Both asthma and vocal cord dysfunction (VCD) can make breathing difficult. Signs and symptoms of either condition can include dyspnea, coughing, noisy breathing (stridor or wheezing), throat or chest tightness and hoarseness. Some children with asthma also develop VCD.

Vocal cord dysfunction is the abnormal and involuntary paradoxical closing of the vocal cords during inspiration. As with asthma, exposure to airway irritants, an upper respiratory viral infection, gastro esophageal reflux (GERD) or exercising may trigger VCD. Although asthma and VCD may have similar triggers and symptoms, the treatment approach for VCD is very different than treatments used to manage and control asthma. This makes proper diagnosis essential.

You may suspect VCD rather than asthma if:
• During flares your patient complains that it’s harder to breathe in than breathe out
• Asthma medications don’t seem to ease the symptoms
• Results of routine breathing (pulmonary function) tests for asthma are normal
• Your patient’s symptoms are not due to a respiratory infection alone, something in his/her airways or another health problem

Diagnosing VCD can be challenging! This may lead to further tests such as spirometry with inspiratory and expiratory flow volume loops, an exercise challenge or the direct observation of vocal cord closure during (continued on next page)
Welcome to our first edition of BRIDGES! Our journey together begins....

I’m sure you are wondering, why another newsletter?

Recently I was asked to chair the marketing committee for CSG. At the time, I felt like nothing in my skill set suggested that I was trained to help market a product, but I knew what grabbed me and what I would look for and expect from a practical market.

Since I joined CSG’s Specialty Group (CSG), CHKD and TIVMS fourteen years ago, I have often worried about the disconnect between the medical school, the hospital and the physicians. I am reminded of this gap each time I think of my beloved friend Dr. Dunn Lewis, who somehow was able to juggle the interests of each entity and keep everyone focused on what pulls us together.

When I was asked to create a newsletter for CSG, I knew I wanted it to be something that could bridge the gaps in perception, knowledge, and communication among those groups. In these times of global threats, ever changing standards of care, and a multitude of health care access and utilization issues, a small newsletter may not have world impact. However, it is up to the physician to choose the method of delivery and educate the family. A spacer with or without a mask is an excellent option for aerosol delivery at home, the office, the emergency room and the hospital as evidence-based literature has demonstrated.

Multiple studies have demonstrated that albuterol can be delivered effectively via spacer. Castro-Rodriguez et al at J Pediatr 2004 found six prospective randomized controlled trials looking at albuterol delivery in the emergency department. Meta-analysis demonstrated a decreased admission rate in moderate to severe exacerbations and improved clinical symptoms in children under 5 years of age. These studies did demonstrate a wide range of four to ten puffs of albuterol MDI to be equivalent to 2.5mg nebulized albuterol. The wide range is due to many factors including the type of holding chamber and the delivery technique. A validated anti-static holding chamber has the highest deposition of particles.

Regarding inhaled corticosteroids, there are no studies directly comparing the delivery of beclomethasone via nebulizer to fluticasone via meter dose inhaler. In randomized control trials, fluticasone has been demonstrated to be safe and efficacious in preschool children (Qasim F et al J Pediatr 2006); and fluticasone has improved pulmonary function and symptoms in infants with recurrent wheeze (Mallo et al Allergic Immunopathol 2009).

Based on the above studies, spacer treatment can occur in approximately 10 minutes per treatment, while the MDI uses micrograms; yet the spacer is also more efficient, more effective, and less expensive. The neb-gram, while the MDI uses equal size particles or takes approximately 10 minutes per treatment, the spacer treatment can occur in three minutes.

The nebulizer is less portable than the spacer, requires electricity and is more difficult to clean. The spacer can be cleaned with soap and water. Regarding total costs, the nebulizer is more expensive. However, insurance companies often cover the nebulizer and require higher co-pays for spacer and MDIs.

Our CHKD pulmonology practice recommends spacer with MDI in appropriate patients of all ages for the reasons indicated above. It would be our pleasure to work with you and your patients to provide them with and teach them appropriate spacer technique. Our practice follows Chest guidelines which include sharing inhaler good seal with or without mask, puff, breathe slowly in and hold for 10 seconds or six breaths if using a mask, followed by one minute between puffs.
### CSG Places & New Faces

**Lauren Smith, MD**
**Allergy/Immunology**
“My current hobbies include ‘lactation consultant’ to my young son, playing ‘Thomas the Tank Engine,’ and telling my Newfoundland puppy that he can’t take things off of the dining room table.”

