



OBSERVATIONS AND RECOMMENDATIONS REGARDING THE NEONATAL INTENSIVE CARE UNIT AT RAFIDIA HOSPITAL AND EVALUATION OF THE PALESTINE MEDICAL COMPLEX NEONATAL INTENSIVE CARE UNIT

Palestinian Health Sector Reform and Development Project (Flagship Project)

SHORT-TERM TECHNICAL ASSISTANCE REPORT (FINAL)

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The Flagship Project

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ACRONYMS

A/C - Assist Control Mode

ALAIC - The American Lung Association Of Inland Counties

CRT- Credtialed Respiratory Therapist

ECMO - Extra Corpoeral Membrane Oxygenation

ER - Emergency Room

I:E - Inspiratory To Expiratory Ratio

ICUs - Intensive Care Units

IT - Inspiratory Time

JCI - Joint Comission International

LoE - Level Of Effort

MoH - Ministry Of Health

NA - Not Available

NRP - Neonatal Resuscitation Program

OJT -On The Job Training

PMC - Palestine Medical Complex

RRT - Registered Respiratory Therapist

RT - Respiratory Therapist

SBAR - Situation, Background, Assessment, Recommendation

STTA - Short-Term Technical Assistance

USAID - United States Agency for International Development

ABSTRACT

The consultant is a Respiratory Therapist Lead Supervisor and Relief Children's Hospital House Supervisor at Loma Linda University Children's Hospital and a Clinical Instructor for Cardiopulmonary Sciences at Loma Linda University School of Allied Health Professions. He consulted for the Palestinian Health Sector Reform and Development Project (Flagship Project) in Ramallah from July 4 – 24, 2010 as part of a NICU consultant team comprised also of a neonatologist and clinical nurse educator.

The consultant worked at the Rafidia Hospital (RH) in Nablus and the Palestine Medical Complex (PMC) in Ramallah providing teaching and mentoring to physicians and nurses regarding ventilator management for the neonatal patient population. Respiratory teaching materials and some books were distributed to both RH and the PMC focusing on the Fundamentals of Respiratory Care, Manual of Neonatal Mechanical Ventilation, Perinatal-Pediatric Respiratory Diseases, and Neonatal Resuscitation Program. Several smaller neonate- and pediatric-appropriate laryngoscopes and blades were also provided as part of this consultancy so that these critical resources would be available in the NICU.

Respiratory Therapy is largely unknown in the West Bank, as in many other areas of the world. In these settings this critical service is handled by overburdened nurses and physicians who may lack in-depth, specific training in respiratory therapy, particularly in pediatrics and neonatology. Given that this service does not yet exist in the West Bank, the consultant detected widespread interest amongst physicians and nurses to learn more about this specialty. They know from first-hand experience the level of support necessary to care for babies and neonates and there is a strong desire to improve the quality of support, particularly ventilator support, to improve patient outcomes.

The development of Respiratory Therapy as a profession is a long-term process. In the short-term, selected nurses and/or physicians could be sent to programs abroad for training. More immediately, it might be possible to provide limited on-site training from future clinical respiratory consultants.

SUMMARY OF RECOMMENDATIONS

Site-specific recommendations are provided in the relevant sections of the report. The recommendations below are more strategic in focus and emphasize possible actions regarding establishing Respiratory Therapy as a discipline in the MoH and West Bank.

Recommendations:

1. That in Flagship Project Year 3, consideration be given to utilizing certified respiratory therapy consultants for longer-term consultancies (4-6 weeks) focusing on educating physicians and nurses in basic respiratory care theory and concepts and ventilator management.
2. That consideration be given by the MoH to hiring graduates of a Respiratory Care certificate program in Ramallah.
3. To establish Respiratory Therapy in the area, training programs will be needed. Loma Linda University operates a program in Saudi Arabia. Further information about other international Respiratory Therapy educational programs is available from the International Council for Respiratory Care at [HTTP://WWW.IRCCOUNCIL.ORG/NEWSITE/INDEX.CFM](http://www.irccouncil.org/newsite/index.cfm). See further information in the attachments in Appendix E.
4. That the MoH initiate discussions with their health education counterparts to assist in the development of a Respiratory Care program. The need for these services in the treatment of ICU patients is well-documented. Having the MoH and others promote this discipline will help ensure that it emerges as a legitimate and professional service at MoH hospitals. Future respiratory therapy program graduates should be encouraged by the MoH and hospital leadership to interact and participate in physician rounds as well as communicate with physicians and nurses as they seek to become an integral part of a higher level of care sought by the Flagship Project and those supporting reform through MoH hospitals.

Patient care at MoH hospitals could greatly benefit from local staff learning up to date Respiratory Therapy techniques and strategies for various disease entities but investment in human resources in this discipline is required.

To develop a pool of qualified and well-trained Respiratory Therapists (RT), consideration should be given to developing an accredited School of Respiratory Care in the West Bank as the needs for this discipline and clinical expertise will increase over time. As the quantity of RTs increases, not only will their increase in numbers improve patient care for the critically ill, but the MoH clinical workforce will be impacted in a positive manner. An increase in RTs could help reduce the workload on nursing staff and assist in expediting critical lab tests like blood gases that are so important in NICU and ICU care.

This consultant can be available if desired to continue communicating with staff at RH and the PMC as well as the Flagship Project and the MoH by e-mail or conference call to answer questions regarding respiratory equipment (ventilators) and other patient care techniques in this critical area of ICU care.

SECTION I: INTRODUCTION

The Flagship Project is a five-year initiative funded by the U.S. Agency for International Development (USAID), designed and implemented in close collaboration with the Palestinian Ministry of Health (MoH). The Project's main objective is to support the MoH, selected non-governmental organizations, and selected educational and professional institutions in strengthening their institutional capacities and performance to support a functional and democratic Palestinian health sector able to meet its priority public health needs. The Project works to achieve this goal through three components: (1) supporting health sector reform and management, (2) strengthening clinical and community-based health, and (3) supporting procurement of health and humanitarian assistance commodities.

This consultant was the first Respiratory Therapist to provide STTA assistance for the Flagship Project. The consultant evaluated the Neonatal Intensive Care Unit (NICU) practices at Rafidia Hospital (RH) in Nablus and the Palestine Medical Complex (PMC) in Ramallah focusing on the activities of physicians and nurses related to respiratory and ventilator management and care of critically ill patients. Emphasis was placed on coaching clinical staff in weaning patients from a ventilator and extubation criteria, and helping to develop recommendations for the cleaning and care of respiratory equipment.

The consultant presented lectures including a Grand Rounds on "What Is A Respiratory Therapist", and a number of lectures for staff and bedside nurses on mechanical ventilation ("What Do the Knobs Do?") The consultancy focused on improving physician and bedside nurse's skills in managing ventilated patients, including extubation outcomes to decrease complications and the length of hospital stay.

Another objective of this consultancy was the modeling of professional behavior and the interaction between other clinical consultants. The NICU consultants functioned as a team and this approach is critical to see implemented on a broader scale at MoH hospitals. The consultant, Neonatologist, and nurse educator focused on teaching, emulating, and modeling multidisciplinary communication and collaboration—all to the benefit of the critically ill patient. The team provided multiple presentations, including those focused on the importance of handwashing, communication, and teamwork. Other themes emerged throughout interactions together including finding ways to humidify an artificial airway without a heated wire ventilator circuit with the use of sterile or distilled water.

