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INSTRUCTOR UPDATE

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EFFECTIVE TEAM LEADERSHIP IMPROVES NEONATAL RESUSCITATION

What makes an effective leader? A person with leadership skills has the ability to take initiative, make swift, concise decisions and accept responsibility for their actions. They are also the type of person you probably want on your neonatal resuscitation team when faced with a life or death situation in the delivery room.

Neil Finer, MD, FRCP, and Wade Rich, RRT-NPS of the University of California at San Diego, have discovered that using a *team leadership* approach in neonatal resuscitation training provides neonatal resuscitation health practitioners with the ability to better prepare for serious situations that may arise in the delivery room.

"We believe this is a unique way to teach, and has evolved out of the desire to make the resuscitation process more intuitive as well as provide people with more direction. We're dealing with crisis management in neonatal resuscitation. When you enter the delivery room, there's very little about it that makes it routine," explained Dr. Finer, Director of Neonatology, Professor of Pediatrics at the University of California San Diego Medical Center.

"Resuscitation requires coordination and cooperation between professionals," Dr. Finer continued. "When it gets down to it, we believe that there has to be a leader (on the resuscitation team) because someone must be able to make quick decisions."

SOMEONE IN THE DELIVERY ROOM HAS TO MAKE SURE THAT THE OVERALL PLAN IS BEING FOLLOWED RATHER THAN HAVING EACH PERSON THINK INDEPENDENTLY, LEAVING SOME TASKS UNCOMPLETED AND SOME DONE MULTIPLE TIMES.

Finer and Rich conduct neonatal resuscitation quality improvement meetings once every two weeks during which video recordings of actual neonatal resuscitations obtained during the previous two weeks are reviewed. Members of the team that attended the neonatal resuscitations describe what occurred, then the entire group evaluates the actual interventions using the

AAP/AHA guidelines for neonatal resuscitation as the gold standard.

This allows the team to regularly review their skills and learn from their actions. Dr. Finer and his team have incorporated the team leadership method into their neonatal resuscitation training exercises during the last 5 years.

When a team leader is not identified during resuscitation, several scenarios can occur. For example, they have observed more than one person doing a single task, such as drying, no one giving a heart rate or assisting with oxygen during intubation, and no one coordinating compressions and ventilation. "These things actually happen, and we know they happen because we review them on video," Dr. Finer said.

"We are convinced that someone must serve as a leader at every resuscitation," added Rich, Neonatal Research Coordinator at the University of California San Diego Medical Center. "The leader is the person who says to a specific individual, 'Can you listen for breath sounds?' or stops an intubation attempt which has gone on too long. Someone in the delivery room has to make sure that the overall plan is being followed rather than having each person

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AN UPDATE ON THE LMA WORKSHEET

During the International Liaison Committee on Resuscitation Neonatal Delegation (ILCOR Neonatal Delegation) meeting in December 2003 in Washington, DC, more than 35 neonatologists and health care professionals presented 15 evidence-based worksheets related to delivery room resuscitation. These worksheets will be used to develop the new international resuscitation consensus on science and will be the foundation of a new set of evidence-based guidelines scheduled for publication in late 2005.

AT THIS TIME THERE
ARE INSUFFICIENT DATA
TO DIRECTLY COMPARE THE
LMA AND FACE-MASK
AS THE PRIMARY AIRWAY
DEVICE DURING NEONATAL
RESUSCITATION.

One of the guidelines currently under review pertains to the use of laryngeal mask airway (LMA) ventilation as an alternative to bag-and-mask ventilation (BMV) and endotracheal intubation during neonatal resuscitation. Enrique Udaeta, MD, FAAP; Gary Weiner, MD, FAAP; and Wally Carlo, MD, FAAP, authored independent worksheets on LMA use in resuscitation. Dr. Udaeta, a neonatologist in Colina del Sur, Mexico, served as the project's primary international liaison. Dr. Weiner is a member of the NRP Steering Committee and Dr. Carlo is a former cochair of the NRP Steering Committee.

Their collective findings indicate that the LMA can effectively provide positive-pressure ventilation during neonatal resuscitation. The majority of subjects studied have been greater than 2500 grams at birth; however, limited data suggest that the LMA may be effective among newly born infants as small as 1000 grams.

