



President's Message

Most of us have never experienced so much financial change, so fast. As I write, the market continues to zigzag and send messages of confusion and concern. At our surgery centers/hospitals /offices we are carefully addressing these economic challenges. On the home front each of us is looking closely our spending patterns. I want to share my perspective on VSPAN's strengths, actions and opportunities as we move forward in 2009 and beyond.

Strengths. During its 25 years of existence VSPAN has withstood the financial mismanagement crisis of ASPAN, waxing and waning membership, and dwindling interest in serving as board members and even lost of a president in midterm. Yet, we have solid membership numbers and an education plan including 4 full day seminars around the state as well as annual VSPAN Conference in Staunton, VA this year.

VSPAN has always practiced conservative fiscal stewardship of association resources, many of which have been built through generous giving. Our past sponsors financial contributions and ongoing voluntary gifts of time and talent by the board and members in support of our primary goal in providing educational

opportunities has allowed us to remain financially stable.

Actions. We are taking a hard look at every expense to determine needs verses wants. First and foremost we must ensure that our educational programs will continue. Second we want to move forward with our commitment of scholarships so that our members receive continued support and that resources are available for new requests that we anticipate.

Opportunities. We have already laid the ground work to "Go Green" which is not only is the right thing to do for our environment but is financially advantageous. This has allowed us to move funds to our scholarship and education programs. We will continue to decrease our use of paper, mailings and increasing our use of conference calls, e-mail, postings on the website.

I am in awe of the diversity of experience within our membership. If we share our strengths- we will all win. I encourage each of you to collaborate with colleagues. Share you ideas, learn what works for others and share your successes.

Finally, our greatest opportunity is the education of nurses new to our specialty and to expand our own knowledge as well. When the winds of

change intensify I am confident in our organization's ability to weather the storm.

Thank you for being a part of our great specialty in providing excellent care in all phases of perianesthesia nursing. We will continue to communicate with you and should you have questions or thoughts, as always, do not hesitate to reach out.

*Deirdre Cronin, BSN, RN,
CPAN, President*

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PANAW

VAGUS NERVE STIMULATOR FOR EPILEPSY

We the Perianesthesia Nurses of Virginia and all over the country celebrated Perianesthesia Nurse Awareness Week the week of February 2nd thru 8th. The week for us in Roanoke started off with Laura Boitnott & Sonny Mitchell meeting with Roanoke Mayor David Bower to receive a proclamation recognizing Perianesthesia Nurse Awareness Week. We had a great time meeting the mayor; he was a very gracious host.

There were week long celebrations including games, door prizes, and luncheons. The week is a time for true reflection on our chosen profession, to question ourselves - is this just a job for me or is this my true profession? Perhaps it stirred some of you to think about taking the next step of becoming CAPA OR CPAN certified and or becoming more involved in our state component VSPAN by serving on committees or running for office. I have found my involvement in VSPAN to be very rewarding both personally and professionally. Certification is verification by a licensed Certification Board that a perianesthesia nurse excels in his/her chosen specialty. I hope all of you enjoyed PANAW and that you will give much consideration to certification.

Laura Boitnott RN III, CAPA

Vagus nerve stimulation has been approved for treating patients over the age of 12 who have partial seizures and have not responded well to epileptic medications and who are not candidates for epilepsy surgery. VNS is often used in combination with medications and can reduce the risk of complications from severe repeated seizures.

Vagus nerve stimulation involves implanting a pacemaker-like device that generates pulses of electricity to stimulate the vagus nerve. The vagus nerve serves many organs and structures, including the larynx, lungs, heart and gastrointestinal tract. Initial research indicates that the benefits of VNS increase over time. In medical studies an average of 3 out of 10 people had better control of their seizures within 3 months. After 18 months, 30% had one half the number of seizures and 20% had one quarter of the seizures they had before.

For patients who can sense when they are about to have a seizure, turning on the VNS using a hand held magnet can often prevent a seizure.