This report contributes to Flagship Project Component 2, Objective 2.1: *Improving the Quality of Essential Health Services for Palestinians*. This consultancy also contributed to the MoH IDP module number 1, *Create a Center of Excellence at the Palestine Medical Complex*; and module number 12, *Improve the Quality of Clinical Services in the Palestinian MoH Hospital System*.

SECTION II: ACTIVITIES CONDUCTED

Rafidia Hospital, Nablus

The consultant worked at Rafidia Hospital (RH) 4-5 hours daily on average. The time available to spend at the hospital each day was impacted by transportation and logistical arrangements between Ramallah and Nablus.

The consultant provided the following presentations to physicians and nurses:

1. "What is a Respiratory Therapist" for Grand rounds
2. "Review of Neonatal Resuscitation of a Patient with an Omphalocele and Congenital Heart Defect"
3. "Neonatal Resuscitation"

The following presentations were prepared and an electronic copy provided to Rafidia Hospital and the Palestinian Medical Complex for future reference and education:

1. "The Galileo Ventilator"
2. "Changing a Fisher & Paykel Heater to the Non Heated Circuit Mode"
3. "Mechanical Ventilation of the Neonate"
4. "SiPAP- What is it and How to Set it Up"
5. "How to use the Respironics BiPAP AVAPS"
6. "Blood Gas Results and Ventilator Changes"
7. "NICU RN ABCs of Blood Gases"
8. "APGAR Scoring"
9. "Respiratory Technical Procedures"
10. Fischer & Paykel MR 850 Heater User Manual

Ramallah General Hospital & the Palestine Medical Complex (PMC), Ramallah

The consultant presented the following lectures:

1. "Mechanical Ventilation of the Neonate Part I & 2"
2. "SiPAP- What is it and How to Set it Up"
3. "SiPAP Setup Practicum in the NICU"
4. "Neonatal Resuscitation"

The consultant also provided clinical consultation, instruction and coaching at the bedside. An example of this occurred when Dr. Berakap, Senior Attending Pediatrician, requested a consultation on a patient who developed respiratory distress due to pneumonia and a collapsed lung from retained secretions. A breathing tube was successfully placed in the patient airway. The consultant reviewed the patient Chest X-rays with clinical staff and made suggestions for ventilator changes. After the ventilator was adjusted the patient settings were able to be decreased to a minimal level. This interaction was typical of the activities of this consultancy. The management of critically ill patients is difficult and benefits from having proper equipment and supplies, and by consensus of several professionals working in a collaborative manner.

The consultant provided following resource materials for reference and training to Meiram Albaseer, MD; Lami Kort, MD; Dr. Berakap; and Flora Barghouti-Taher, MD:

1. Powerpoint on the Galileo Ventilator
2. Changing a Fisher & Paykel heater to the non heated circuit mode
3. Mechanical Ventilation of the Neonate
4. SiPAP- What is it and How to set it up
5. Blood Gas results and Ventilator Changes
6. NICU RN ABCs of Blood Gases
7. Mechanical Ventilation of the Neonate Part 1 & 2
8. SiPAP- What is it and How to set it up
9. SiPAP setup practicum in the NICU
10. Neonatal Resuscitation
11. LLUMC NICU Delivery Room Cases
12. Asthma Guidelines
13. APGAR Scoring
14. Respiratory Technical Procedures
15. Fischer & Paykel MR 850 heater User Manual

Section III: Findings, Challenges, Recommendations, and Next Steps

A. Rafidia Hospital

Findings:

Rafidia Hospital (RH) is primarily a surgical hospital facility within the MoH system, but it also has obstetrics and pediatrics services including a 30 bed NICU for the treatment and care of neonates. The clinical staff was receptive to the in-service teaching, coaching, and bedside learning that was conducted. All of the physicians and nurses demonstrated interest in learning more about respiratory care and the management of ventilated patients and to improve the care of the patients in the NICU at this facility.

There are several observations that are of interest as the MoH and hospital leadership work to improve the NICU at Rafidia Hospital.

1. A behavior that was observed that provides an opportunity to improve patient safety is the response by clinical staff to medical equipment alarms. It appeared that equipment alarms were so frequent that the staff seemed at times immune to responding. A potential solution is to teach staff to adjust alarm settings within proper parameters for safety while also minimizing unnecessary alarms. The consultant demonstrated how to adjust settings, and this is an area that will benefit from follow up
2. Chlorine tablets are currently being used to clean and sterilize equipment. This consultant believes that chlorine is not the ideal sterilizing agent for sensitive medical equipment as it can corrode certain equipment. Staff reported that Cidex was previously used, which is a preferable chemical to use to sterilize sensitive equipment. Although chlorine is a better disinfectant, the consultant recommends Cidex as the preferred method to sterilize sensitive medical equipment. All manufacturers make recommendations for the sterilization of medical devices. MoH and hospital officials should follow manufacturers recommended procedures for sterilizing sensitive medical equipment and devices.
3. One way to help orient clinical staff to the medical equipment they use on a regular basis is through manufacturer user manuals. Equipment user manuals were discovered to be kept in the hospital Biomedical Engineering Department and not easily accessible for all staff. The manuals appear to be brand new and are currently kept in printed format. When asked, staff did not realize that the manuals were available and expressed eagerness to read the manuals. Making these available to clinical staff would help ensure proper operation and care of hospital equipment.
4. Another observation involved the suctioning of airways of patients. NICU and ICU patients could benefit from regular suctioning. During the consultancy a post-operative neonatal patient was observed to experience a temporary setback because of the need for suctioning. Regular suctioning of the the breathing tube for mechanically ventilated patients should be done on an as needed basis to promote lung health.
5. Patient ventilators are often used without sterile water being used in the humidifiers. Sterile water is needed for heating and humidifying ventilator circuits otherwise patients receive only dry oxygenated air. Distilled water could be used and a supply was found to be

available in the hospital Pharmacy. Clinical staff seemed unaware of the availability of distilled water. Preference should be given to the use of sterile water and hospital administration and staff should work collaboratively to remedy this practice and improve patient safety in this area.

Challenges:

The challenges observed by the consultant are outlined below. These challenges provide opportunities to improve patient safety and care at Rafidia Hospital. It should be pointed out that the medical staff, both physicians and nurses, were anxious to improve patient care in the NICU and were eager to learn ways to accomplish these objectives.

1. Management of Ventilated Patients. There is ample opportunity to improve the care given to ventilated patients. The consultant noted examples of using prescribed approach to ventilator management, rather than clinical judgment and critical thinking skills. Improvement can occur with additional in-service training so the clinical staff better understand the theory, practice and reasons for a particular approach in caring for ventilated patients.

Typically, students who are trained in respiratory care take up to three months to learn the theory and functionality of different ventilators in a controlled classroom environment. This is not a regular part of medical and nurse training, so practitioners would benefit from additional didactic and hands on instruction.

