

VIRGINIA PEDIATRICS

The Official Publication of The Virginia Chapter, American Academy of Pediatrics

President's Message

Michael Martin, MD, FAAP | Virginia Chapter, AAP President



Managing the COVID-19 pandemic is a unique and ongoing challenge. While many of us warned of the impending havoc coming our way starting at the beginning of the year, the usual emergency response from hospitals and governments seemed eerily absent or slow. During this dark hour as cases in Virginia began to rise, I saw an amazing thing. Pediatricians on the ground, even medical students, finding creative solutions to get the materials they needed to continue seeing their patients, and adapting to a new terrain in pediatrics that appeared overnight.

As stories emerged of people on the ground, the VA-AAP board *was inspired by you*. We knew there was a big role for the Virginia Chapter to play.

Enhanced Communication

- Within days, regional email groups were created for members to share stories and ideas, resources for much needed PPE, and to allow a place for the chapter to rapidly push information out to ALL pediatricians, not just Virginia AAP members.
- Webpages created overnight provided valuable information to navigate practice management, patient care, and secure emergency financial support.
- Funding for educational webinars was secured and provided opportunities to learn and ask questions of experts about COVID-19 testing, treatment, symptoms in pediatrics, issues of health disparities, and even how to reach out to families to engage them on social media.

PPE Fundraising and distribution

- We successfully fundraised thousands of dollars to buy PPE for practices, we had boots on the ground regionally to reach out to community members and receive donated PPE, and we reached out to all of you to identify your needs.
- We helped hundreds of pediatricians in over 50 practices across the state get PPE to continue to safely see patients.

"During this dark hour as cases in Virginia began to rise, I saw an amazing thing."





Advocacy

- We engaged the Governor's office and got pediatricians on task forces for PPE supply, COVID-19 testing, and healthcare workforce reserves to keep you informed on what was happening at the state level and strongly advocate for reform and changes to protect pediatricians and children across the state.
- We helped pediatricians get online with their patients and get payment for telehealth.
- Our board raised awareness to the sudden drop in vaccination in children. Numerous Op-ed pieces were written about the importance of vaccines and the governor's office and local representatives worked with us to amplify the message with significant success.
- Most of you may not have been aware that the Immunization Coalition in Virginia is forming with heavy involvement of our chapter and its immunization committee. With flu and a potential COVID-19 vaccine we are now planning to combat the misinformation that could disrupt immunization efforts.
- The Virginia Mental Health Access Program (VMAP) received additional funding which is now endangered due to the need for budget cuts. The Chapter will continue to fight to keep as much of that funding in the budget.

Moving forward – Crafting an agenda to meet this moment's needs

It is a time for all of us to pivot and adapt. We must grab the opportunities that lie before us. People want and need leadership – we can provide that for schools, for parents, and for our communities. We can emerge stronger and more respected for the sacrifices we make now. I see pediatricians engaging their school boards, opportunities to push telehealth into meaningful reform and payment parity, even a renewed focus on health disparities that the Chapter is already working to address through a QI project, a CATCH grant, and even internally with a diversity champion on our board.

So much has yet to be determined and will likely require shifts in focus and planning. Our power as a chapter is and has always been about individual members doing the work. Over the next months I will introduce you to those important people and to the important work they do for the kids of Virginia and you. But here is the catch. None of this is possible without your membership, without your help, and without your voice. The power of you empowers the us. Thank you for the amazing work and commitment you all have demonstrated in Virginia. Your passion and energy empowers me as your new President.

Virginia Chapter, AAP Wins Top Honors

Named 2019 Outstanding Chapter Award

The Virginia Chapter, American Academy of Pediatrics was recently named 2019 Outstanding Chapter Award Winner for the Large Chapter Category by the AAP. Managed by RAM Services Corp., the chapter was selected because of its service and innovation, including the Virginia Mental Health Access Program (VMAP), which received \$1.23 million in state funding in 2019. Other initiatives cited by judges include:



- A \$2.2 million grant over five years to establish Virginia Mental Health Access Program, training in the screening, diagnosis and treatment of mental health disorders. The program features 258 primary care providers reaching 516,000 patients, with 103,200 with mental health conditions.
- “Your Vote Matters – What’s at Stake for Kids Health,” a gun safety and gun violence prevention campaign which reached more than 1,000 pediatricians.
- Exceeding goals in “Improving HPV Vaccination Rates Through Chapter QI Intervention,” where the chapter became certified by the American Board of Pediatrics to offer MOC Part 4 for projects and included 22 providers, reaching 44,000 patients, approximately 6,600 adolescents. Collaboration with Virginia Foundation for Healthy Youth which reached more than 150,000 youth on issues related to tobacco use, obesity and substance use.

NOW RECRUITING FOR FOR 2020-2021 ECHO COHORTS!

Central Virginia ECHO – 4th Tuesdays, 12 to 1PM
September 2020 to August 2021

NOVA / SWVA ECHO - 4th Fridays, 12 to 1PM
September 2020 to August 2021

Western Virginia ECHO - 3rd Fridays, 12 to 1PM
January 2021 to December 2021

Eastern Virginia ECHO - Day/Time TBD
January 2021 to December 2021

Check it out virginiapediatrics.org/vmap/echo

Save the Date

AAP NCE

Virtual

October 2 - 5, 2020

MSV Annual Meeting

Virtual

October 10, 2020

14th Annual Mohsen Ziai Pediatric Conference

Virtual

November 6 - 7, 2020

VMAP Mental Health Education Opportunities for PCPs

By VMAP Education Workshop

VMAP, still in its infancy, has had far-reaching effects in its ability to link primary care providers to behavioral and mental health (BMH) specialists as well as care coordination for local services in order to improve the lives of Virginia children and youth and their families. Additionally, VMAP supports a statewide interdisciplinary education program to enhance the BMH needs of primary care providers. Because providers learn in different ways and have unique time commitments and demands, the VMAP Program has developed a selection of programs, regionally offered, to meet the needs of its participants: REACH and VMAP ECHO.

REACH, a Patient Centered Mental Health in Pediatric Practice Program, is a national interactive, in-person (and now virtual!) 16 hour course (The REACH Institute) offered regionally in Virginia, by trained child psychiatrists and general pediatricians, focused on diagnosis and treatment of pediatric mental health problems. It is followed by 12 bi-monthly 1-hour group calls to discuss cases in daily practice. There are comprehensive workbooks, tools and handouts included. 28.25 Cat 1 credits are available.

