulation material is not common.
5. The health care providers clearly had a previously acquired base-line knowledge in neonatal resuscitation. However, their hands-on skills were quite poor initially. During the training, all showed significant improvement. We also introduced advanced skills (such as intubation and drug administration) which they were able to master well.
6. The classes were intentionally made to be multi-disciplinary involving physicians, midwives and nurses. We emphasized the teamwork needed for resuscitation. The students, particularly the pediatricians and the obstetricians, said that this was an important opportunity for them to get to know one another better and to work together cooperatively. In addition, nurses are often not included in a training program alongside doctors. We emphasized the role of assistants in many of the skills and clinical scenarios.
7. These health care professionals had not been exposed to the concepts of clear communication. We practiced "close-loop communication" for drug ordering and "SBARR" for information and order transfer during the clinical scenarios. Another concept which was new was the idea of "debriefing" after a resuscitation as a methodology for improving outcomes and discussing methods for improving care, whether it is communication or equipment issues.
8. Among the 17 instructors we identified 5 lead instructors, one of whom who should lead every training program, as well as 4 assistant instructors who will need further experience. All the instructors were very good at lecturing. They practiced and learned the use of clinical scenarios to simulate real-life situations. They all were enthusiastic about teaching future classes.

CHALLENGES TO IMPLEMENTATION

1. There are many systems issues in the current practice at the University of Gondar Hospital which will make translation of this training into actual practice difficult.
    a. Availability of equipment: Certain crucial supplies and equipment are currently unreliably present in the delivery room and the nursery (notably suction machines and oxygen). We recommend an oxygen concentrator and a suction machine dedicated to the neonatal resuscitation room in the labor ward and also in the operating room immediately accessible for neonatal resuscitation (not to be shared with the mother who may need this equipment simultaneously).
    b. Resupply and maintenance of neonatal resuscitation equipment: We supplied 4 emergency boxes for use on the labor ward, OR and NICU which contained all necessary supplies for resuscitation. We also supplied "implementation supplies" to maintain this equipment. Some pieces of equipment (such as laryngoscope blades and umbilical catheterization supplies) will need sterile processing and restocking after use. A system

for checking, restocking and maintaining equipment is needed. Dr. Genet reported that such arrangements are being planned but there will need to be constant oversight and enforcement to be sure resuscitation equipment is always available.

   c. A system of communication among providers (obstetricians, midwives and pediatricians) needs to be developed so that a team can assemble quickly and efficiently if an advanced resuscitation is anticipated. Currently there is no specific organization for a "resuscitation team". One idea was to provide an obstetrician, nurse midwife and pediatrician on shift with "walkie-talkies" and that they be designated to be available for immediate response if an advanced resuscitation is needed.

2. Maintenance and organization of the training equipment and supplies
   a. There are 4 intubatable manikins, two neonatal airway trainers and 7 neonatalies which are currently available and necessary for the NRP training program. All are equipped with all supplies necessary for hands-on skills and scenario training. These supplies will need to maintained and organized after each class. Having one person dedicated to their maintenance will allow them to last longer.

FUTURE PLANS

1. We hope to use the new teleconferencing center to hold periodic video conferencing with our NRP instructors to help them troubleshoot problems and answer questions. Other ideas were to hold periodic case conference discussions, particularly pertaining to neonatal resuscitation, which would be available to all newly trained NRP providers.
2. We hope to finalize a website which will contain not only educational materials about neonatal resuscitation but to document the training program at the University of Gondar. We hope to upload a video about this training course onto You Tube.
3. We will create a group email list of NRP instructors and NRP providers to provide new updates on NRP as well as share the ongoing communications from the AAP.
4. We will return in October 2015 to help develop a Post Resuscitation Care "trainer of trainers program" using the same methodology. We have discussed the lesson content with the pediatricians at the University of Gondar hospital. It will focus on the 4 main causes of morbidity and mortality: care of the premature infant, prevention of neonatal infection, jaundice, and care of the asphyxiated infant. The primary focus will be establishing care protocols and training pediatricians, general practitioners, and nurses.


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