2. Staff Training & In-Service Education. Despite having new monitoring equipment available on the unit for patient use, staff were sometimes observed using older medical equipment because they are more familiar with it. This is often typical behavior among health care personnel. The consultant advised to redouble efforts of orienting staff to new equipment with regular, periodic follow up to assure staff comfort. .

Recommendations:

1. To enhance and update staff knowledge of ventilator care and strategy, it is recommended that a Respiratory Therapist and/or an experienced respiratory neonatologist help develop a workshop on “The Basics of Neonatal Mechanical Ventilation, Weaning and Non Invasive Ventilation” presented by the current Pediatric Medical Staff. This training session should be followed up regular monitoring and in-service training to make sure best practices are implemented.
This recommendation is made toward improvement of practice at RH. Flagship Project involvement is optional, according to circumstances.
2. Improved multidisciplinary communication and collaboration can be achieved by inviting both physicians and nurses to participate in conferences and patient rounds together. Reviewing specific cases or situations can provide a teaching opportunity as well as a forum to exchange viewpoints respectfully. Future Flagship Project consultants can continue modeling communication and collaboration between disciplines so the interaction between disciplines is cordial, patient focused and each group is treated with respect.

3. Because material resources are an essential part of best practice in critical care areas, the consultant encourages redoubling efforts to coach hospital staff in methods to requisition needed supplies and equipment.
4. It is further suggested that when new medical equipment is purchased, a Biomedical Engineer provide on-site education and orientation to the new equipment for three consecutive days so all clinical shifts can be in-serviced. Follow up visits should be made at 2 week and 1 month intervals to ensure proper equipment usage and also to answer questions by clinical staff.
5. Each new piece of equipment comes with a manufacturer's supplied user manual. The Biomedical Department should provide a copy of the equipment manual for clinical staff to reference easily. A central library of manuals would be easy to setup in the NICU so staff can access it when needed.
6. The importance of Respiratory Care as a discipline and integral part of the NICU team was introduced at RH by this consultancy. There is a continuing need for a Respiratory Therapist to follow up with further teaching about respiratory physiology, ventilator setup and orientation, troubleshooting, and patient management. It is recommended that a Respiratory Therapist accompany future NICU/PICU teams, as needed.
7. It is recommended that RH staff participate in regular "mock codes" to develop competency and communication skills with each other. Specific team member roles should be developed for CPR situations. Roles include:
 - a. Identify and assign a lead resuscitator who is responsible for ordering medications and preparing for placement of a breathing tube in a patient. This person would function as a physician running the code.
 - b. Assistant #1 to maintain patient airway position and breathing for the patient,
 - c. Assistant #2 to provide chest compressions if needed otherwise they can assess effectiveness of breathing for the patient and check pulse rate also,
 - d. Assistant #3 to get medications ready and provide the proper size breathing tube for the lead resuscitator,
 - e. And a bedside nurse to document the time during the resuscitation and types of procedures done with their corresponding times noted for the patient chart.
8. Change the ventilator heater mode to a non-heated circuit. A PowerPoint presentation for this procedure was provided to RH medical staff.
9. Housekeepers are available at RH and working primarily to clean the adult and public areas. There is a need to identify and train housekeepers to do cleaning of nursing unit isolettes, heart monitors, ventilators, and patient areas. Housekeepers should also be trained to maintain soap filled in the dispenser and towels in the towel dispensers.

B. Palestine Medical Complex (PMC)/Ramallah General Hospital (RGH) and the Children's Wing

Findings:

The NICU is housed in Ramallah General Hospital, which is one of the five components of the Palestine Medical Complex (PMC). The NICU clinical staff was receptive to the in-service teaching and bedside coaching that was conducted. All of the physicians and nurses demonstrated interest in learning more about respiratory care and the management of ventilated patients. It was a joy to work alongside these clinical professionals in such a collaborative manner and to help them improve the care of the patients in the NICU at this facility.

Many of the findings, challenges and recommendations identified at the PMC are similar to those at RH.

1. Ramallah General Hospital has some respiratory equipment, however clinical staff are not familiar with most of the ventilators and do not know how to fully operate them. While the equipment is being used, its full potential is not employed.
2. Intensive Care Units (ICUs) at RGH have only one sink in the unit available. The lack of this critical resource hampers full implementation of this simple patient safety measure. This could partially be met through the use of alcohol-based or foam-based hand cleaners. There is no alcohol based or foam based hand cleaners available on the unit. At times, the consultant observed poor hand hygiene among staff. .
3. RGH has a Registered Respiratory Therapist working on staff. It appears that she is underutilized by hospital staff who may not be aware of her capabilities and training. . Her primary role to date has been in adult care, not pediatric or neonatal areas..
4. Staff would benefit from training in the Neonatal Resuscitation Program (NRP) and the program would benefit from training of NRP trainers...
5. Lack of in-depth or specific training about ventilators and ventilator management were observed to result in elementary approaches to these practices among staff. Increased opportunities for further education and training could improve the quality of clinical services.
6. The regulation of oxygen and air is difficult to maintain because oxygen blenders are not available and staff is unable to control the amount of oxygen in an oxyhood. Oxygen is only provided at 100%. This practice can cause tissue injury and is not recommended.

Challenges:

1. Again, there is an opportunity to improve patient safety through the implementation of a hand hygiene program.
2. The current Respiratory Therapist is underutilized and does not have a job description. The consultant has provided job descriptions for a Neonatal Respiratory Care Coordinator

and Neonatal/Pediatric Respiratory Therapist.

3. The management of ventilated patients is an area where there is opportunity for improvement.
4. The lack of use of sterile or distilled water in humidifiers.
5. Oxygen blenders are needed in key patient areas.
6. A thorough review of the distribution of supplies and equipment at RGH and the nursing unit supply par levels is needed so critical shortages of essential medical supplies can be avoided.

Recommendations:

1. Explore ways to better use the skills of the Respiratory Therapist at PMC in the orientation and training of clinical staff in many of the areas identified above.
2. Continue to facilitate in-servicing of new and existing equipment by working with the Biomedical Engineering Department to setup a tutorial and in-service clinic with bedside nurses at RH and the PMC/RGH. Clinical staff do not understand how to use their new equipment and giving them onsite training will help accomplish several objectives. First there will be greater collaborate efforts amongst healthcare providers. In addition, patient safety standards will be maintained because nursing staff will be able to approach the care of critically ill patients with more confidence. Lastly, it will help build the confidence of the NICU nursing staff and physicians to use their critical thinking skills to interpret information and not rely on “cookbook” stratPairing a Biomedical Engineer with a Respiratory Therapist could be a beneficial approach in future for the care of ventilated patients at RGH and RH.
3. Develop a system to regularly supply sterile water to support humidifiers throughout the hospital. A system to request and reliably obtain sterile water for the ventilator humidifiers, isolette humidifiers and for oxygen delivery devices is essential if the management of these types of patients is to improve.
4. Flagship Project procurement personnel and MoH counterparts need to review and evaluate the use of single-use disposable respiratory equipment and supplies. Respiratory care requires different types of connectors, tubing, filters, etc. in order to properly set up and operate equipment in a safe manner. Many of the items needed for this type service do not exist in hospital inventories at the present time.
5. Obtain suitable oxygen blender units.
6. Give consideration to training housekeeping personnel to properly clean dirty medical equipment. This would help ensure that equipment is cleaned regularly and also help free up nursing staff to do higher levels of work. Also, develop recommendations for cleaning specific types of equipment in accordance with manufacturer recommendations to avoid the overuse of Chlorine tablets and other corrosives.