VMAP PROJECT ECHO (Extension for Community Healthcare Outcomes) is a telementoring program designed to provide virtual professional mental health learning for pediatric primary care providers, through a collaborative model of medical education and care management. It is divided into 5 regional cohorts in Virginia and meets monthly over a noon hour to discuss a community case and focus on the 4-Rs (Recognize, Respond, Resources, and know when to Refer) of 10-12 common mental health problems. It has a MOC 4 MH screening project embedded and 60 credits can be awarded as Cat 1/MOC 2/ MOC 4 package.

Which is right for ME? Many providers are asking, should I do one or the other? Both? The monthly VMAP Education workgroup who have participated in both REACH and ECHO forums brought up these key points to help you decide!!

Get started with something to enhance your knowledge and skills in addressing the behavior and mental health needs of your patients! It is hard to do BOTH at the same time. REACH provides a more comprehensive study of psychopharmacology, so starting with a REACH course might be where your gaps are. VMAP ECHO provides monthly, continuous application of BMH medications, brief interventions, and screening tools.

Look at your time and place. Our schedules are already packed full! Timing is everything. Can you devote a weekend and then 2 hours a month for 6 months, or is a lunch hour once a month for a year a better fit?

What kind of CME/MOC 4 do you need? Both programs offer credits and additionally the Virginia AAP offers a separate MOC 4 project for increasing the use of adolescent depression screening (see website).

Are you looking to connect and network with your regional colleagues? Sometimes primary care practice can be lonely. BOTH regional programs offer great opportunities to get to know and share strengths and weaknesses of your local practice area with colleagues in different practices as well as child psychiatrists in your area. It's refreshing to be moving together toward improving the mental health of whole populations of children and youth!



Questions about REACH? Contact: Jane Chappell at jchappell@ramdocs.org
Questions about Project ECHO? Robin Cummings at robin.c.cummings@gmail.com



Virginia Pediatrics Newsletter | American Academy of Pediatrics – Virginia Chapter

Accreditation

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of Eastern Virginia Medical School and the American Academy of Pediatrics-Virginia Chapter. Eastern Virginia Medical School is accredited by the ACCME to provide continuing medical education for physicians.

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Eastern Virginia Medical School designates this enduring material for a maximum of 2 AMA PRA Category 1 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

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Review the articles on pages 6 - 20. Complete the evaluation survey by visiting <https://www.surveymonkey.com/r/88LB8YN> and complete online. Please allow 1-2 weeks to receive your certificate.

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Dr. David Darrow has disclosed that he is on the Speakers List for Pierre Fabre Laboratories. All conflicts of interest have been resolved.

All other presenters and planning committee members have indicated no relevant financial relationships.

Growing Up with Congenital Heart Disease: Role of the General Pediatrician Supporting the Transition of Care for the Adolescent & Young Adult Patient

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Objective: Identify the roles of the general pediatrician in transition of care of the young adult congenital heart disease patient to adult care.

ACGME competencies: Patient care, Systems-based practice, Medical Knowledge

Introduction

Congenital heart disease (CHD) affects 1 in 100 children each year worldwide and the number of adolescents and adults with congenital heart disease (~1.3million) now significantly outnumbers the pediatric population (~800,000) and the adolescent/adult group is growing by 5% annually.(1) This discrepancy can be attributed to earlier diagnosis of neonatal cardiac conditions and improved surgical and ICU outcomes, coupled with improved transcatheter and medical therapies. As a direct result of improved survival in the pediatric population, there is a growing need to ensure that these patients continue to get appropriate care as adolescents and young adult patients. General pediatricians have a vital role in this process, especially because they usually have more frequent contact with the patient and often have a long-standing and trusting relationship with the family and patient. A generalist-specialist partnership can help ensure those pediatric patients that need ongoing specialty care can continue to receive it without lapses in care or being “lost to follow-up.”

Although there are close to 50,000 patients seen by the ACHD centers across the US, this represents just 5% of the approximately 1.3 million patients with congenital heart disease who need subspecialty healthcare (1). One study found that at least 25% of patients who needed ongoing cardiac care never transitioned to adult care, despite some efforts to stem the tide (2). A recent analysis found several risk factors associated with loss of specialty follow-up in young cardiac patients (3). These included:

- Male gender
- Moderate cardiac disease complexity
- Fewer pediatric cardiac interventions
- Normal perceived functional status as a teen by patient and family
- Lack of obtaining a primary care physician in early adulthood



As general pediatricians, identifying these “at risk” patients early and working in a systematic fashion with the specialist to ensure continuity of care is vital. Healthcare disparities are compounded in this high-risk population by trends surrounding poor transition of care between the pediatric and adult systems (4,5).

This has highlighted a major need for involvement of the general pediatrician in **education, preventative care, resource assistance, and connection with specialists** prior to and during transition of care.

Education

As most congenital heart disease is diagnosed in infancy or early childhood, the majority of the palliative/corrective procedures were also performed when the patient's parents were solely involved in the shared decision-making process. This naturally results in knowledge gaps in the child's ability to understand and explain their medical history once they reach early adolescence. (6) **Therefore, many teens and young adults do not have a clear understanding of their CHD diagnoses nor what procedures they have undergone.** Frequent education and reiteration about a patient's diagnoses and interventions by both the general pediatrician and pediatric cardiologist can help the adolescent understand their own health, both now and what issues they may face in the future.

The AAP has developed its own transition program and guidelines (7). It helps providers develop a system for planning, tracking, and follow-through for all youth and young adults beginning in early adolescence and continuing into young adulthood. The GotTransition program that emanated from this 2018 AAP/AAFP/ACP Clinical Report (7), entitled “Supporting the Health Care Transition from Adolescence to Adulthood” discusses six core elements of a successful transition program that can be used for any pediatric patient who needs ongoing specialty care (Figure 1). We have adapted these principles for our own clinic (Figure 2) and several of these are highlighted below and some specific aspects of transition teaching also listed.