It's important to note that there are some circumstances in which the use of the LMA may not be appropriate. For example, the LMA is currently available in one size only and may not be small enough for infants who weigh less than 1000 grams, explained Dr. Weiner. Additionally, there are potential adverse events associated with LMA placement, including soft-tissue trauma, tongue edema, and nerve damage from pressure, primarily from long term use, said Dr. Weiner. An additional concern that has been expressed is that the LMA may only be capable of providing 20-30 cm H₂O pressure; if you need to exceed this pressure, you may find that air leaks around the cuff. There have also been reports of laryngospasm with the LMA, which could cause airway obstruction.

At this time, there are insufficient data to directly compare the LMA and face-mask as the primary airway device during neonatal resuscitation. A single randomized controlled trial suggests that the LMA may be as effective as endotracheal intubation if bag-valve-mask ventilation is unsuccessful. Furthermore, several case reports demonstrate that the LMA may be successful among infants with difficult airways when you can't ventilate and can't intubate.

"In our review, we were surprised to find so few controlled clinical trials evaluating the LMA during neonatal resuscitation. Most of the studies were either case reports or case series. We also found many case reports describing infants and children where the LMA was used for surgery, airway rescue, procedures and diagnostic evaluations," said Dr. Weiner.

According to the *Textbook of Neonatal Resuscitation, 4th Edition*, "if your hospital uses LMAs, you will need to stock them on your resuscitation trays and personnel will require special training in their use." Details of LMA insertion are not included in the current textbook.

The Neonatal Resuscitation Program (NRP) Steering Committee offers the *NRP Instructor Update* to all AAP/AHA Neonatal Resuscitation Program Instructors.

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Statements and opinions expressed in this publication are those of the authors and are not necessarily those of the American Academy of Pediatrics or American Heart Association.

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STATE-OF-THE-ART 5TH EDITION DVD UNDER DEVELOPMENT

The revised *Textbook of Neonatal Resuscitation, 5th Edition*, scheduled for publication in 2006, will include an exciting new teaching tool: an interactive DVD featuring various scenarios designed to prompt decisions that lead to different outcomes.

Initial filming of the new DVD was conducted over a four-day period in August at the Center for Advanced Pediatric Education (CAPE) at Stanford University in Palo Alto, CA and involved 20 neonatal health practitioners from all over the United States (see below for list of names.) The DVD focuses on five specific clinical situations:

1. Routine C-section
2. Placental Abruption
3. Congenital Malformation
4. Meconium Aspiration
5. Prolonged Resuscitation

"Some scenarios are more straightforward and others are more challenging and generate a fair amount of discussion," explained Lou Halamek, MD, FAAP, Associate

Professor, Division of Neonatal and Developmental Medicine, at Stanford University. "There are many different decision points within each scenario and each leads you to different pathways and outcomes."

Dr. Halamek guided the DVD filming with Jane E. McGowan, MD, FAAP, Associate Professor of Pediatrics, Division of Neonatology, at Johns Hopkins University School of Medicine in Baltimore. Drs. Halamek and McGowan are members of the NRP Steering Committee.

Currently, post-filming production and editing is taking place under the guidance of Dana Braner, MD, FAAP, Professor of Pediatrics at Oregon Health and Sciences University in Portland. The editing process will take approximately six to nine months.

"We need to make sure the DVD flows very well, that all is technically sound and in agreement with the new guidelines," added Dr. Halamek.



(L-R) Christine Nawas, Dr. Dana Braner, Dr. Jane McGowan, Kim Yaeger, and Susanna Lai block the C-section scenario.



Dr. Bill Rhine and Dr. Jane McGowan review script details for the prolonged resuscitation scenario.



Dr. Lou Halamek and Dr. Jane McGowan review the scenes from the control booth.



Dr. Alexis Davis, Dr. Henry Lee, and Sarah Beth Lyda prepare for filming of the meconium suctioning scenario.