7. Give consideration to developing PAR levels for soap and towels throughout the hospital to help improve hygiene practices.
8. Develop and utilize a standard protocol for blood gases in the NICU and other critical care areas of the hospital. Consideration should be given to hiring a person to maintain and operate blood gas machines who has a science background.
9. Consider acquiring and deploying in the NICU new resuscitating equipment to accommodate a peep valve for more effective neonatal resuscitation.
10. Continuing the training and in-servicing of nurses in the management of ventilated patients. Particular emphasis should be placed on extubating patients in accordance with standard practices and protocols.
11. Consider obtaining and using Ballard Inline Suction Catheters in the NICU. A Ballard catheter will help with infection control when changed every 24 hours. This multi-purpose catheter can be ordered separately and used for surfactant therapy. The use of this catheter will help reduce costs. When regular suction catheters are used they are single use and in a 24 hour period at 12 regular suction catheters will be used to just one Ballard Inline Suction Catheter.

C. Next Steps for RH and PMC/RGH

1. Consideration should be given to sending a second or follow-up NICU consultant team within 3 to 4 months to work at RH and PMC/RGH for 4-6 weeks. The team should be comprised of a Respiratory Therapist, Neonatologist, and Nurse or Nurse Educator. The suggested Scope of Work would include implementing some of the recommendations in this report and providing specialized teaching and ventilator management. Consider NRP training and Train-the-trainer for NRP. A possible schedule for this consultancy would be:
 - a. 2 weeks at PMC/RGH – to conduct and provide bedside mentoring and coaching
 - b. 2 weeks at RH – to conduct and provide bedside mentoring and coaching
 - c. 1 week at PMC/RGH – to follow up and assess compliance and troubleshoot any issues
 - d. 1 week at RH – to follow up and assess compliance and troubleshoot any issues
2. Integrate an NICU component in future medical conferences in Pediatrics. Physician resources for these meetings exist in the West Bank. There are qualified physicians available in Jerusalem, other local physicians and future consultants could be tapped as speakers as well. Topics could include an update for physicians on Respiratory physiology, mechanics and use of selected ventilators and non-invasive devices in the care of NICU patients. Support for such a meeting could come from the MoH and respiratory equipment companies or other contributing countries in the region.
3. Currently there is a respiratory care certificate program at Modern Community College. The Respiratory Therapist at PMC is an instructor in this program and would like to transition the program to a degree program. In order to properly train respiratory therapists, a degreed Respiratory Care program is important to provide specialized

education beyond the certificate level.

4. Continue to demonstrate and model the interdisciplinary and collaborative approach to patient care. Healthcare providers should treat each other with mutual respect and an openness that allows for frank discussion to continue to set up a system that relies on best practices. Keeping the needs of the patient at the center of these discussions will help bring about better team work and collaboration at all levels.

A system where physicians and nurses work hand-in-hand supported by hospital and MoH leadership that respects these people and supports them through the management of efficient and effective systems will help instill the reforms Flagship Project and USAID hope to see develop at MoH facilities throughout the West Bank. The winners are not the healthcare providers alone but those children, infants and neonates who come to the hospital for help.

ANNEX A: SCOPE OF WORK

Short-Term Consultancy Agreement Scope of Work

SOW Title: Respiratory Therapist

SOW Date: July 27, 2010

SOW Status: Final

Consultant Name: Carter Kwok How Tong BS, RRT-NPS

Job Classification: Short-Term US Expatriate Respiratory Therapy Consultant

Reporting to: Harry Gunkel MD

Flagship Project Objective

The Flagship Project is a five-year initiative funded by the U.S. Agency for International Development (USAID), and designed in close collaboration with the Palestinian Ministry of Health (MoH). The Project's main objective is to support the MoH, select non-governmental organizations, and select educational and professional institutions in strengthening their institutional capacities and performance to support a functional, democratic Palestinian health sector able to meet its priority public health needs. The project works to achieve this goal through three components: (1) supporting health sector reform and management, (2) strengthening clinical and community-based health, and (3) supporting procurement of health and humanitarian assistance commodities.

The Flagship Project will support the MoH in implementing health sector reforms needed for quality, sustainability, and equity in the health sector. By addressing key issues in governance, health finance, human resources, health service delivery, pharmaceutical management, and health information systems, the Ministry will strengthen its dual role as a regulator and main health service provider. The Flagship Project will also focus on improving the health status of Palestinians in priority areas to the Ministry and public, including mother and child health, chronic diseases, injury prevention, safe hygiene and water use, and breast cancer screening for women.

Specific Challenges to Be Addressed by this Consultancy

The quality of Palestinian health services has been compromised by fragmentation among health service providers, resulting in multiple and varying clinical standards and norms. There has been little citizen participation and feedback solicited by the MoH, resulting in a gap between citizen expectations and MoH delivery of services. Improvement of pediatric services in MoH hospitals is a priority of the MoH and Flagship staff is committed to help initiate change and necessary reforms to deliver better secondary health care services to the Palestinian people.

Objective of this Consultancy

This consultancy will focus on improving MoH clinical services at the secondary health care level by improving the expertise of staff in various aspects of respiratory care.

Specific Tasks of the Consultant

Under this Scope of Work, the Consultant shall perform, but not be limited to, the specific tasks specified under the following categories:

A. Background Reading Related to Understanding the Work and Its Context. The Consultant shall read, but is not limited to, the following materials related to fully understanding the work specified under this consultancy:

Previous Flagship Project technical reports, Work Plan, etc.
MOH National Strategic Health Plan
USAID Flagship Project Quarterly Reports
USAID Needs Assessment Report, December 2008
USAID MOH Institutional Development Plan

B. Background Interviews Related to Understanding the Work and Its Context. The Consultant shall interview, but is not limited to, the following individuals or groups of individuals in order to fully understand the work specified under this consultancy:

Chemonics Project Management Unit (PMU), if appropriate
Chemonics Field Office Staff, as needed
Appropriate MOH Staff and others appropriate
Hospital Emergency Staff and others as appropriate
LLU Palestine Project leadership

C. Tasks Related to Accomplishing the Consultancy's Objectives. The Consultant shall use his/her education, considerable experience and additional understanding gleaned from the tasks specified in A. and B. above to:

Work as a clinical consultant to help develop and enhance respiratory therapy care and services for the designated MOH hospital(s)

Mentor and advise MOH medical and nursing staff while providing on-the-job clinical training in respiratory therapy

Conduct training and/or lecture on relevant respiratory therapy topics

Contribute to the development of policies, procedures, guidelines, and educational materials for respiratory therapy services

Assess and make recommendations regarding development of respiratory therapy departments at MOH hospitals

If requested, conduct assessments at other MOH facilities of need for respiratory therapy services

Prepare assessment reports of any sites visited

In the event that new priority tasks are introduced during the consultancy, the consultant will work with the Flagship project staff to revise the tasks and expected products to accommodate for the new priorities

In addition to the above-listed tasks, the Flagship Project welcomes additional contributions and creative ideas in support of the Flagship objectives

The consultant is encouraged to support the identification of additional STTA and scopes of work to help accomplish Flagship goals and objective where possible

Expected Products

Within four days of the consultant's arrival, the consultant should provide the methodology for successfully completing the work (using Annex I: STTA Methodology).