Preventative Care – Healthy Lifestyle Choices

Healthy lifestyle discussions and education often begin in the general pediatrician’s office, especially when patients are there for a well-check or other routine care. Reinforcing these lessons and tailoring them to the adolescent are especially important for these patients to prevent modifiable risk factors such as obesity, smoking/vaping, drug or alcohol use, or excessive risk-taking behaviors. As important that it is that all adolescents are encouraged to have healthy habits regarding exercise and diet, it is even more important that this be conveyed to children with underlying heart disease and their families who may wrongly believe that it is better to be sedentary due to their underlying disease. It is also important to begin the discussion on reproductive health and future fertility plans in teenage girls with complex congenital heart disease. These discussions can be broached by the general pediatrician first in the primary care setting prior to referrals to an ACHD center which will have the expertise to further risk stratify these patients.

Resource Assistance

Career counseling

Young adults with moderate to complex congenital heart disease require medical evaluation by a subspecialist prior to pursuing certain jobs and careers, as CHD may limit their job performance or be a disqualifying condition. This is especially significant in Virginia due to the large military presence, especially in Hampton Roads, where many forms of CHD indeed keep individuals from joining. Conversely, some patients have assumed that their diagnosis will preclude them from most jobs/educational opportunities when this is usually not true. Thus, appropriate career counseling and ongoing discussions about an individual patient’s abilities and limitations is crucial. These discussions should begin in adolescence to set appropriate expectations and allow them to chart a successful course into independent adulthood.

Mental Health issues

Mental health conditions such as Attention deficit disorder, anxiety, depression, and sleep disorders have been found to be more common in adolescents and adult survivors of CHD. Part of a successful transition program is to screen for the presence of these disorders, remove the stigma of discussing these issues, and ensure adequate general and specialty care is available to them. A general pediatrician is vital to this undertaking and ensuring transition to adult general and specialty care can make a tremendous difference in the lives of the patients and help shape their future.

Health and Life Insurance

Maintaining health insurance is vital to all pediatric and young adult patients that will continue to require regular health care, especially those that will need frequent, expensive diagnostic procedures or therapeutic interventions, as do many CHD patients. Part of the transition program is counseling patients and families about the importance of maintaining health care during this time, discussing the benefits and limits of the Affordable Care Act (ACA; a.k.a. “Obamacare”), the option of COBRA coverage, and the health insurance marketplace.

We also discuss life insurance with patients and their families, acknowledging the higher actuarial risk of this population and discussing with them options for decreasing their life insurance rates, including getting a policy at a younger age.

Connection to Appropriate Ongoing Care

In 2018, the American College Cardiology published updated adult congenital cardiology guidelines directing patient care (8). This document outlines best-practices for care of ACHD patients, including recommended intervals for various evaluations. Given the breadth and complexity of the various CHD conditions and variability of individual patients' anatomy and physiology, ongoing care with a board-certified Adult Congenital Heart Disease (ACHD) specialty cardiologist is essential. There are few board-certified ACHD cardiologists in the state of Virginia. Two of these physicians, Dr. Alexander Ellis and Dr. Lopa Hartke, lead the ACHD program at Children's Hospital of The King's Daughters Heart Center and work with Kayla Sommers, PA-C. As they are board certified in Internal Medicine, Pediatrics, Pediatric Cardiology and Adult Congenital Heart Disease, they are well-equipped to provide comprehensive care for these complex patients. A third physician, Dr. Mohit Bhasin, is an adult cardiologist with ACHD board certification and is integrally involved in the program as well. CHKD's ACHD program actively follows > 400 patients in their practice serving the Hampton Roads area and beyond. While their primary role is to manage current cardiac concerns in line with updated American College of Cardiology guidelines, they also serve as a medical home for their patients, connecting them with specific services, such as specialty pre-conception and pregnancy care, anticoagulation services, psychosocial support services and social work / case management.

The CHKD transition program is entitled "THE NEXT STEP: Growing up or 'Adulting' with Congenital Heart Disease," and we have developed a handout/guide that can be useful for patients and families alike.

If you or your child has moderate or complex congenital heart disease



Children's Hospital
of The King's Daughters

Growing Up / "Adulting" with Congenital Heart Disease

THE NEXT STEP

- Atrial or Ventricular Septal Defects (ASD or VSD)
- Atrioventricular Septal Defects (AV Canal Defects)
- Coarctation of the Aorta
- Congenital coronary artery anomalies
- Double Outlet Right Ventricle (DORV)
- Double Inlet Left Ventricle (DILV)
- Ebstein's Anomaly of the Tricuspid Valve
- Eisenmenger Syndrome
- Interrupted aortic arch
- Pulmonary Hypertension related to Congenital Heart Disease
- Pulmonary Atresia
- Single Ventricle physiology (post Glenn or Fontan Procedure)
- Tetralogy of Fallot (TOF)
- Total or Partial Anomalous Pulmonary Venous Return
- Transposition of the Great Arteries (D-TGA or L-TGA/ccTGA)
- Tricuspid Atresia
- Truncus Arteriosus
- Congenital valve anomalies (i.e. aortic, mitral, tricuspid, or pulmonary valve problems from birth)

And are a TEEN or YOUNG ADULT:

We want to help you become independent and responsible for your heart! You also need to be followed by an Adult Congenital Heart Disease (ACHD) doctor for LIFE!

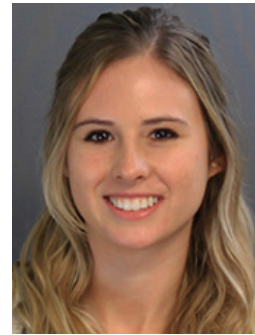
- As you age, we want to help you prevent future complications so that you continue to feel well
- Our goal is to educate you on your cardiac diagnosis, current condition and possible future issues. In addition we address non-cardiac issues that may be impacted by having congenital heart disease.
- Here at CHKD heart center Dr. Alexander Ellis and Dr. Lopa Hartke specialize in Adult Congenital Heart Disease who are board certified in Internal Medicine, Pediatrics, Pediatric Cardiology and Adult Congenital Heart Disease. Kayla Sommers PA-C is a Physician Assistant who practices alongside at the CHKD Cardiology Clinic.