**Ayanna Butler-Cephas, MD**
**Endocrinology**
“I enjoy playing with my 3 year old daughter and working out. I’m excited about living in Virginia and having my second child here in March 2015.”

**Dayna Perkowski, MD**
**Neurology**
“My hobby (and fallback career) is creating professional-quality cakes for my sons’ birthdays; at least that engineering degree wasn’t a complete waste!”

**Rachel Armentrout, MD**
**Neonatal-Perinatal Med.**
“My interests include hiking, international travel (most recently to Rome) and finally living in the same city as my husband.”

**Rosemarie Santos, MD**
**Neonatal-Perinatal Med.**
“In 2014, a/f 11 years together, I married my med-school sweetheart. I love cooking, traveling and spending time with my family.”

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**Many CSG Divisions routinely see new patients within 2 weeks of referral, however all will work with you to get urgent patients in. For referral information please go to the desired specialty at:**

[www.csgdocs.com/specialties](http://www.csgdocs.com/specialties)

**Click on the “Referral Information” link. There you will find information that will help facilitate a successful referral for your patient.**
Newborn Screening in CF

by Cynthia Epstein, MD

Cystic Fibrosis (CF) newborn screening began in Virginia in March 2006. The importance of early and accurate newborn screening for CF has been well established. There have been several convincing studies recently including two randomized control trials, two cohort studies, and data from the two registries in the United States and UK. The studies looked at growth and nutrition, survival, healthcare utilization, lung function, and quality of life. The data is overwhelmingly supportive for improved care and better long-term outcomes the sooner CF can be diagnosed. Newborn screening prevents early malnutrition and vitamin deficiency, reduces early pulmonary complications, and decreases multiple co-morbidities that occur with delayed diagnosis.

Newborn screening for CF involves the testing of IRT (Immunoreactive Trypsinogen) and DNA testing. If the IRT is elevated and the DNA testing is positive for a mutation or there are two mutations, a sweat chloride test is performed to confirm the diagnosis. If the sweat chloride test is 60 mmol/liter or higher, then this is a "false positive" and no further testing is required. If the sweat chloride test is between 30-59 mmol/liter, then another sweat chloride test is performed at 6 months of age. If the infant has one mutation and a sweat chloride test of less than 40 mmol/liter, then another genetic testing is required. If the sweat chloride test is below 30 mmol/liter and the infant has two mutations, then further screening is performed looking for additional mutations. These patients need to be followed by the CF Center.

Children with chronic cough should be evaluated for the specific cough etiology and if possible, treating the underlying disorder should treat the cough. OTC cough medications are to be avoided. Children with chronic cough should be evaluated for specific signs and symptoms pointing toward an underlying disease (such as failure to thrive or clubbing with cystic fibrosis). In some children, the quality of cough may be helpful, as with a brassy cough suggesting tracheomalacia. Any associated exacerbating factors should also be evaluated. Children with a history of a chronic cough should undergo a CXR and spirometry (if 4-6 years+). If spirometry shows reversible airway obstruction, the cough may be treated for asthma. However, evidence shows that in most children isolated cough does not represent asthma. If the child does not improve with asthma therapy, the CXR is abnormal or spirometry does not show reversible airway obstruction, consider input from a pediatric pulmonologist. If there is no improvement from either trial, referral to a pediatric pulmonologist would be suggested.

Treatment of non-specific cough includes parental education and addressing their concerns and expectations regarding their child's chronic cough. This will be more helpful than any non-specific treatment. A single report showed cessation of parental smoking improved cough in children but there have been no randomized control trials. The AAP has advised against the use of codeine and dextromethorphan for treating any cough. While antibiotics work but the bronchitis recurs, consider further investigation.

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Dr. Epstein received her medical degree from SUNY Buffalo and performed her Pediatrics residency at MCV. Since the completion of her fellowship at Baylor University, Cynthia has practiced Pediatric Pulmonology for over 13 years. She joined CSG’s Pulmonology Division in 2005 where she has also served as the CHKD Cystic Fibrosis Center Director for 9 years. She enjoys photography, animated movies, and traveling with her husband and 6 year old son.

Did You Know?

Children’s Specialty Group has one of three statewide specialty CF centers with more than 400 patient visits per year.