The VNS is implanted under general anesthesia. The stimulator device, approximately the size of a silver dollar, is surgically placed under the skin in the upper part of the chest. A connecting wire is tunneled under the skin from the stimulator to an electrode that is attached to the vagus nerve. This is accessible via a small incision in the neck.

After it is implanted, the stimulator is programmed using a computer to generate pulses of electricity at regular intervals, based on the patient's tolerance. For example, it may stimulate the nerve for 30 seconds every 5 minutes. The settings are adjustable and programming the device can be done in the physician's office. The patient is given a hand -held magnet, which can be held over the stimulator to generate a burst of electrical current that can stop a seizure in progress or reduce the severity of it. Additional surgeries may be required for any damage to the device or leads and for battery replacement.

Doctors are not exactly sure how or why the VNS prevents seizures and it's long term effects have not been studied.

The risks of VNS include injury to the vagus nerve or nearby blood vessels, the carotid artery and the jugular vein. There are also risks that can be associated with any surgery or general anesthetic, such as infection, bleeding or an untoward reaction to the anesthesia.



Laura Boitnott and Sonny Mitchell with Roanoke Mayor David Bower.

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PEDIATRIC ANESTHESIA AND PACU NURSING

There are many differences between our Pediatric patient population and our Adult patient population. We need to always remember that these small treasures are not small adults. A variety of organ system differences in these patients effect our Anesthetic management. Pediatric patients metabolize drugs differently and the management of the Pediatric airway can present anatomic differences that need to be taken into account.

Here are some definitions of age groups that may be helpful;

- Preterm infants are less than 37 weeks gestation
- Term infant 38-42 weeks gestation
- Post term infant greater than 42 weeks
- Newborn up to 24 hours old
- Neonate 1-30 days old
- Infant 1-14 months old
- Child 14 months to puberty (12-13 y.o.)

The organ system differences that effect our Pediatric management the most are the cardiac, pulmonary, renal and intracellular fluid volumes, and the hepatic systems. Planning for the difference in Pediatric airway anatomy will contribute to our plan as well.

When evaluating a patient preoperatively we look at the patients post conceptual age. PCA is the weeks of gestation + weeks of life. Even after the first year I will always question if a child was born on time and if the child went home from the

hospital when the mother was discharged. A child born before 37 weeks of gestation is considered preterm. Most organ systems can be affected by prematurity.

NPO status is another concern. Many of our patients are still breast or bottle feeding. NPO guideline state that a child can be given clear liquids up to 2 hours prior to surgery, breast milk 4 hours prior to surgery, and while food or cows milk 6 hours prior to surgery.

The Cardiovascular system

Children have a higher cardiac output and oxygen consumption per kilogram than an adult. Infants are heart rate dependant for their cardiac output since they have a fixed stroke volume (stiff ventricle).

They may responds to hypoxia with bradycardia and a decrease in CO. This can make resuscitation more difficult than an adult. Normal vital signs in children. include higher heart rates and lower blood pressures.

Many parameters are higher for the infant than for the adult. Heart rate is higher, CO is higher, cardiac index (infants high ratio of surface area to body weight) is constant. Additionally, O2 consumption depends heavily on temperature. A 10-13% increase in consumption occurs with every one degree increase in temperature.

Some normal cardiovascular values:

Age	RR	HR	SBP	DBP
Neonate	40	140	65	40
12 months	30	120	95	65

3 years	25	100	100	70
12 years	20	80	110	60

The Pulmonary System

Children have a higher minute volume and respiratory rate than adults but tidal volume and dead space are equal per kilo to adults.

Children desaturate more quickly because they utilize O2 more per kilo and they lose a higher percentage of their FRC under general anesthesia than adults. They have small alveoli and a compliant chest wall and these factors contribute to a decrease in FRC and increased atelectasis.

Respiratory control mechanisms are not fully developed until 42-44 weeks post-conception. Again, a known history of prematurity will help manage these patients.