Dr. Alexander Ellis



Dr. Lopa Hartke



Kayla Sommers, PA-C

As you take the NEXT STEP to become medically independent, you should know about these important things:

- What is your Congenital Heart disease (CHD) diagnosis? What procedures (surgical or catheter-based) have you had? Do you have these reports/notes?
- What are the long term effects or potential issues that might arise from your type of CHD? How often should you be seen by an ACHD doctor?
- What medications do you take? How much, how often and why?
- How are your lifestyle choices (diet, exercise, and substance use) impacting your life and heart with congenital heart disease?
- How often should you go to the dentist? Should you take antibiotics beforehand? Why? Do you know if you are at risk for bacterial endocarditis (SBE)?

Do you know that mental health issues like anxiety or depression may be more common in some individuals with CHD and that resources are available to help?

Do you have activity or work/job limitations that may impact your future career or employment choices? Are you prepared for health issues at college?

Do you know about the importance of health and/or life insurance and the potential impact of having CHD on getting insured?

Hey LADIES! Do you know what forms of birth control may be recommended or safe for you to take? Are there additional risks if you chose to become pregnant? Congenital Heart Disease is not a problem that you outgrow. Just because you had a procedure surgery or catheterization) in childhood does not mean your heart is forever fixed or that you are "cured." Issues can arise, yet with the proper care, you can do very well through life.

Learning the answers to these questions is just the start! We are here to help and want to keep you and your heart safe and healthy!

CONCLUSIONS

Developing a program to help transition pediatric patients with chronic or complex medical issues into lifelong adult care can often make the difference between a healthy, thriving adult and one who chronically struggles with personal, professional, and medical issues. General pediatricians play a vital role in the overall wellness of their patients. Ensuring appropriate transition of both general and specialty care is the final service the pediatrician can provide to these patients and families.

We hope these resources and teaching / talking points can assist in this vital process.

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Concussion Related Vision Issues

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Objective: Primer on concussion related vision issues

ACGME competencies: Patient Care, Practice-Based Learning and Improvement, Medical Knowledge

Introduction:

Since antiquity there has been a known connection between the eyes and the central nervous system. This connection has become better defined with the advent of modern medicine. Things like an abnormal pupillary light reflex or an abducens palsy are now well understood to provide a roadmap to specific intracranial pathology. Over the course of the last decade, a similar connection has become better established between concussion and vision related findings. This article will aim to serve as a primer for some of the best cited literature on concussion related vision issues and how the eyes can be used in clinical practice treating concussions.



Anatomy and Physiology:

A basic understanding of the anatomy of the eye and eye-tracking pathways is important for understanding how it is altered in the setting of a concussion. Briefly, the eye has 6 muscles that allow for the entire range of extraocular movement. These are the medial, lateral, superior, and inferior rectus muscles, along with the superior and inferior obliques. These muscles are all innervated by the Oculomotor Nerve (CNIII) with the exception of the Superior oblique (innervated by the trochlear nerve (CN IV)) and the lateral rectus muscles (innervated by the abducens nerve (CNVI)).

Movements of the eye are broken down largely into 4 basic patterns: Smooth Pursuits, Saccades, Vergence, and Gaze Stability (Vestibulo-Ocular Reflex). Smooth pursuits are the tracking of a moving object with the head remaining stationary. While somewhat oversimplified, saccades are moving the point of focus from one stationary object to another. Vergence is the movement of the eyes as an object is either brought towards (convergence) or away from (divergence) the patient. Lastly, the vestibulo-ocular reflex (which is commonly called gaze stability) is moving the head while the eyes are tasked with focusing on a fixed object.

Apart from extraocular movements there are other important actions of the eye that can be useful in the setting of a concussion. One of these is accommodation, which is the changing shape of the lens to focus an object at a given distance on the back of the eye. The other is the pupillary light reflex which is the reflexive change in the diameter of the pupil to allow different amounts of light into the eyes with a given stimulus.

Evidence Base for Vision Issue in Concussion:

Noticing a connection between neurodegenerative disease and issues with the eyes, in 2009 Heitger et al. looked for similar findings in the setting of concussions. Their study showed individuals with prolonged concussion symptoms (>30 days) had differences seen with various aspects of saccadic eye movement compared to those whose symptoms were improved more quickly (< 30 days). One of the most interesting aspects of their findings was that many of these variables were beyond conscious control. Suggesting that the eyes may be a reliable, objective marker of concussion outside the effects of some common concussion cofounders (anxiety/depression, ulterior gain, or malingering).(1) Further studies published in 2015 by Corwin et. al and in 2016 by Master et al. helped establish a similar connection in children. Dr. Corwin's article suggested gaze stability as a marker of concussion(2), while Dr. Master looked at convergence along with accommodative and saccadic dysfunction.(3)

Studies like these led to attempts to validate ways to use the eye for evaluating concussions clinically. One of these ways is through what is called the King-Devick (KD) Test. The KD test is a quick sideline assessment of a patient's saccadic function. In brief, the patient is timed reading three sets of numbers. The spacing is varied with each trial and the patient's overall time is established. Like many other concussion tests, the patient serves as their own control, being tested pre-head injury as a baseline. Since its development, the KD test has been relatively well studied with a 2016 meta-analysis showing an 85% sensitivity for a positive KD test and a 90% specificity for a negative KD test.⁽⁴⁾

Also, Mucha et. al looked to establish a brief vestibular/ocular motor screening exam as an effective way of evaluating concussion on the sidelines. This study looked at smooth pursuits, saccades, near point convergence, VOR, and something called visual motion sensitivity (which is the inhibition of VOR with the patients focused on a moving object while moving their head). Within a group of 64 patients who had recently sustained a sports related concussion, 61 showed at least one deficit. This was significantly different when compared to a matched group of controls. When looking at patients who had issues with near point convergence, VOR, and VMS combined, they found a high positive prediction rate for concussion.⁽⁵⁾

Next Steps:

Naturally, this had led to attempts to use these associations for commercial gain. The FDA, in 2019, announced approval for the EyeBox which is an eye-tracking device shown to have a high negative predictive value (95%) in premarket studies.⁶ It is important to note that this is simply another tool that can be used by physicians to aid in the diagnosis of concussion and should not be used indiscriminately. Likewise, recent work is being done in assessing changes seen in the pupillary light reflex in the setting of a concussion as measured by a pupilometer. Physicians should also be weary and discourage the use of cell phone applications which are not FDA approved. Many of these suggest the ability to diagnose concussion using pupillometry, but are not validated.