The substance of, findings on, and recommendations with respect to the above-mentioned tasks shall be delivered by the Consultant in a written report that includes a policy statement, strategy, action plan, training materials, etc., for submission to USAID (using Annex II: the Flagship-provided STTA report template). A draft of this trip report is due prior to the consultant's departure. The final version of the report is to be completed no later than 7 business days after the consultant's departure.

Time frame for the Consultancy

The timeframe for this consultancy is on July 4, 2010 to July 24, 2010 in the West Bank

LOE for the Consultancy

The days of level of effort are estimated to be 2 days for travel and 18 days for work in the West Bank (6 day work week maximum). Unless otherwise specified, up to two (2) days may be allocated for preparation of the work and up to two (2) days upon conclusion of work in West Bank to complete the assignment.

Consultant Qualifications

The Consultant shall have the following minimum qualifications to be considered for this consultancy:

Educational Qualifications

Shall be a currently licensed respiratory therapist in good standing

Work Experience Qualifications

Minimum of three years of work in pediatric/neonatal critical care

Successful involvement and participation in international health and/or development

ANNEX B: ASSIGNMENT SCHEDULE

A. Activities and Meetings at Rafida Hospital (8 days):

July 6, 2010

- Introduced to members of the Flagship Organization
- Orientation with Harry Gunkel, MD and discussed the equipment and knowledge situation at RH and PMC.
- Introduced to physicians in Rafidia Hospital at Nablus

July 7, 2010

- Met Hainin (NICU nurse) and discussed cleaning of equipment and noted that nurses do this as well as cleaning the patient bedside area
- Witness a code blue on a post operative patient. CPR and reintubation of patient
- Requested manuals on ventilators to review information and develop a talk on how to use them

July 8, 2010

- Presented Dr. Hasan Fitian (Director of NICU) and the medical staff books, nasogastric tubes, books, and laryngoscopes with blades
- Provided the following materials:

NICU Manuals	9
Manual of Neonatal Care	1
Certification and Reviews Neonatal Intensive Care Nursing	1
Neonatology Management Procedures	1
Feeding tubes	50

- The following Laryngoscope and blades were provided (one of each):
 1. Rusch Laryngoscope Handle (Large) # 0658
 2. E Value Med Fg Laryngoscope Handle (Narrow) No serial number
 3. Rusch Miller) blade: Serial # L040901B
 4. e-Value Med Miller 0 blade; Serial #E1
 5. Rusch Miller #1 Blade; Serial # 21
 6. Rusch IV Mac blade #1; Serial#DS1
 7. Mac 1 blade No serial number noted
- Observed 2 patients and suggested weaning ideas with physician to prepare patients for removal of breathing tube successfully. Note: one of these patients was the post operative repaired patient. By the end of the day, these patients were both off the ventilator successfully.
- Noted that ventilator humidifiers lack sterile/distilled water in them; ventilator circuits are non-heated wire type so maintaining a safe temperature though the humidifier not possible without changing the heater to a non heated wire mode.
- Met the attending pediatric surgeon and discussed the problem of lack of humidity to the ventilator circuit.

July 9, 2010

- Worked with colleagues developing PowerPoint presentations, converting PowerPoint presentations into USAID template format, completing paperwork, and planning a strategy for next week

July 11, 2010

- Read ventilator manual and developed a PowerPoint presentation on “Galileo Ventilator,” “What is a Respiratory Therapist?,” and “Changing a Fisher & Paykel heater to the non-heated circuit mode”
- Converted “Mechanical Ventilation of the Neonate,” “SiPAP”, and “Neonatal Resuscitation” PowerPoint presentations to USAID template format

July 12, 2010

- At Rafidia, Dr. Hasan received a new BiPAP machine. Reviewed the manual and made notes. Worked with Dr. Hasan to look for equipment to adapt to patients needs.
- Attended a dinner meeting at Palestinian Pediatric Society. Presentation: Neonatal Screening by George Sahyoun PhD of Med Labs
-

July 13, 2010

- Presented a Grand Rounds presentation on “What is a Respiratory Therapist.” Also showed a video of a live delivery from Loma Linda. The NICU consultant team provided narrative and emphasized the importance of teamwork and communication.
- Met with Flagship Project Deputy Chief of Party and discussed the needs of Rafidia Hospital and the plan of action.

July 14, 2010

- Visited the tracheostomy patient with Dr. Hasan and placed the patient on the new BiPAP machine. Patient appeared to be tolerating the new equipment.

B. Activities and Meetings at PMC (7 days)

July 15, 2010

- Introduced to:
 - a. Dr. Haini, Deputy Director of PMC
 - b. Mohamed, Head Nurse Pediatrics Department
 - c. Dr. Mohammed, Attending Endocrinologist
 - d. Dr. Miriam, Chief of Pediatrics
 - e. Sihan, Director of Finance PMC
 - f. Jihad Head, Nurse of the Daycare Unit
 - g. Donya Awadallah, RRT, RT
- Went on a tour of the hospital with Donya and took a pictorial inventory of equipment and amount of beds in each unit. Toured the Clinical Lab and saw the blood gas machine Radiometer ABL 555. This machine is currently out of service. Noted that the Clinical Lab had distilled water however Donya stated that it is soft water. Discussed blood gas results when the machine was working. Toured the construction in the Kuwaiti Hospital and noted that the

CCU area has no available sinks other than the bathroom. Distributed the following books to the medical staff:

Egan's Fundamentals of Respiratory Care	1
Manual of Neonatal Respiratory Care	1
Certification and Reviews Neonatal Intensive Care Nursing	1
Neonatology Management Procedures	1
Perinatal and Pediatric Respiratory Care	1
Core Curriculum Neonatal Intensive Care Nursing	1
Feeding tubes	40

- Distributed the following Laryngoscope Handles and blades, in the care of Donya Awadallah, RRT:
 1. Rusch Laryngoscope Handle (Large) Serial # 6003
 2. Rusch Size 0 Miller blade Serial #L040901B
 3. Rusch Size 0 Miller blade Serial # None noted on this piece of equipment
 4. Rusch Green Fiberoptic Laryngoscope Handle (Large) Serial #021402
 5. Miller size 1 ½ blade AMB: No Serial number found
 6. Rusch Green Spec Fibre Optic Laryngoscope Handle (Thin Handle) No Serial Number noted
 7. Green Spec Miller 0 blade Serial # 2721
 8. Green Spec Miller 1 blade Serial # 9060
 9. Green Spec Miller 0 blade Serial # 2415
 10. Green Spec Mac 1 blade Serial # 2863

July 16, 2010

- Introduced to the Component Coordinator of the Flagship Project
- Met with Harry Gunkel, MD and the Program Officer regarding the PMC and some of the needs and education to be taught.