The NRP Steering Committee would like to extend a special thanks to the following people for their dedication and commitment behind the scenes during the DVD filming at Stanford University:

- Dana Braner, MD, FAAP
- Alexis Davis, MD
- Glenn DeSandre, MD
- Arun Gupta, MD, FAAP
- Louis Patrick Halamek, MD, FAAP
- Steven Keith Howard, MD
- Henry Lee, MD, FAAP
- Jane McGowan, MD, FAAP
- David A. Randolph, MD
- William Rhine, MD, FAAP
- Julie MR Arafen, RN
- Barbara F. Bates, RN
- Kristine Boyle, NP
- Sarah Beth Lyda, RN
- Jennifer McAuley, NNP
- Kimberly Yaeger, RN
- Susanna Lai
- Christina Nawas
- Jenny Pereyda
- Michelle Wachs

NRP EDITOR'S WORK ON SIDS HONORED



Lights, cameras, and the red carpet – that was the glitzy scene at Constitution Hall in Washington, DC during the Discovery Health Channel's first annual Medical Honors gala and

awards ceremony in July where the NRP's very own John Kattwinkel, MD, FAAP was honored for his work related to Sudden Infant Death Syndrome (SIDS.)

Dr. Kattwinkel, editor of the *Textbook of Neonatal Resuscitation, 4th Edition*, and Professor of Pediatrics at

the University of Virginia in Charlottesville, was one of 13 people in the United States recognized for a variety of innovative efforts ranging from breast cancer research to lobbying legislators on behalf of the Clean Indoor Air Act.

"I received a lot of the credit, but I didn't do that much. Our task force did the work," said Dr. Kattwinkel, referring to the AAP's Task Force on Infant Sleep Position. "My work on infant sleep position and SIDS was interesting because it focused on a very small part of my career, yet it turned out to be one of the most gratifying things to happen to me in my life."

In 1992, the Task Force on Infant Sleep Position collected and evaluated data

based on studies conducted in Europe, Australia, and New Zealand suggesting infants should sleep on their backs versus their stomachs. The task force concluded that infants should sleep on their backs.

"Over 10,000 babies are alive today because of the astute observations of a handful of epidemiologists from around the world, a close working relationship between private and public organizations (primarily the AAP and the National Institutes of Health), and the cooperation of the media in spreading this simple message," Dr. Kattwinkel said during his acceptance speech. "This award is for all of us."

Congratulations, Dr. Kattwinkel!

INSTRUCTORS ASK

Q. Can the NRP Written Evaluation be completed as a take-home test?

A. The Written Evaluation is intended to be taken as a closed-book evaluation. It is a secured item and should not be given to students to be completed at home. Course instructors should monitor administration of the evaluation and the participants. The best place to administer the Written Evaluation is in a room that is quiet and free from distractions. The participants should be allowed adequate time for completing each lesson's evaluation.

Q. When I look at my roster list, I have 2 rosters with the same course date that have a status of "saved" and "submitted." How can this be corrected?

A. The database allows instructors to save a roster without submitting it. This option allows an instructor to save the roster and complete it at another time. To avoid having a build up of saved rosters, the best practice would be to review your roster list and look for saved rosters. Check to see if there is a roster that has been submitted for the same course. If so, delete the saved roster. **Please be aware that it is impossible to delete any rosters that have already been submitted.**

To view a roster, click on the radio button next to the appropriate roster and click "view roster." This will allow you to look at the roster; however, you will not be able to make any changes to it. If you need to make changes to the roster, you must click on "edit roster." You can only edit a saved roster. If the roster is a duplicate, click on "delete roster."

While you are logged into the database, it is a good time to review your personal information. Click on "Update Info" and check that your email address and other information is up-to-date. This will ensure that you will receive confirmation emails and instructor/provider cards in a timely fashion.

PEACE CORPS WORKERS ASSIST WITH NRP IN NEPAL

Nepal has one of the highest newborn mortality rates in the world. In December 2003, physicians working in the District Hospital of Ilam in far Eastern Nepal recognized the need for staff training to improve neonatal resuscitation. Together, Dr. Sanjaya Shrestha, a family practice resident, and Beryl Brooks, an RN serving as a Peace Corps Volunteer in Ilam, planned to offer the Neonatal Resuscitation Program (NRP) course to the hospital staff.

Dr. Shrestha worked with Dr. Tara Pokhrel, Hospital Superintendent and District Public Health Officer in Ilam, to arrange classroom space and schedule staff. Brooks contacted Dr. Nancy Shull, Neonatologist, and Mrs. Diane Youmans, RNC, MSN, Neonatal Outreach Educator, both from Memorial Health University



Participants in the course in Nepal practice interposing chest compressions and ventilation.