Conclusion:

Recently, vision issues have become a relatively large portion of the diagnosis and treatment of concussions in children. When we take a step back and look into why, the reasons are relatively obvious. Primarily, vision issues have been shown to be an objective marker of prolonged concussion symptoms in patient populations often devoid of objective findings. Also, children and adolescents are subjected to a tremendous amount of visual stimuli through expectations at school (reading, writing, and focusing on presented material) and at home (cell phones, video games, and TV). Finally, and most importantly these deficits are actionable. Vestibulo-ocular physical therapy can directly work to rehabilitate the pathways causing many of the vision related issues and ultimately provide relief from concussion related symptoms faster than purely symptomatic care.

Take Home Points:

- Vestibular/Ocular Motor Screening is relatively easy to incorporate into a Primary Care, ED, and Urgent Care visit and can provide useful clinical information.
- With concerns for issues related to eye-tracking referral can be made to a Physical Therapist trained in Vestibulo-Ocular PT or to a Sports Medicine Physician for evaluation.

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Incidental Findings during Trauma Evaluation

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Objective: Review importance of trauma for incidental findings

ACGME competencies: Patient Care, Medical Knowledge

ABSTRACT:

Current evaluation of trauma -related injuries relies heavily on imaging particularly the CT scan.

Imaging can reveal findings that are unrelated to the trauma. The clinician must be attentive to any incidental findings to determine need for intervention or follow up. Presented are 2 case reports involving pediatric patients involved in trauma demonstrating findings that are unrelated to trauma. The second case in particular demonstrates how an incidental finding can challenge the clinical judgment of the trauma team regarding need for emergent intervention.

INTRODUCTION:

Radiologic imaging is an important part of the evaluation of the trauma patient. Initial x-rays or CT scans often reveal findings that are unrelated to the trauma and these are referred to as incidental findings. The clinical significance of incidental findings may vary and further evaluation and treatment may be required. The following cases highlight examples of incidental findings and the importance of follow-up of those findings.

CASE REPORT 1:

3 yo female who was an unrestrained passenger in a vehicle traveling approximately 45-50 mph that lost control, hit a pole and sustained significant front end damage. She presented with declining mental status. During the subsequent trauma workup CT abdomen and pelvis showed an incidental finding of a right renal mass (Figure 1). Based on appearance it was felt this could be a multilocular cystic nephroma, however renal teratoma or cystic Wilms tumor could not be excluded. She underwent partial nephrectomy and lymph node sampling. Pathology was found to be consistent with cystic partially differentiated nephroblastoma. It was confirmed that there was complete excision. She is undergoing surveillance ultrasound under guidance of Hematology/Oncology.

CASE REPORT 2:

13 yo male who presented with multiple gunshot wounds to his left leg, right arm, chest, abdomen and pelvis. Initial trauma bay chest x-ray showed a 14x8 cm density in the right upper chest and this was assumed to be a hematoma in this clinical setting (Figure 2). Cardiothoracic surgery was involved and he went emergently to the OR for exploratory laparotomy to address the multiple injuries to his abdomen and also possible thoracotomy. Imaging in the OR showed no change in the supposed hematoma and the decision was made to proceed with emergent exploratory laparotomy.

He underwent small bowel resection, ileocecal resection, repair of multiple small bowel injuries and repair of transverse colon injuries with packing of the retroperitoneum. He was left with an open abdomen. It was noted with further imaging that the reported large mediastinal hematoma that was not expanding. Subsequent CTA of the neck and chest were done showing lymphadenopathy in the right lower neck and a large mediastinal mass with no evidence of vascular injury (Figure 3). Lymph node biopsy was performed at the time he returned to the OR for bowel anastomosis, creation of end ileostomy and abdominal wall closure. Pathology showed nodular sclerosis Hodgkin lymphoma and he underwent therapy under direction of Hematology/Oncology.

Discussion:

Initial evaluation of the trauma patient relies heavily on radiologic imaging. It is a common occurrence to have incidental findings on imaging that are unrelated to the traumatic injury. Most frequently these findings are documented on CT evaluation of the trauma patient but case report 2 highlights that findings may also be discovered on radiograph (plain film). The exact prevalence is somewhat variable among institutions but can be as high as 53%. (1,2,3,4) Abdomen/Pelvis CT seems to have a higher rate of incidental findings than CT head in the pediatric population.(5)

While the frequency of incidental findings vary among institutions there is also variation in documentation and follow up.(4,6-9) Poor documentation and follow up has been described which raises concerns regarding clinical care and legal/ethical considerations. As an example a study by Devine et. al, showed 42% patients meeting criteria had incidental findings by CT but of the patients with incidental findings only 5% were notified before discharge and 31% had documentation either in the history and physical or the discharge summary with no documentation of follow-up. A majority (62%) had no further documentation found in the EMR regarding the incidental finding.(1)

Classification systems have been developed regarding incidental findings and is documented in the literature.(4,8,9)

Class 1 requires no further investigation or workup. Class 2 requires outpatient follow-up within 3 months to 1 year. Class 3 requires urgent evaluation or further investigation before hospital discharge or soon thereafter. Andrawes et al, worked on the documentation process with a section added to the history and physical as well as the discharge instructions. They also provided CT reports and imaging CD to help patients avoid unnecessary or repeat imaging. (4) Best practice guidelines in imaging has also been published by ACS TQIP to help guide clinicians in management of incidental findings.(10)

The most important aspect of trauma care is to address the acute traumatic injuries but the clinician must be vigilant for incidental findings that could potentially affect the patient's future health. Documentation of these findings is crucial to ensuring the patient has appropriate follow up and to also avoid unnecessary imaging or interventions. Benefits of early intervention are highlighted by the above case reports.

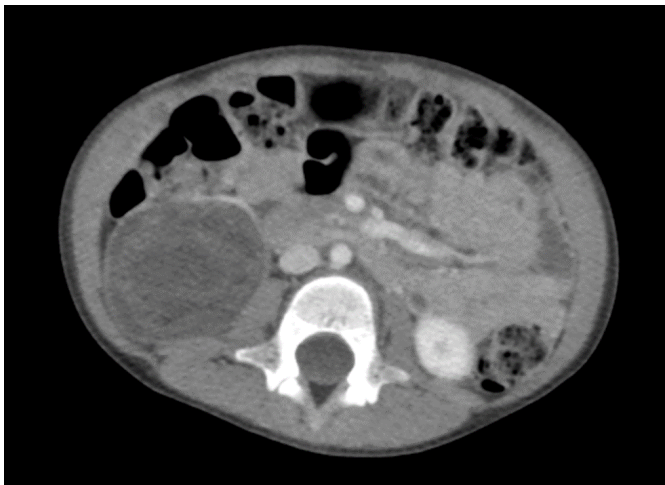


Figure 1. CT showing incidental finding of right renal mass.