Inhalation induction in children is more rapid than in adults due to the rapid wash in of anesthetic agent to the alveoli in comparison to adults. Children have lower blood gas solubility and less gas is dissolved into the tissues as well. CO is preferential to pulmonary blood flow. Some comparisons to keep in mind:

Variable	Infant	adult
Resp. rate	30-50	12-16
TV ml/kg	6-8	7
Dead Space ml/kg	2-2.5	2.2

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ASPAN National Conference

It's almost time to head for Washington D.C. and ASPAN's 28th National Conference at the Gaylord National Resort and Convention Center. Do you have your "I must visit these historical sites" list ready? The Development team wanted to take this opportunity to let every component, and every single individual know about all of the Development activities.

NATIONAL CONFERENCE SUPPORT – First of all, as a component you are more than welcome to participate in the sponsorship of the National Conference through the donation of any amount of money. You may designate monies to a specific project (i.e. highlighters, pocket planners, etc.) or just indicate in a letter or on the check that it is a donation for national conference support. All components will be acknowledged for conference support regardless of the amount donated. Send conference donations to the attention of Rob Spina, Marketing & Exhibits Manager.

ASPAN DREAM WALK – Judy Evans from Alaska has been the individual raising the most monies for the Dream Walk for the last three years!!! She puts out her "walker pledge" sheet early and actually approaches each and every anesthesiologist at her hospital and asks them to support her walk. I am going to throw out a good old Washington D.C. challenge

and say "Who's going to topple Judy?" Let's make this a DREAM WALK of historical proportions!!

SILENT AUCTION – The silent auction has always been a huge success and we would definitely like to keep up the tradition! ASPAN Development will have tables set up and ready, and once again, Evelyn Medycki and Mary Betz will be coordinating this event. They will be more than ready to accept your donations. ASPAN is also conducting an online silent auction and will accept donations before National Conference. If you would like your item placed in the online silent auction please contact Rob Spina at the National Office.

HHS – Last, but certainly not least, we look forward to the Hail, Honor and Salute portion of the ASPAN Development Luncheon. This is YOUR chance to remember someone or "many someones" who have played a part in your nursing career and or your life. This year's Development Luncheon will take place while cruising the Potomac, so start thinking about who you would like to Hail, Honor or Salute!

ASPAN Development once again awarded multiple educational scholarships this last year and supports all of the educational efforts of ASPAN. We look forward to continuing this support and because of each and every one of you, we are sure this will happen.

Dolly Ireland, MSN, RN, CAPA, CPN, Director of Development - ASPAN

**ASPAN
National
Conference
2009**

***We can't pull it off
without you!***

**VOLUNTEERS are
critical to
National Conference
success**

**Please consider
volunteering your
time and signing up
as a Host/Hostess
or Moderator.**

**Please go to
www.aspan.org**

ABPANC News

A B P A N C N E W S FLASH! HELP US SPREAD THE WORD! The new online application process for registering for the Spring CPAN[®] and CAPA[®] certification examinations is up and running! The registration window is open through March 9th. Examinations will be administered by computer from April 6th through May 16th at Prometric Test Centers.

For complete information visit the ABPANC website at www.cpancapa.org and click the *Certification* link on the home page. Follow the instructions for viewing/downloading the newly revised *Candidate Handbook and Appendices* as well as registering for an examination online.

While candidates may still apply by mail using a scannable paper application and Appendix E (Verification of RN Licensure and Clinical Practice Form), we highly encourage them to use the online application - it's easier, faster, and has many benefits! If applying by mail, refer to the *Candidate Handbook* and Appendix F for submission postmark deadline dates, which are earlier than those for applying online.

A special paper/pencil version of the CPAN[®] and CAPA[®] examinations will be administered at the 2009 ASPAN National Conference on April 19th. Candidates registering for this special

administration must do so by mailing in a scannable paper application and Appendix E (Verification of RN Licensure and Clinical Practice Form) postmarked no later than February 17th.