Cough in Children: When Does it Matter?

by Marilyn Gowen, MD

Cough is a common complaint for patients visiting the pediatrician. The chronic cough can be especially annoying in the pediatric population. A chronic cough is defined as a cough of >4-6 weeks duration. The causes of chronic cough can be divided into specific and non-specific and, unlike with adult cough, the relationship between asthma, upper airway disorders, GERD and cough is not well proven in children.

The management of chronic cough should be based on the specific etiology and, if possible, treating the underlying disorder should treat the cough. OTC cough medications are to be avoided.

Children with chronic cough should be evaluated for specific signs and symptoms pointing toward an underlying disease (such as failure to thrive or clubbing with cystic fibrosis). In some children, the quality of cough may be helpful, as with a brassy cough suggesting tracheomalacia. Any associated exacerbating factors should also be evaluated. Children with a history of a chronic cough should undergo a CXR and spirometry (if 4-6 years+). If spirometry shows reversible airway obstruction, the child should be treated for asthma. However, evidence shows that in most children isolated cough does not represent asthma. If the child does not improve with asthma therapy, the CXR is abnormal or spirometry does not show reversible airway obstruction, consider input from a pediatric pulmonologist.

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Dr. Gowen is a graduate of the University of Virginia and received her medical degree from Virginia Commonwealth University. She did her Pediatrics residency at The University of Louisville and her fellowship training in Pediatric Allergy, Immunology, and Pulmonology at Duke University. She was an attending at East Carolina University for five years before joining CSG, CHKD, EVMS, and EVMS in 1990, where she is now the Division Director of Pediatric Pulmonology.
CHKD recently opened a new Pediatric Urgent Care Center. This center is located in Chesapeake at 817 Volvo Parkway and is the region's first urgent care center exclusively for infants, children and teens. “As the newest member of our CHKD Health System, CHKD urgent care expands our ability to provide age-appropriate care to the children of our region when and where they need it,” says CHKD President and CEO, Jim Dahling. The urgent care center offers care for common pediatric illnesses and sports injuries and is open nights and weekends, when most pediatric practices are closed.

Theresa Guins, MD, a board-certified pediatrician and pediatric emergency medicine specialist with CSG, serves as medical director of the new service and worked closely with CHKD Vice-Presidents John Hamilton and John Harding and urgent care administrative director, Angela Robertson, to open the center. Dr. Guins has been part of the CHKD emergency department for 20 years, but it was her experience as a mother that convinced her of the community’s need for a pediatric urgent care.

“About 10 years ago, as I sat with the other moms in a playgroup and talked about our children's pediatricians and my job as a Pediatric Emergency Medicine Specialist in the CHKD ED, I often heard the statement, ‘I wish CHKD was closer, I won't drive into Norfolk unless my child is really sick!’ In the decade since then,” she continues, “CHKD has overcome that concern by building Health Centers that bring many key services closer to families. With urgent care, however, we worked together to build a new service from the ground up. It was very exciting and rewarding to be a part of that. Guins says response to the new service has also been gratifying. “On our first day, parents pulled into the parking lot 10 minutes before we opened and it's been like that every day since,” she says. “Parents are asking me why we didn't do this years ago!”

Dr. Guins said the center is in no way meant to replace the pediatrician or family practitioner, but to improve communication between urgent care and primary care providers, in part through shared electronic health records. The clinic hours are 4-11 p.m. during the week and 11 a.m. to 11 p.m. on weekends/holidays. The new location also has pediatric X-ray technicians and lab specialists.

The new location also has pediatric X-ray technicians and lab specialists. The new urgent care center may not be as convenient as the old-fashioned house call, but it’s close to it. If you need more information, go to CHKD.org/UrgentCare.

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**CSG's Mission is to:** Provide High Quality Care and Excellent Service; Provide Efficient, cost competitive healthcare; Promote Medical Education and Research; Enhance relationships with healthcare providers and delivery systems.

- CSG is comprised of over 150 Pediatric Specialists along with more than 20 Advanced Practice Providers practicing in 27 Pediatric Specialties!
- CSG's Neonatologists, Hospitalists and Pediatricians provide neonatal care at 8 area hospitals 24/7 – 365 days per year.
- In 2014, CSG Specialists provided over 130,000 outpatient patient care visits.
- CSG's Emergency Medicine Specialists and Pediatricians saw over 50,000 children in the CHKD Emergency Room last year.
- CSG supports the Patient Center Medical Home Model of Care by supporting our community-based pediatric colleagues!