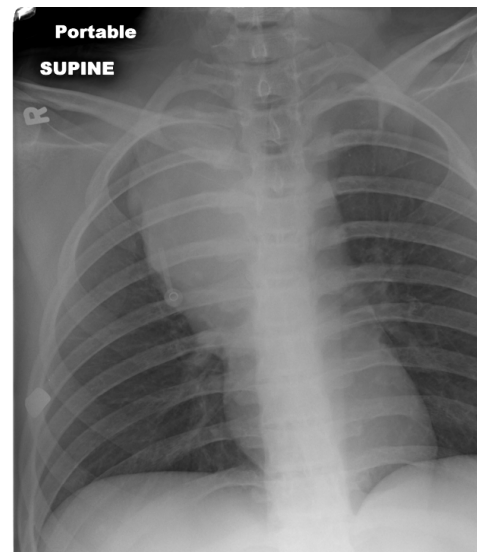


Figure 2. Chest x-ray demonstrating mediastinal mass assumed to be hematoma.

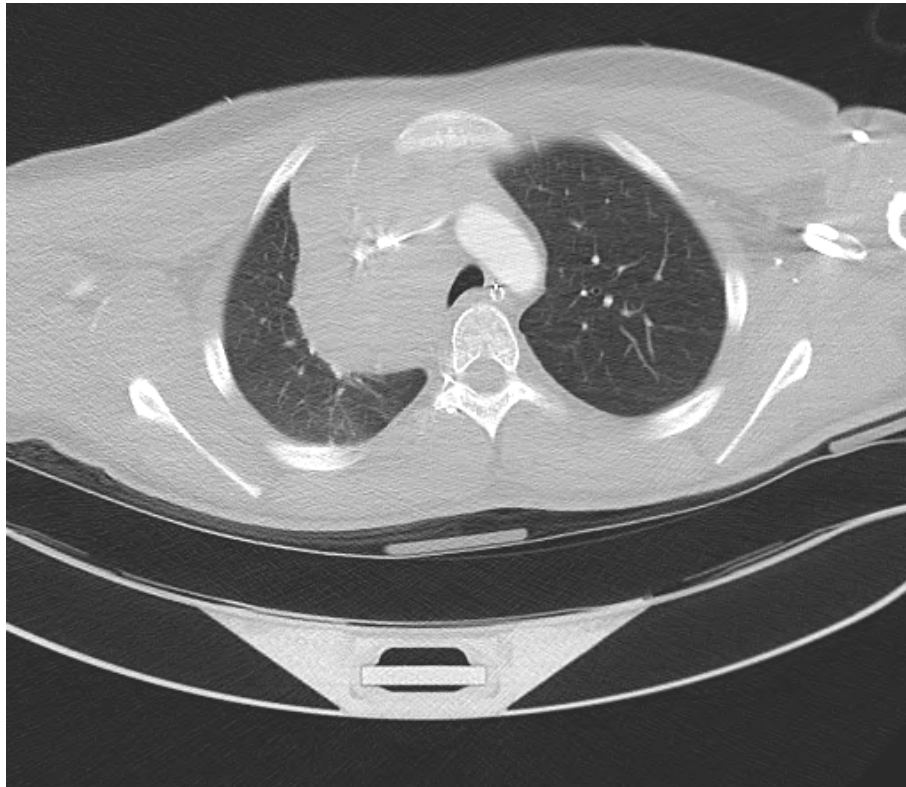


Figure 3. CTA demonstrating mediastinal mass.

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IHReS - A Referral Tool for Infantile Hemangioma

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Objective: To familiarize providers of pediatric care with a tool to simplify specialist referrals of hemangiomas

ACGME competencies: Patient Care, Medical Knowledge

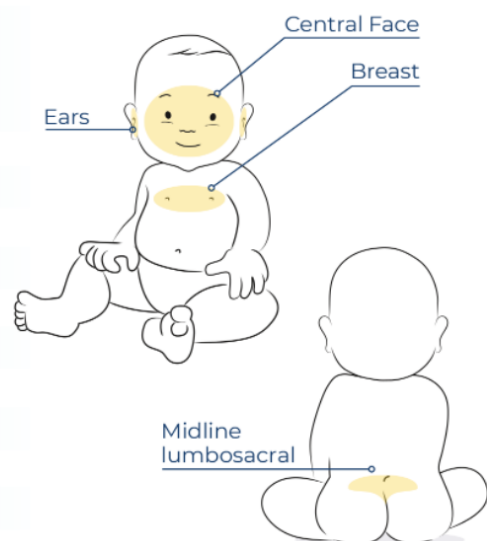
Cutaneous infantile hemangiomas (IHS) are common, occurring in 4–5% of infants.⁽¹²⁾ They are benign, non-cancerous tumors of blood vessels that can range in size and severity. However, in contrast to most tumors, IHS have the unique ability to spontaneously involute after initial proliferation. They grow most rapidly in the first 1–2 months of life, with most growth complete by about 5 months of age, although some growth can continue until the child's first birthday.^(4,5) The involution phase starts around twelve months and can last several years. Risk factors include female gender, Caucasian race, prematurity and/or low birth weight, and perinatal hypoxia; other risk factors are proposed but are not proven.⁽⁶⁾

While many IHS will involute completely, some may be complicated by ulceration, vision or airway compromise, or associated syndromes. Others leave behind residua such as telangiectasias, erythema, redundant tissue or scar.⁽⁶⁾ As a result, IH treatment is individualized, depending on a range of factors including size, location, subtype, associated syndromes such as PHACES*, and risk of complications. The most commonly recommended treatment options for early stage IHS are expectant management and topical or systemic beta-blockers: Regional IH can be associated with underlying syndromes, warranting additional imaging and evaluation for complications.⁽⁷⁾ Late stage lesions and those with early complications may require additional medical therapy or surgery.