July 18, 2010

- Introduced to:
 - a. Flora Baruti, MD - Pediatric Fellow
 - b. Ribhee Bahsharap, - Program Director, PMC
- Presented a PowerPoint lecture on SiPAP.

July 19, 2010

- Introduced to:
 - a. Dr. Tasneem Atatrah, Monitoring & Evaluation Specialist
 - b. Dr. Meriam Albaseer, Chief of Pediatrics
 - c. Dr. Lami Kort, Attending Pediatrician
- Presented the NRP video, Part I
- Presented a lecture on Neonatal Resuscitation-Airway and Basics of Ventilation Part I

July 20, 2010

- Introduced to Maha Awwad, RN - Director of Nursing at PMC.
- Continued with the presentation of Part II of the NRP video.
- Continued with presentation and Part II of Basics of Mechanical Ventilation.
- Met with the Flagship Project Procurement Manager to discuss procurement needs at RH and PMC.

July 21, 2010

- Met with Donya Awadallah, RRT to discuss the equipment procurement process. Discussed this issue with Flagship Project Executive Advisor, Hospital Management.
- Met with Harry Gunkel and Program Officer from the Flagship Project to review recommendations and received advice on fine tuning the initial STTA report.

July 22, 2010

- Met with Harry Gunkel, MD and the Director of Clinical & Community Based Health and the Program Officer from the Flagship Project to go over the recommendations and concerns.
- Met with Harry Gunkel, MD and the Flagship Project Procurement Manager to discuss the difficulties of obtaining equipment and supplies.

C. Other Meetings:

July 12, 2010

- Met with Naim Sabra, MD, Director General of Hospitals Directorate, and discussed:
 1. Dr. Sabra is considering sending 3 doctors from Nablus to Jerusalem for fellowship in the following areas: Neonatology (1 year), Pediatric Cardiology (1 year), Pediatric Hematology-Oncology (2 years).
 2. The need for more nursing staff to offset the amount of time to operate the newer technology monitors and ventilators.
 3. Offered suggestion to hire and train or train existing house keeping personnel to clean nursing and respiratory equipment and also the patient areas; training would be done by existing nursing staff.
 4. Just before departing, met with Palestine's Minister of Health who invited us to see the plans for the new PMC building.

July 24, 2010

- Met with Pilar and Suzi Srouji MD, MPH, Deputy Director of Health & Humanitarian Assistance Office of USAID and discussed:
 1. Repeated need for nurses and sinks without any practical advice on what to do currently as an alternative choice.
 2. Suggestion of the possibility of having volunteer international nurses be used as an added resource and also assist in training with the use of new equipment.
 3. Recommendation that future teams visit Holy Family Hospital in Bethlehem either at the beginning or in the middle of their schedule.
 4. Discussed the hiring of a local Pulmonologist to work with doctors on Respiratory Mechanics and ventilator use.

5. The consultant team suggested the use of Clinical Specialist (RT/RN) to partner with the equipment company's biomed specialist to refresh training and follow up training to assure correct use of said equipment as well as answering question from equipment being used
6. The consultant team recommended the use of a Respiratory Therapist as part of the consultancy. The consultant team recommended the use of a respiratory therapist as a part of the member or the next consultant team to follow up on previous teams work and to meet with Donya to assist her with respiratory care issues, update her on current practice, and to also work together to provide information and training to physicians and nurses.
7. The consultant team recommended that the next team stay for a month with overnight stays in Nablus.

ANNEX C: CONSULTANT CV

CURRICULUM VITAE

CARTER KWOK HOW TONG BS, RRT-NPS, RCP

Mailing Address:

[REDACTED]
[REDACTED]

Phone Number:

[REDACTED] (Home); [REDACTED] (Mobile)

Soc. Security Number

[REDACTED]

RCP License Number

[REDACTED]

Date of Birth

[REDACTED]

Education:

Degrees:

Bachelor of Science in Respiratory Care 1982
Loma Linda University School of Respiratory Care
Loma Linda, California, 92354

Associate of Science in Respiratory Care 1980
Loma Linda University School of Respiratory Care
Loma Linda, California, 92354

Professional Memberships:

American Association of Respiratory Care since 1980
AARC# 03664751

California Society of Respiratory Care since 1980
CSRC# 2997

California License Respiratory Care Practitioner
RCP # 2997 expires 08/31/12

Community Awards and Appointments:

Elected to the Board of

The American Lung Association of Inland Counties (ALAIC) May 1996 to June 1999

Elected Vice President of Programs for the ALAIC from 1995 to 1997

Outstanding Volunteer Leadership Award from the ALAIC in Jan. 1996

Work Experience:

Present:

Loma Linda University Medical Center
Department of Respiratory Care
Pediatric and Neonatal Intensive Care Units
11234 Anderson Street
Loma Linda, California 92354
(909) 558-4488

Observations and Recommendations Regarding the Neonatal Intensive Care Unit at Rafidia Hospital and Evaluation of the Neonatal Intensive Care Unit at Palestine Medical Complex
Palestinian Health Sector Reform and Development Project (Flagship Project)

Part Time Instructor
Perinatal-Pediatric Clinical Case Studies
Department of Cardiopulmonary Sciences
Loma Linda University
School of Allied Health Professions
Nichol Hall, Room 1605
Loma Linda, California 92350
(909) 558-4599

Certifications:

Registered Respiratory Therapist	Since 1982
Neonatal Pediatric Specialist	Since 2008
Basic Life Support Health Care Provider	Exp. 08/10
Pediatric Advanced Life Support Course	Exp. 09/10
Neonatal Resuscitation Program Course	Exp. 09/11
Advanced Cardiac Life Support	Exp. 08/11

Work Experience:

Job Duties: Working with Residents, Fellows, and Attending Physicians in recommending the use of medications, ventilatory changes and other treatment options to improve patient outcomes

2010- Part Time Clinical Instructor Loma Linda School of Cardiopulmonary Sciences

2009- Part Time Instructor School of Cardiopulmonary Sciences
Perinatal-Pediatric Clinical Case Studies

2009- Lead NICU and Relief House Supervisor on AM Shift

2006 - 2009 Relief Lead NICU/PICU and Relief House Supervisor on AM Shift

1999 – 2005 Lead NICU and Relief House Supervisor NOC Shift

1997 – 1999 Relief Lead NICU Area NOC Shift LLUMC

1996 to 1997 Respiratory Care Practitioner
Pediatric/NICU Area NOC Shift LLUMC

Special Respiratory Care, Inc.
18327 Napa Street
Northridge, California 91324
(800) 669-5767

Job Duties: Sales and Rental of Respiratory Equipment and the promotion of Respiratory Equipment to area hospitals, and Physician offices.
Territory: Inland Empire

Fisons Pharmaceuticals now Rhone-Polenc Rorer Pharmaceuticals

Observations and Recommendations Regarding the Neonatal Intensive Care Unit at Rafidia Hospital and Evaluation of the Neonatal Intensive Care Unit at Palestine Medical Complex
Palestinian Health Sector Reform and Development Project (Flagship Project)

Job Duties: Promotion of primarily Allergy and Asthma products to Primary Care Physicians, Allergists, Pulmonologists, and area Pharmacies.