ABPANC looks forward to your assistance in spreading the word about the new online application process and computer-based testing! As more and more perianesthesia nurses become CPAN[®] and/or CAPA[®] certified, our vision becomes a reality!

Recognizing and respecting the unequalled excellence in the mark of the CPAN[®] and CAPA[®] credential, perianesthesia nurses will seek it, managers will require it, employers will support it, and the public will demand it!

*Bonnie Niebuhr, MS, RN, CAE
Chief Executive Officer
ABPANC*

Welcome New VSPAN Members

Due to ASPAN's transition to a new membership program we do not have a record of new members at this time. We will recognize new members in the next issue of the Vital Times.

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VSPAN Scholarship

In this day and times of economic recession it is hard to believe that there is actually free dollars available from VSPAN. VSPAN in support of education for it's members has initiated a scholarship program with the opportunity of obtaining funds for successful completion of a CPAN and a CAPA certification exam. In addition we are pleased to offer paid attendance for an eligible RN and one student nurse to state conference in the fall of 2009. We look at this as a great opportunity for you the member and our goal is to grow this program evaluating it on an annual basis.

The RN candidate must:

- Be a registered nurse with a current license
- Be an "Active" category member of ASPAN and a component for the past two full years prior to application
- Be employed in any phase of the Perianesthesia setting (PACU, ASU, Preanesthesia, management, research, education).
- VSPAN Conference Attendance scholarship applicant: may not be a current member of the Board of Directors of VSPAN.

*Winners are expected to write a short report of their experience at state conference for submission to the VSPAN Board of Directors and publication in The Vital Times.

The Student nurse must:

- Be an enrolled student in an RN program in Virginia
- Selection:**
- Application may be submitted

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VITAL TIMES

PEDIATRIC ANESTHESIA AND PACU NURSING - CONTINUED FROM PAGE 3

Alveolar Ventilation	100-150	60
FRC	27-30	30
O ₂ Consumption	6-8	3

The Hepatic System

Increased hepatic metabolic activity in the children compared to adults this begins at about three months of age. Hepatic activity peaks at 2-3 years and then they start to decline and reach adult values by puberty.

Renal System

In the neonatal stage of life, the ability to handle a water load is reduced and the neonate may be unable to handle excessive IV fluids by increasing water excretion.

In infants and children hyponatremia may occur more frequently.

Peak renal capacity is reached at 2-3 years of age after which it decreases at the rate of 2.5 percent per year.

Factors that contribute to increase in GFR in children are an increased CO, changes in renal vascular resistance, and changes in glomeruli. Glomeruli are mature by 5-6 months of age.

What does this mean to you? Higher doses of water soluble drugs are needed due to the greater volume of distribution, however, due to the immaturity of clearance and metabolism in the neonate the dose given is equal per kilo to the dose used in adults.

Anatomy and the Respiratory system in Children

In infants and children the distribution of pulmonary blood flow is more even than in adults. The effect of gravity is less, therefore, the V/Q ratio is not equal to that of the adults.

The diaphragmatic and intercostals muscles fatigue more easily and the diameter of the infant and pediatric airway changes significantly when exposed to distending or compressing forces.

Upper airway obstruction stridor is heard during inspiration, tracheal obstruction leads to inspiratory and expiratory wheezing, and lower airway obstruction such as asthma or bronchitis presents as expiratory wheezing.

Anatomic differences to keep in mind include:

- Narrow nares
- Large tongue
- High glottis
- Slanting vocal cords
- Narrow cricoids ring
- Large occiput

The narrowest portion of the airway in the adult is between the vocal cords but in the pediatric patient it's the cricoid region.

1 mm edema on the cross sectional area at the level of the cricoid ring in a pediatric airway can decrease the opening 75% compared to the adult airway that will decrease only 19%.