The treatment of IH has evolved over the last decade since the introduction of topical and systemic beta-blocker treatments for this condition. Oral propranolol, FDA-approved as Hemangeol®, has dramatically changed outcomes for IH that would have previously gone untreated. The ideal time to start treatment is in the early stages of growth, often when the infant is less than two months old.

Since IH growth is rapid and a typical infant sees their pediatrician at two months and not again until four months of age, early identification of high-risk lesions is critical. To help simplify the decision-making process and to facilitate early referrals to an IH specialist, a new IH scoring tool has been proposed, and is currently in use at the Children's Hospital of The King's Daughters multidisciplinary Hemangioma and Vascular Birthmarks Clinic.⁽⁸⁾ The "IHRes," or Infantile Hemangioma Referral Score, can be completed in just a couple of minutes (Figure).⁽⁹⁾ The score is comprised of two sections of 6 questions each that rapidly guide the primary care provider to recommend for the patient either early referral to an IH specialist or active monitoring for changes that would suggest a need for referral. The first section consists of "Yes/No" questions, a positive response to any of which results in a recommendation for referral. The second section requires more detail, generating a numerical score that determines the need for referral. The tool can be found at www.ihscoring.com, and is available free of charge.

The Children's Hospital of The King's Daughters multidisciplinary Hemangioma and Vascular Birthmarks Clinic was established in 2000. With subspecialists representing dermatology, plastic surgery, otolaryngology, hematology/oncology, interventional radiology, and genetics, the clinic provides expertise in the diagnosis and management of infantile hemangiomas as well as other vascular lesions. Appointments can be made by contacting clinic coordinator, Wendy Raines, at (757) 668-8684.



IHReS Infantile Hemangioma Referral Score

Complications (Ulceration, Visual compromise, Feeding difficulties, Stridor) or **potential risk of these complications**

☐ Yes ☐ No

Central face and ears

☐ Yes ☐ No

Breast (in female)

☐ Yes ☐ No

Midline lumbosacral

☐ Yes ☐ No

Size ≥ 4 cm (focal or segmental)

☐ Yes ☐ No

Number of hemangiomas ≥ 5

☐ Yes ☐ No

**IF AT LEAST ONE OF THE PREVIOUS SITUATION IS TICKED "YES",
THE PATIENT SHOULD BE REFERRED.**

IF YOU TICK "NO" TO ALL QUESTIONS, COMPLETE THE TABLE ON NEXT PAGE.

Note: In case of multiple IH, the score should be done for each IH.

THE TOTAL SCORE IS THE SUM OF THE SCORES FROM EACH PARAMETER BELOW:

Parameters	Items			Score Please consider only the highest score for each parameter
Location of Hemangioma	Other facial areas than those mentioned previously	☐ Yes ☐ No	If Yes: 3 points (if No: 0 point)	☐ 3 ☐ 2 ☐ 0
	Neck, Diaper area, Scalp	☐ Yes ☐ No	If Yes: 2 points (if No: 0 point)	
Size of the biggest hemangioma	≥ 1 cm on other facial area than those mentioned previously	☐ Yes ☐ No	If Yes: 3 points (if No: 0 point)	☐ 3 ☐ 2 ☐ 0
	2-4 cm on other body area than those mentioned previously	☐ Yes ☐ No	If Yes: 2 points (if No: 0 point)	
Current child age and Growth of Hemangioma	The infant is < than 2 months	☐ Yes ☐ No	If Yes: 3 points (if No: 0 point)	☐ 3 ☐ 2 ☐ 0
	The infant is ≥ 2 and ≤ 4 months with an evident growth within last 2 weeks	☐ Yes ☐ No	If Yes: 2 points (if No: 0 point)	
TOTAL				

SCORE ≥4: PATIENT SHOULD BE REFERRED TO A SPECIALIST.
SCORE <4: PATIENT NOT TO BE REFERRED, SHOULD BE MONITORED. SCORE WILL BE DONE AT EVERY VISITE.

The final decision to refer the patient to an expert centre is up to the physician and the parents.

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Bigger Than Us

Hannah Hollon, MD | PGY-2 | Children's Hospital of Richmond

Darina Dinov, DO | PGY-2 | Children's Hospital of Richmond

Objective: To discuss the impact of poverty on gun violence

ACGME competencies: System-based Practice, Medical Knowledge

Charlie, a pediatric intern, was walking across the hospital after clinic when he heard, "Help, my son. My son has been shot." He turned around to see an obvious open wound in the child's head who was moaning in this man's arms. He could not believe it and did not know what to do. Luckily the man asked where the closest emergency department was, which triggered him into action. Charlie immediately started running but did not even know where the trauma bay was, as he had never been there before. He led them to the emergency room and the nurses took over his clinical care. Charlie then ran to the pediatric side of the emergency department to let them know what had just happened, realizing that they did not know about this child beforehand. This child was lucky. He is now home from the hospital and able to walk again, but his life is forever altered. Not every child is this lucky. We talked with Charlie after the incident, and he feels that unfortunately this is the kind of new reality that we live in. He has a wife and toddler at home and feels that his family is one random bullet or act of violence away from losing them.

Unfortunately, stories of gun injuries are not uncommon in our hospital's underserved population. Data from the CDC show that from 2008 – 2014, the average death rate of children < 19 years old as a result of fatal firearm injuries in Richmond, Virginia was 7.3 per 100,000 (the highest rate of pediatric firearm violence among children in the state). (1) Most of these gun fatalities occur in the eastern and southern parts of the city, where poverty is most concentrated. (2) This pattern is seen nationally as well; the likelihood of gun violence is directly related to the neighborhood in which you live. The PECARN study found that children in communities with higher socioeconomic disadvantages were at greatest risk for firearm injuries. (3) Poverty leads to family disruption, lower employment potential, and a higher concentration of firearms.