Medical Center in Savannah, Georgia to gather the necessary training materials.

After two months of planning, two courses were scheduled for the first week in March 2004. Dr. Shrestha provided Nepali translation for the first group of participants, and Tilottama Phuel, RN, hospital staff

nurse, provided translation for the second group. Lydia Toth, RN, a Peace Corps Volunteer working in a Family Planning Clinic in nearby Fikkal, provided homework review and assistance during the practicum sessions.

In June, a follow-up practicum session was held to give hospital staff additional practice and reinforce the skills learned during the March program. Staff reported that between March and mid-June, five infants born at District Hospital of Ilam were successfully resuscitated as a direct result of the skills learned in the NRP course.

Statistics are being kept by the staff at the District Hospital of Ilam to compare the outcomes of newborns before and after NRP training.

EFFECTIVE TEAM LEADERSHIP

CONTINUED FROM COVER

think independently, leaving some tasks uncompleted and some done multiple times."

Specific functions for the leader and team members must be delegated before the actual resuscitation begins. After selecting a leader, and before the actual resuscitation, the team should review member tasks and relevant NRP guidelines pertinent to a specific task, such as suctioning for meconium. It's important to note that, overall, the process must also include prompting and supporting each individual with positive feedback, providing objective input and allowing time for a debriefing period after the actual resuscitation is completed.

"People can shift and change roles, but when they step into the leadership position, they need to focus on overall priorities," Dr. Finer explained.

"Problems that arise in the absence of a leader involve losing awareness of the overall situation. That's the biggest single issue that we've identified. A good leader is experienced, decisive and positive, and possesses the ability to know when a specific action is needed, as well as when they personally need to perform this action."

Finer and Rich have identified the following six attributes of a well functioning team:

- Good Communication
- Adaptability
- Flexibility
- Coordination
- Initiative
- Team Spirit

"During resuscitation, someone saying 'good job' means a tremendous amount to the people on the team. We've

been able to observe this sort of thing and show people what positive reinforcement can do," Rich said.

Finer and Rich hope to one day develop what they call a "mini-module" based on their leadership training style that may be incorporated, by choice, into training.

"If you look at other forms of resuscitation, such as trauma resuscitation and adult cardiac arrest, there's always someone running those codes. That's the norm and expectation in these resuscitations, but it's not really the expectation in neonatal resuscitation," Rich said. "With a newborn, you are also faced with a variety of possible scenarios. We believe there are a lot of lessons to be learned from other resuscitation circumstances and are amazed at the applicability of these lessons to neonatal resuscitation."

NRP INITIATIVE IN CHINA: FREEDOM OF BREATH, FOUNTAIN OF LIFE

In July, the newly established China NRP Task Force launched a five-year Chinese neonatal resuscitation training initiative by hosting its first NRP training in the capital city of Beijing. The Chinese program, *"Freedom of Breath, Fountain of Life,"* aims to reduce infant mortality and morbidity rates in China through NRP education by providing neonatal resuscitation training in 20 Chinese provinces by 2006 and introducing it in all of China by 2009. This intensive, countrywide effort has the potential of saving more than 150,000 infants born annually in China.



Attendees at the *Freedom of Breath, Foundation of Life* Program.

According to the Chinese Maternity and Child Monitor Data of 2002, approximately 17 million babies are born every year in China, and the average infant mortality rate is documented as 29.2 per 1,000 live births. Establishing consistent neonatal resuscitation training throughout China, based on the NRP, is expected to help reduce the high number of infant deaths and other complications that may arise in delivery rooms across China.

"The Chinese program has adopted the goal that at least one person who is trained in neonatal resuscitation be present at every hospital birth in China," explained Susan Niermeyer, MD, FAAP, of the University of Colorado Health Sciences Center, Division of Neonatology, in Denver. "Training will be a massive mission in and of itself, and our greatest challenge will be implementing this program on the grassroots level, but we know it can be done." Chinese professionals have identified neonatologists, obstetricians, nurses, midwives, and other birth attendants as the primary group to receive neonatal resuscitation training.

Dr. Niermeyer, former cochair of the NRP Steering Committee, and William Keenan, MD, FAAP, Professor of Pediatrics and Director, Neonatal-Perinatal Medicine at St. Louis University, both represent the AAP on the China NRP Task Force. They also served as faculty for the Beijing instructor training with Maggie Vogt, RN, of St. Louis, MO and Shu-Chuan (Sue) Yang, MSN, of Santa Clara, CA.