Conducted Physician Speaker Programs, developed sales training materials, presented issues on Asthma to Regional Sales force and also to area Family Practice Residents.

In January of 1996 was awarded with Tilade on the Loma Linda University Medical Center's Formulary.

Territory: Inland Empire

1989 Loma Linda University Pediatric Medical Group

Job Duties: Research Assistant for Pediatric Pulmonary Function Testing, direct patients to perform Screening and sub specialty Pulmonary Function Test, Pulse Oximetry, educate patients on Asthma, Nebulizer use and other Asthma therapies as prescribed by a group of Pediatric Allergists and Pulmonologist.

Loma Linda University Medical Center
Department of Respiratory Care

Job duties: E.R. department, CCU, PICU, involved in early use of Ribavirin studies. Educate patients and their parents on Home Ventilator Care for discharge, member of the Equipment Evaluation Committee, and selected to be on the Policy and Procedure Committee for the PICU.

Awards/Appointments:

Department Award for Excellence

2008 Department Award for Teamwork

Appointed to the NICU Orientation Manual Team

2006 Selected to work with NICU RN Interns in the Clinical Simulation Lab

March 17, 1997 member of the Partial Liquid Ventilation Team (the study is now on hold by the FDA), and member of the Inhaled Nitric Oxide Team.

1992: Received the Fisons Top 10 Club award by being in the top 10% of company sales.

1992: Appointed as Fisons District Respiratory Specialist for 2 years.

Research:

April 1, 2009 **Exhaust Vents on the High Frequency Jet Ventilator Can Artificially Lower the Jet Circuit Temperature from the Whisper Jet**

Presented at Snowbird High Frequency Ventilation Conference
Snowbird, Utah

December 15, 2008 **What Is the Threshold of PCO₂ Needed to Activate the Measurement of Quantified Versus Qualified CO₂ Detector**

Presented at AARC 2008 International Respiratory Congress
Anaheim, California

March 2008 **Verification of Endotracheal Tube Placement In A Neonatal Intensive Care Unit Pedi-Cap versus BCI Capnocheck Capnometer**

Yomna Ibrahim MD, Carter Tong BSRT, Mitchell Goldstein MD

Lectures:

2006 Dec 14 Co-Presenter on iNOVENT for iNO Therapeutics with Andrew O. Hopper MD Neonatologist to Kaiser Hospital Fontana NICU group

2006 Oct 26 Presentation on Respiratory Care modalities to 3rd year Loma Linda University Medical Students

2006 Oct 3 Presentation on ABG Interpretation with Clinical Scenarios to the Loma Linda University Medical Center NICU transport team RNs

2004 - Present Presented Lecture to Loma Linda University Medical Center NICU Medical Residents on Mechanical Ventilation in the NICU per NICU Residents supervised by Sun Hwa Kim MD Attending Neonatologist

2004 - Present Presented Lecture on Mechanical Ventilation in the NICU, Blood Gas Analysis and Interpretation for Loma Linda University Medical Center NICU RN Internship Program

2002 - 2004 Presented Lecture on Neonatal Respiratory Diseases to Loma Linda University Medical Center NICU RN Orientees

References available upon request.

ANNEX D: BIBLIOGRAPHY OF DOCUMENTS COLLECTED AND REVIEWED

1. HAMILTON GALILEO VENTILATOR MANUAL – manual is on file at the biomed department of Rafidia Hospital

2. NEWPORT EI50 BREEZE VENTILATOR MANUAL – manual is on file with Donya Awaddlah, RRT at the PMC

3. PMC REQUEST LIST FROM DOUMA (RRT)

1. Humidifier F&P 850
2. Blenders with flowmeters
3. Ballard inline suction catheters
4. O2 Analyzers
5. Pulse Oximeters sensors (premie, newborn and infant)
6. Monitors
7. Lukens trap
8. Yankauer suction
9. Meconium Aspirator
10. Easy Cap (Neo)
11. Manual precursor (CPT)
12. Peds Aerosol Mask
13. Infant and Peds circuit with pressure line
14. Bacterial filters
15. HME (Neo/Peds)
16. Large Vol Nebs (Heart Nebs)
17. Cool Aerosol setups
18. External heater (Hot plate?)
19. Corrugated tubing
20. SiPAP Head Bonnets
21. Micro-flowmeters (Low flow)
22. Laryngoscope bulbs
23. Sterile/Distilled water
24. 15 mm adapters

25. 22 mm adapters
26. 15/22 mm adapters
27. Infant Medication Nebulizer T-piece
28. Eye Covers
29. LMA (Laryngeal Mask Airways for NICU)
30. Bulb Syringes/Bulb Suction
31. Digital Projector
32. External computer speakers
33. Neonatal Stethoscopes
34. Infant Manikin for intubation and NRP
35. Blood gas machine
36. Alcohol based hand cleaners (example Purell brand)
37. Surfactant (Infasurf/Calfactant)

ANNEX E: LIST OF MATERIALS DEVELOPED AND/OR UTILIZED DURING ASSIGNMENT

A. PowerPoint Presentations – on file at the Flagship Project office:

1. Powerpoint on the Galileo Ventilator
2. Changing a Fisher & Paykel heater to the non heated circuit mode
3. Mechanical Ventilation of the Neonate
4. SiPAP- What is it and How to set it up
5. Blood Gas results and Ventilator Changes
6. NICU RN ABCs of Blood Gases
7. Mechanical Ventilation of the Neonate Part 1 & 2
8. SiPAP- What is it and How to set it up
9. SiPAP setup practicum in the NICU
10. Neonatal Resuscitation
11. LLUMC NICU Delivery Room Cases
12. Asthma Guidelines
13. APGAR Scoring
14. Respiratory Technical Procedures
15. Fischer & Paykel MR 850 heater User Manual

B. Technical Procedures – on file at the Flagship Project office:

1. Artificial Airway Maintenance
2. Calibration High Frequency Oscillator Ventilation
3. Change Endotracheal _ET_ Tube
4. Change Tracheostomy Tube
5. Close-System Tracheal Suction Catheter
6. Continuous Nebulizer
7. CPAP_ADULT
8. CPAP_NEO
9. CPAP_PED
10. CPR
11. CPT With Associated Techniques for Secretion Removal
12. Cuff Inflation Technique
13. DPI
14. Endotracheal Suction
15. Endotracheal Suction draft 2
16. Extubation
17. High Flow Oxygen Therapy
18. High Frequency Oscillatory Ventilation_HFOV
19. Humidity Therapy
20. Infant Flow SiPAP
21. Interdisciplinary Care Plan
22. Intermittent Nebulizer
23. Intubation by RCP

24. Intubation by RCP-Neonate
25. Medication Nebulizer _Med Neb_
26. Metered Dose Inhaler _MDI_
27. Nasotracheal Suction
28. Neonatal Hand-Ventilation
29. Non-Invasive Positive Pressure Ventilation for the Neonatal Patient _NIPPV_
30. Oxygen Therapy – Humidifier
31. SiPAP Operators Manual 197_675-101-101H_Infant_Flow_SiPAP_OM
32. Ventilator Care of the Adult Patient
33. Ventilator Care of the Neonate Patient
34. Ventilator Care of the Pediatric Patient

C. Palestine Medical Complex - Kuwaiti Surgical Hospital Assessment



New Coronary Care Unit (CCU) on the second floor



In all of the CCU rooms and in the hallways there are no sinks seen



The only sink that I have found is in the bathroom



Also in each of the CCU rooms



The positioning of the Gas outlets is too close together

It would be difficult to connect the ventilator gas lines to the wall with the suction.