Most pediatricians agree that gun safety is a top public health priority. In a 2007 survey, 92% of pediatricians stated they believed this was an important issue. (4) Pediatricians often include injury prevention into well-child checks. We should aim to ask families whether firearms are present in their home, and if so, whether they are stored properly. Studies have shown that educational interventions are successful at increasing safe firearm storage in the home. Specifically, one study found that after counseling, 64% of families practiced safe firearm storage compared to 33% in the control group. (4)

Only 1/4 of pediatric residency programs incorporate firearm-related education into their curricula. (5) In Virginia, we found that one in five residency programs report having formal firearm safety training. In our residency program, because there is no existing firearm safety education for residents, we are developing a resident-targeted education curriculum on firearm safety. In the first phase, we held a didactic session for residents and faculty that included information on how to speak to families about safe gun storage as well as addressing the current violence climate in our community and changes happening at the policy level. Our hope is to equip residents with the skills and knowledge to discuss this time-sensitive issue with our families with the common goal of safety for our children. However, as much good as we might do in educating families about the importance of safe gun storage and asking other families about guns in their homes, we still face another side of this crisis. A good portion of the gun injuries and deaths that we see at my institution occur from stray bullets, violence, and from being in the wrong place at the wrong time. This is much harder to change. This requires a large community-based effort. This requires policy change. This feels much bigger than anything we can change alone.

This movement starts small. We need to increase the education that medical students and residents receive on firearm safety and its global impact on our patients. However, as educational programs grow, we also need to move outside the clinic and into our communities to reach a broader audience. We need to be encouraging these same colleagues to advocate for their patients at the policy level. Will this be enough to save the boy in his father's arms or the girl sleeping in her bed at home or the boy in the grocery store parking lot?

WE ARE NOT SURE, BUT IT FEELS BIGGER THAN US



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Pasteurized Donor Human Milk Update - The King's Daughters Milk Bank

Michelle Brenner, MD, FAAP, IBCLC | Children's Hospital of the King's Daughters

The non-profit, King's Daughters Milk Bank at CHKD is celebrating its 6th anniversary this month. 2020 has proven to be a challenge on many fronts for all of us but we are grateful to the many families who have continued to "Share the Health" and donate surplus breast milk during the pandemic. Our freezer stock is at an all-time high, and we are pleased to help more inpatient and outpatient infants with a medical need. Our nutrition analyzer has enabled us to analyze and provide a milk batch analysis report (MBAR) which provides a detailed breakdown of protein and calories to hospitals. Research has demonstrated pooling the milk of 5-10 moms provides us with the highest quality batches of pasteurized donor human milk (PDHM).

Outpatient Donor Milk Coverage from TRICARE now covers prescribed PDHM for outpatient infants with certain serious health conditions. The infant and family must meet certain criteria for TRICARE to cover PDHM. Covered PDHM must come from a milk bank accredited by the Human Milk Banking Association of North America (HMBANA), like The King's Daughters Milk Bank. TRICARE may also cover PDHM in cases where the birth mother is unavailable and the baby has a serious health condition. This could be due to adoption, deployment of the mother, or maternal death.

A TRICARE-authorized provider (tricare.mil/FindDoctor/AllProviderDirectories/Network) must prescribe the PDHM.

Families can receive up to 35 ounces per day, per baby. Coverage may be for up to 12 months of age, as long as it's medically necessary. Contact The King's Daughters Milk Bank at 757.668.MILK.

WE ARE AVAILABLE TO HELP YOU NAVIGATE THE PROCESS OF ORDERING AND REORDERING.



The 2020 Virginia General Assembly

The 2020 Virginia General Assembly session had two bills involving PDHM. Both House Bills HB 367 & HB 442 were continued to 2021.

HB 442 sought to provide coverage for hospital expenses incurred in the provision of PDHM and human milk-based fortifiers for infants under 6 months of age with a medical need. This coverage would help increase the provision of life-saving donor human milk treatments to more infants in Virginia. It would also decrease health inequities by allowing all birthing hospitals to provide these treatment options to the most fragile infants. In following with the AAP guidelines, we would like to see the provision extended to 12 months of life. We were supportive of this legislation; however, it must go through review by the Health Insurance Reform Commission because of the proposed mandated health insurance benefits.

HB 367 addressed licensing of Human Breast Milk Banks in Virginia. This legislation was problematic on several fronts, primarily because of the potential detrimental impact on the access and supply of affordable PDHM in the Commonwealth. The King's Daughters Milk Bank has worked alongside the Virginia Department of Health (VDH) since its inception to provide safe, PDHM from voluntary, non-remunerated healthy donors. We have always maintained a partnership with VDH for oversight. Licensing banks doing business in Virginia would provide another layer of safety for babies in Virginia. This bill was continued until the next legislative session in part due to the concerning requirement of "testing of all donated human breast milk and breast milk derived products for the presence of nicotine, THC, opioids and opiates". While excellent in concept, this language was troubling from our experience as at present there is not an accurate way to drug test a specimen as complex as breast milk. The current ELISA drug tests on the market were developed for serum and urine, and are not FDA approved for use on breast milk. Sensitivity, specificity and reproducibility of results have been problematic, as well as an added expense. At present our voluntary, unpaid donors go through a rigorous phone screen, electronic screen, and must have endorsements of good health from both mom's physician and her infant's physician. In addition, we review maternal prenatal labs and repeat testing at the time of application for HIV1-2, Hep B, Hep C, RPR and HTLV 1/2. With each donation, donors are re-screened for intercurrent illnesses and medications—with new questions related to possible COVID-19 exposure. While this approach does not eliminate all potential risk, we are accredited by and follow the non-profit HMBANA regulations that are modeled after blood bank donor recruitment and screening. We are focused on a young, healthy, low-risk population of mothers, who are breastfeeding their thriving infant and the multi-step, multi-contributor application review. All PDHM is cultured after pasteurization and only culture negative milk is dispensed.

We continue to be grateful for the support of CHKD and all of the hospitals in the Commonwealth who trust us to provide PDHM to their infants. We continue to witness amazing donor stories, especially during the pandemic, and are honored to help over 150 bereaved families to experience and benefit from the physical, emotional and spiritual healing surrounding legacy breast milk donations. Our Memorial Donor Mermaid Wall will soon be complete to honor these families. We appreciate the support of the Virginia AAP, especially regarding the upcoming legislation. We hope to continue to work together with the AAP, VDH and our elected officials to enhance delivery of safe PDHM to all infants in the Commonwealth in need of this life-saving treatment.

For more information, please contact us:

The King's Daughters Milk Bank

www.chkd.org/Our-Services/Specialty-Care-and-Programs/Milk-Bank/

757-668-MILK