The China NRP Task Force is comprised of the following organizations:

- American Academy of Pediatrics
- China Ministry of Health (MOH)
- National Center for Women and Children's Health (China CDC)
- Chinese Society of Perinatal Medicine
- Chinese Nursing Association
- Chinese Preventative Medicine Association
- Johnson and Johnson Pediatric Institute (JJPI)

Neonatal resuscitation training is not new to China. Since the 1990s, the NRP has been taught sporadically in Chinese provinces in larger cities and smaller villages, which has helped pave the way for this China NRP initiative. Among the larger efforts in recent years has been a Heart to Heart NRP training initiative in Sichuan Province, which was sponsored by the AAP International Section.

"There are instructors in China who are very skilled and very familiar with educational programs related to neonatal resuscitation," said Dr. Niermeyer. "In fact, these instructors largely formed the basis for the Chinese Task Force that is leading the NRP effort in China."

THIS FIRST NEONATAL RESUSCITATION
INSTRUCTOR TRAINING IN BEIJING IS LIKE
A PEBBLE DROPPED IN A POND...
RIPPLES OF INFLUENCE WILL TOUCH ALL
PARTS OF THE POND.

The NRP training held in Beijing occurred over a six-day period and involved more than 100 people, including hospital administrators, pediatricians, nurses, and midwives from 20 Chinese provinces. Each trainee received neonatal resuscitation equipment. The comprehensive set included a bulb syringe; suction device; meconium aspirator device; resuscitation bag with a pressure release valve and/or pressure manometer; oxygen tubing; two face masks (one neonatal pre-term and one newborn term); feeding tube; laryngoscope handle; laryngoscope – straight blade; two endotracheal tubes; tape; stylet; extra bulbs and batteries for laryngoscopes; neonatal intubation head; newborn mannequin; towels; stethoscope; and a 20mL syringe.

Additionally, all program materials were translated into Mandarin. These materials included the *Textbook of Neonatal Resuscitation, 4th Edition*, slides, NRP pocket cards, evaluation, and the video.



A new provincial instructor demonstrates intubation.

"This first neonatal resuscitation instructor training in Beijing is like a pebble dropped in a pond...ripples of influence will touch all parts of the pond," said Dr. Keenan at the conclusion of training in Beijing.

Dr. Niermeyer echoed Dr. Keenan's sentiments. "The initial training was immensely successful and especially rewarding because the newly trained faculty turned right around and became instructors the day after they completed their initial training," she said.

That's not all. By coincidence, Dr. Niermeyer was attending a conference in Xining Qinghai in Western China one month later when she stopped by a local hospital where four Xining Qinghai instructors were preparing a course for 30 students later that day.

"I saw them using the knowledge they learned just a month before, and I saw them using all of the equipment and resources they received when they participated in their initial training in Beijing," Dr. Niermeyer said. "It was really

fun to give them a hug and good wishes as they were planning on conducting their own training."

The China NRP Task Force is scheduled to meet again in Beijing in December 2004 to review the status of the program and to report on current training efforts. The group's next steps will include laying the groundwork for a 2006 Leadership Conference for provincial trainers.

The China NRP initiative is made possible through an unrestricted educational grant from the Johnson and Johnson Pediatric Institute (JJPI.)

For more information about China NRP, please contact Eileen Schoen in the AAP Division of Life Support Programs at eschoen@aap.org.



Course faculty and the new Chinese NRP instructors.

NRP IN PAKISTAN

An NRP Provider Course was conducted in Karachi, Pakistan on July 27, 2004. Abdur Rasheed, MD, a Hospital-based Instructor from Michigan, conducted the course at Civil Hospital, a 1000+ bed facility in Karachi. Eleven students participated in the course, each from a different hospital in Karachi and adjoining areas.



Course participants practicing endotracheal intubation.



Newly trained NRP instructors in Pakistan.

NRP IN EGYPT

Dr. Mohamed Osama Hussein recently submitted the following pictures from a course held in Egypt.



Newly trained NRP instructors in Egypt.



Dr. Osama Hussein demonstrating umbilical cord catheterization.