Tonsils and adenoids grow markedly during childhood. They are their largest from age 4-7 and then they gradually recede. They

can make visualization of the larynx more difficult.

Commonly used medications and their dosing in Pediatrics:

Anti-emetics
Zofran (ondansetron) 0.1 mg /kg q 8 hours

Reglan (metoclopramide) 0.1 mg kg q 8 hours

Analgesics:
Fentanyl 0.25- 0.5 mcg/kg/dose IV. for pain (watch for narcosis, resp. depression)

Morphine 0.1-0.2 mg/kg IV. (watch for narcosis, resp. depression)

Acetaminophen 10-15 mg/kg PO and 45 mg/kg PR q 4-6 hours
Max dose is 2.6 grams in 24 hours.

Codeine 0.5-1.0 mg/kg PO or IM, Recommended maximum dose is 30 mg.

Toradol 0.5 mg/kg max 15 mg, not to be given to anyone under 6 mos.

Resuscitative drugs:
Atropine 20-40 mcg/kg IV. For antagonism of the bradycardia caused by Succinylcholine use 20 mcg/kg in conjunction with the relaxant.

Epinephrine 10 mcg/kg IV q 3-5 minutes prn. As a nebulized solution 0.5 ml of 2.25% soln. in 3 cc NS q 4 hours prn brochospasm.

Labetalol 0.25-0.5 mg/kg prn
Narcan 1-10 mcg/kg IV or sq q2-3 min prn.

Dr. Cindy Portner Director Pediatric Anesthesia Fair Oaks Anesthesia Associates.

*VAGUS NERVE - Continued
from Page 2*

The most common side effects are hoarseness, coughing, tingling in the neck, shortness of breath or difficulty swallowing. These usually only occur while the nerve is being stimulated. These side effects are usually mild and tend to decrease over time.

What should the PACU nurse watch for? Bleeding that may develop into a hematoma causing airway restriction. Swelling at the surgical site and tracheal deviation may indicate this, if it is severe.

Ice chips PO tend to help soothe the coughing and any oxygen administered should be humidified if possible. Elevating the patient's head is recommended for comfort.

Local anesthetic is usually injected at both incision sites and it is usually not very painful for the patient post-operatively. However, patients may complain of a "dry throat" which can be alleviated with ice chips. Most patients are discharged to home as per usual outpatient protocols.

1. Schacter SC (2002) Vagus Nerve Stimulation Therapy Summary: Five Years after FDA approval. Neurology, 59 (6, Suppl 4) S15-S20

2. Buchalter JR (2003) Therapeutics in Pediatric Epilepsy: Epilepsy surgery and vagus nerve stimulation. MAYO Clinic Proceedings, 78 (3):371-378

3. WebMD 2005-2007 Vagus Nerve Stimulation for Epilepsy
*Evelyn Brooks RN, CPAN BSHS
SW District Education Chair
VSPAN*

*Scholarship - Continued
from Page 5*

from Oct 1st to July 1st of each year

• A VSPAN Selection Committee will review and evaluate the applications and select scholarship recipients using an objective point system by July 31st of each year

Please take advantage of this exciting opportunity. For additional information on the application process please reference the VSPAN website at Virginiaspan@aol.com.

*Brenda Gilliam RN BA,
CAPA VSPAN Educational
Chair*

Newsletter Articles

**Newsletter Articles Due by
May 15, 2009**

Please e-mail all articles for the next issue of Vital Times to VirginiaSPAN@aol.com.

Submission Guidelines:

- Articles must be typed.
- The author's name, title, institution, and work phone or e-mail address must be included for verification.
- References should be listed in the order they appear.
- Topics can range from patient assessment, nursing care, pharmacology reviews, case studies, research, management topics or a review of an educational offering.

*2008—2009
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The Society exists to promote quality care for patients and their families, by encouraging professional education, development of standards, research, certification, and specialization in all phases of perianesthesia nursing, and by providing a forum for exchange of ideas between health care providers involved in perianesthesia care.