Ideally placing these outlets on a horizontal bar so the ventilator can be placed closer to the patient would be great. Also having the gas outlet spaced out between each other by about 2 feet apart from each other would afford some room for all equipment to be placed in effective areas.



Ribhee Bahsharap informed Donya that the area marked in red was to be torn down and made into a Pediatric Cardiac Catheter Lab

D. Overseas Respiratory Care Advice

BACKGROUND: Loma Linda University has a B.S. program in Respiratory Care in Saudi Arabia and the consultant sought the advice of these two professionals regarding respiratory care in the region. David Stanton, MS is the Director of the Respiratory Care program at Loma Linda. David Lopez, EdD, RCP, RRT is an Associate Professor and Department Chair in the department of Cardiopulmonary Sciences at the Loma Linda University School of Allied Health Professions. He also oversees the respiratory care program in Saudi Arabia.

QUESTION:

Is the RRT exam and designation recognized internationally? Is the RRT exam that same as what we take over here? Is there any reason why a RN would feel that their job is threatened by a Respiratory Therapist?

REPLIES:

The NBRC will not give an exam (CRT, RRT, RPFT, NPS) to anyone except a graduate of a U.S.A. CoARC accredited program! Only CoARC accredited Respiratory Care education programs that have satellite programs outside the U.S.A. will have graduates eligible to take NBRC exams. All programs must be taught in English.

The NBRC generated RRT exam is the same for all graduates of accredited programs unless they (NBRC) generate different versions and choose to give it. These exams are validated and secured by the NBRC.

Some Countries outside the U.S. recognize the NBRC credentials, like Saudi Arabia. In fact, respiratory care expatriates wishing to work in Saudi must have the RRT credential in order to work there.

Most all of the allied health professions were once under nursing. As each specialty component developed beyond the ability of an RN to be responsible, medical professionals felt the need to build education programs for that specialty, leading to credentialing and licensure. Nursing professionals that might be threatened would be those lacking knowledge (insecure) in the defined guidelines of their own profession. Capable RNs appreciate the help of health care professionals, who have special education and proven competencies that reach are beyond their scope, education and responsibility.

Respectfully,
David Stanton

The RRT and designation is recognized internationally as a US copyrighted symbol/registration. The NBRC has a director of international affairs, Homer Rodriguez and the AARC has Jerome Sullivan who have assisted various countries in developing respiratory care worldwide. There are regional representatives from the NBRC that cover the middle east (I will need to find it first).

The RRT is the same as that taken in the US and therefore the preparation needs to be the same.

We (LLU) have the only accredited Co-ARC approved program outside the USA-the NBRC only accepts applicants from Co-ARC approved programs. The major problem with the RRT exam being given outside the USA is that it does not reflect the practice of respiratory care in any particular country outside the US. Since some countries do not know about or use respiratory care, this presents a huge strategic problem; there is not mechanisms for hospitals or governments (most countries have government run hospital systems) to recognize, hire or pay a therapist if the system has not be set up before hand. This process can take a few years as we are doing now in Peru or 10-15 years as it has taken in other countries such as Taiwan and Saudi (some minor wrinkles to still work out in Saudi). In addition, since the practice of respiratory care can be very different, the RRT exam would not be appropriate. In Saudi all of our hospitals are JCI accredited which is the same as JCO here in the states, in addition another requirement is that the curriculum and training be done in English, which it is (this is not possible in most countries so Co-ARC and NBRC are not an option). Therefore the NBRC has assisted interested countries in beginning the process with a CRT level exam to get them started-then they need to complete a job survey to either go to the next level-possible RRT or a different CRT exam: all to reflect the practice in the host country.

Typically the respiratory care is done by the physician, nurse, PT (basic care only), anesthesia tech. not at all or any combination of the preceding individual positions. Where a nurse feels threatened, it is usually by a nurse from the US telling them that this will happen or that RCP's are not needed, or the nurse being told that they will need to do more work. There is a roll out process that we have used successfully that incorporates team work, education, and collaboration.

We can talk more on this topic as it has far reaching implications for the country. In the Sir Run Run Shaw hospital we are just beginning to have a place for RCP education-because the government does not recognize the profession outside SRRS Hospital. It is difficult to train a person for one hospital.

--- I hope to have our program online by next year- not sure if that is in her time line.

To make this accepted I have a few suggestions we can discuss in detail but to begin this needs to be done with as much medical evidence as possible. Have a standing committee that sets up the job description of what is needed in the hospital; have physicians, nurses, and the RRT. Set up a

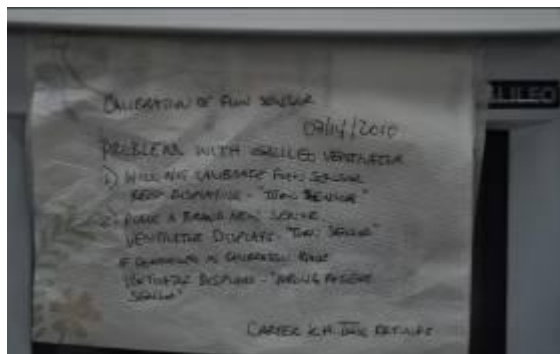
department with protocols, staff (made up of interested nurses and technician level practitioners, provide resources (aarc clinical practice guidelines -evidence bases practice), start small-in one area: high risk neonates only and then once you have established a reputation you can branch out. The education can be done OJT with 2-4 hours 3 days per week-this will take time and effort. Again we can talk more when you return or we can do a conference call.

Take care,
David Lopez, EdD, RCP, RRT

E. Pictorial Illustrating the Need for Increased Training Time at Rafidia Hospital:



A preterm infant with an Adult Pulse Oximeter Clip



This ventilator was on a patient that was evaluated as defective for patient use. Medical personnel did not realize this.

Criticare brand Monitor not being used



View 1

Examples under utilization of new equipment and use of an Adult oximeter probe on preterm infant at Rafidia Hospital



New monitor with proper pulse oximeter probe for patient population on standby, the patient above could have benefitted from the use of this monitor



Consultant instructing Dr. Flora, a Medical Resident and Donya RRT on setup and use of SiPAP



Donya Awadallah RRT



Dr. Hasan Fitian with a young tracheostomized patient*.
**Permission for photo given by the patient's mother.*



Dorothy Forde, RN working with a neonate



The medical staff at Palestine Medical Complex after a farewell for the NICU consultant team