NRP IN PERU

Dr. Tania Gisella Paredes Quiliche and Dr. Walter Gomez Galiano submitted this picture from their NRP course held in Peru.



NRP course being taught in Peru.

NRP INSTRUCTORS ASSIST WITH MEGACODE STUDY

In the *Fall/Winter 2003* issue of the *Update*, an article on the ongoing NRP Megacode Validation Study was provided. This study has produced valuable feedback that will help to validate a more efficient checklist for the revised textbook, scheduled for release in 2006.

The NRP Steering Committee would like to recognize the efforts of members of the NRP workgroups who have assisted in the study efforts. We are grateful for their continued support of the NRP.

The following instructors staged, submitted, and filmed megacodes:

Brian Carter, MD, FAAP
Vanderbilt University Hospital
Nashville, TN

Mary Cataletto, MD, FAAP
Winthrop University Hospital
Mineola, NY

Kathy Allen, RN
University Health System
San Antonio, TX

Elizabeth Earle, RN
Memorial Hospitals Association
Modesto, CA

Jeanne Franza, APRN, RN, NNP
MidState Medical Center
Meriden, CT

Jan Gilbertson, RN
St Mary's Mercy Hospital
Enid, OK

Leann Legako, RNC, BSN
Comanche County
Memorial Hospital
Lawton, OK

Linda Mitchell Miller
The University of Oklahoma
Health Science Center
Norman, OK

Alyse Strahm
Covenant Healthcare
Saginaw, MI

Suzanne Wyatt, MSN
Norman Regional Hospital
Norman, OK

The following instructors volunteered to review megacode tapes:

Brian Carter, MD, FAAP
Vanderbilt University Hospital
Nashville, TN

Po-Yin Cheung, MD, PhD
NICU Royal Alexandra Hospital
Edmonton, Alberta, Canada

Colleen Ann Malloy, MD
Loyola University Medical Center
Maywood, IL

Kathleen Allen, MSN, NNP
Mid-Tennessee Neonatology
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Chicago, IL

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Bloomington Hospital
Bloomington, IN

BRAZIL'S FIRST INTERNATIONAL SYMPOSIUM – A HUGE SUCCESS

The Brazilian Pediatric Society initiated the NRP in 1994 with the mission of decreasing neonatal morbidity and mortality through training of health professionals who care for newly born infants. Since initiation, the society has trained 388 instructors who have conducted 1,123 courses, and trained 24,153 health professionals throughout the country.



(L-R): José Orleans da Costa, MD, William Keenan, MD, FAAP, Ruth Guinsburg, MD, and Maria Fernanda B. de Almeida, MD.

Since 1996, NRP implementation decisions are made by a Brazilian NRP Steering Committee, whose chair is nominated by the President of the Brazilian Pediatric Society. Brazilian health professionals participate in an 8-hour resuscitation training course. Learners utilize the American Academy of Pediatrics (AAP) & American Heart Association (AHA) authorized translation of the *Textbook of Neonatal Resuscitation* (2nd, 3rd, and 4th editions) in Portuguese, which was accomplished under the authority of the Federal University of São Paulo, with rights for the use of materials given to the Brazilian Pediatric Society.

After a decade of successful implementation, the Brazilian NRP Steering Committee decided that time had come to discuss national neonatal resuscitation controversies and to invite AAP NRP experts to network with Brazilian instructors. To this end, the 1st *International Symposium on Neonatal Resuscitation* was held March 18-20, 2004, in Belo Horizonte, in the State

of Minas Gerais. Seven Brazilian and three international speakers: William Keenan, MD, FAAP, and Jeffrey Perlman, MB, ChB, FAAP from USA; and Edgardo Szyld, MD from Argentina, participated. The main topics discussed were: NRP impact worldwide; ethical controversies in neonatal resuscitation; decreasing pulmonary insult in the delivery room; prevention of meconium aspiration syndrome; hypoxic-ischemic encephalopathy (early imaging of neurologic insults, hypothermia and perspectives on neuroprotective strategies); research regarding neonatal resuscitation in Brazil; and long-term follow-up of the resuscitated infant.

482 participants attended the symposium, including 469 pediatricians. 172 of the attendees were instructors (44% of all active instructors in 2004) from 22 different states of Brazil.

The Brazilian NRP is a volunteer effort of pediatricians that must overcome sparse financial resources to decrease neonatal mortality. Improvement of the scientific knowledge of those health professionals who teach neonatal resuscitation is one of the primary goals of the Brazilian NRP. The success of this symposium and the enthusiasm that followed are the result of significant efforts by the instructors, coordinators, and the Brazilian Pediatric Society.

Ruth Guinsburg, MD, FAAP & Maria Fernanda Branco de Almeida, MD, FAAP Members, Brazilian NRP Steering Committee



(L-R): Jeffrey Perlman, MB, ChB, FAAP, José Maria A. Lopes, MD, Cléa R. Leone, MD, Edgardo Szyld, MD, and Milton H. Miyoshi, MD.

AN UPDATE ON THE LMA WORKSHEET

CONTINUED FROM PAGE 2

In terms of special LMA training, currently there is no data to establish a learning curve or required level of training, Dr. Weiner explained. However, data from operating room studies and adult resuscitation studies suggest that learners are able to successfully insert an LMA with minimal practice. For example, a study conducted by Trevisanuto (*Resuscitation*, 2004) reported an experience in Italy with the LMA in the delivery room after physicians had placed the LMA in 10 patients in the operating room. The 10 physicians who participated in the study had a 99% success rate with the LMA during neonatal resuscitation.

The LMA was first developed in 1981 by Archie Brain, MD, an anesthesiologist in Great Britain. Dr. Brain made plaster casts of cadaver throats in search of a better way to quickly deliver air to a person's airway. When the device is inserted, it slides down the throat until the tip of the mask reaches the opening of the esophagus.

The LMA is a disposable tube connected to a flexible, elliptical mask with a soft, inflatable rim, explained Dr. Weiner. "The flattened mask is inserted orally and guided along the

hard palate using your index finger without laryngoscopy. Once the mask is inserted, the cuff is inflated with a small amount of air. It looks like a life raft connected to a tube when it's inflated," Dr. Weiner said. "The inflated mask sits over the laryngeal opening while the cuff conforms to the contours of the hypopharynx occluding the esophagus with a low-pressure seal. It can be inserted quickly and easily, in about 10 seconds on average, and doesn't require using any instruments. The LMA directs the air right where you want it – into the airway – without the risk of damaging vocal cords or other delicate structures."

The LMA may offer a promising alternative in some circumstances because endotracheal intubation can be a difficult procedure, and if it's not done on a regular basis, it's a skill that can deteriorate. Additionally, it may be possible to incorporate the LMA technique into training exercises in community hospitals where intubations may not occur as frequently as in larger, regional hospital settings. Emergency medical technicians (EMTs), paramedics, firefighters, nurses and other emergency personnel may also be trained to use the LMA.

The LMA, however, cannot completely replace the need for endotracheal intubation. It has not been adequately studied in the setting of either meconium-stained amniotic fluid, chest compressions, or for the delivery of emergency intra-tracheal medications.

"Meconium cannot be suctioned through the LMA, and there are insufficient data on the use of the LMA during resuscitation for babies that require chest compressions and insufficient data to support the ability to instill intratracheal medications," Dr. Weiner said. "The LMA is generally considered a short term airway, although there are several case reports of the LMA being used as an airway for neonates for several days with a mechanical ventilator."

"I believe that it's necessary to carry out multi-center studies separating term infants from low birth infants during neonatal resuscitation and comparing LMA vs. ETT in newborns with apnea (and not responding to tactile stimulation), heart frequency less than 100 bpm, and cyanosis without meconium-stained amniotic fluid before the BMV is initiated," added Dr. Udaeta.

FOLLOW-UP ON NRP EFFORTS IN IRAQ

In the last issue of the *Update*, we shared the story of Lt. Col. Kelly Murray as she worked to establish an NRP program while serving in Iraq.

One of the students trained in that first course, Dr. Maysoon M. Jabir, recently coordinated and conducted her first course.

The Iraq Ministry of Health (MOH) is developing a program to improve perinatal mortality and morbidity. The NRP course might be included in this curriculum.

For more information about international NRP initiatives, contact AAP Life Support staff at lifesupport@aap.org.



NRP course participants in Iraq.

NRP DATABASE TIPS – ADVERTISING AN UPCOMING COURSE

To help all instructors become more familiar with the features of the NRP Online Database, we have added a recurring feature to the *Update* that highlights some of its conveniences. In the last *Update*, we discussed the information presented on the Information Summary page. In this issue, we will discuss how to advertise an upcoming course online.

While instructors are not required to publicize a course online, if the course is open to other health care providers, we encourage instructors to do so. This will allow people who are interested in taking a course to find one more easily. It also makes roster submission easy for the instructor because a posted course will automatically be shown on the roster list. Most of the information has already been entered, so when the course is completed the instructor can add the students' names and the names of any assisting instructors and then submit the roster.

To advertise a course, an instructor must first log onto the NRP online database. There will be three headings listed across the top, the first one being "course list." This is where an instructor can post a course. After clicking on the heading, an instructor can see the list of courses, if any, they have posted. If there are none listed, the instructor can

click on the "Create a Course" button. The instructor can then fill in all the information about the course and click "Post to the Web." The course will now be displayed on the course list.

After a course has been posted to the web, anyone looking for an NRP course can find those that have been posted. They can view the information about the course and e-mail the instructor to sign up for the course.

After the course is held, the instructor can easily submit the roster. As soon as a course is posted, it will also appear on the instructor's roster list. The instructor can click on "roster list" to display it and select the roster by clicking the radio button to its left. The roster status will be shown as "pending." Then clicking the "Edit Roster" button will bring up the roster for the course that was posted. Most of the information has already been entered, so the instructor will just need to add the assisting instructors and students, and the roster is ready to submit.

If you have any suggestions for a database feature you would like to see explained in a future article, please contact Life Support staff at lifesupport@aap.org.

The screenshot shows the NRP Online Database interface in a Microsoft Internet Explorer browser window. The page title is "Neonatal Resuscitation Program" and it is part of the American Academy of Pediatrics website. The navigation menu includes "Instructor Only", "course list", "roster list", and "update info". The "course list" link is highlighted. Below the navigation menu, there are three buttons: "Find An Instructor", "Find A Course", and "Find A Hospital". The main content area is titled "Advertise An Upcoming Course - Kristy Goddyn". It features a table with the following data:

Course Name	Start Date	Institute	Lessons	Course Status
<input type="radio"/> Provider	10/4/2004	LUTHERAN GENERAL HOSPITAL	1-4	submitted 09/14/2004
<input type="checkbox"/> Provider Renewal	10/14/2004	ST ALEXIUS MEDICAL CENTER	1-4,5,6,7	submitted 09/14/2004

Below the table are four buttons: "New Course", "Edit Course", "Delete Course", and "Back". Callout boxes provide instructions for various actions:

- "Click here first to show course list page" points to the "course list" link in the navigation menu.
- "Click here to view and submit the roster for the posted course" points to the "roster list" link in the navigation menu.
- "Click here to post a new course" points to the "New Course" button.
- "Click here to make changes to a posted course" points to the "Edit Course" button.
- "List of courses that have been posted" points to the table of courses.

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2005 NRP RESEARCH GRANT AND YOUNG INVESTIGATOR AWARD PROGRAM

The American Academy of Pediatrics (AAP) Neonatal Resuscitation Program (NRP) Steering Committee and the Section on Perinatal Pediatrics are pleased to announce the upcoming availability of the 2005 Neonatal Resuscitation Program Resuscitation Research Grant and the Young Investigator Award. The awards are designed to support basic science, clinical, or epidemiological research pertaining to the broad area of neonatal resuscitation.

Physicians in training or individuals within four years of completing fellowship training are eligible to apply for up to \$10,000 through the **NRP Young Investigator Award**. Any health care professional with an interest in neonatal resuscitation can submit a proposal for up to \$25,000 through the **NRP Research Grant Program**.

Grants are currently available to fund research projects in the United States and Canada. The NRP Steering Committee is particularly interested in the following research and pilot programs:

- The effect of NRP on neonatal outcomes
- Basic science research
- Higher level of evidence for existing guideline recommendations

The NRP Research Grant and Young Investigator Award Program Guidelines and Intent for Application will be available in January 2005. To obtain a copy of the guidelines, a list of potential research topics, or a list of previously funded studies, please contact the Life Support staff at 800/433-9016 ext. 4798 or go to the NRP website at www.aap.org/nrp and select the "Science" tab.