



VIRGINIA • PEDIATRICS

American Academy of Pediatrics • Virginia Chapter

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Physician Leaving or Reentering the Workforce

Bill Moskowitz, MD, FAAP

Chair, Committee on Pediatric Workforce

It is becoming increasingly common for physicians to leave clinical practice for some period during their careers and then seek to reenter the workforce. The reasons are many and varied. The Physician Reentry into the Workforce Project (www.physicianreentry.org) **believes leaving and reentering the workforce should be regarded as a normal part of a physician's career trajectory.** As such, just like any other career move, it is something that should be carefully considered and strategically planned.

Physician Reentry, as defined by The Physician Reentry into the Workforce Project, is returning to the professional activity/clinical practice for which one has been trained, certified or licensed after an extended period. It differs in many ways from physician remediation, which the American Medical Association defines as, "the process whereby deficiencies in physician performance identified through an assessment system are corrected." The time period is not defined. There is no evidence for a discrete time period and so, convention has defaulted to the time frame of 2 years which is most often seen in the regulations of licensing boards that have such regulations. It is important for each licensee, each employer and each licensing board to realistically assess the time frame that corresponds to the complexity and risks of the specialty of the physician and to the reasons for the absence. For example, parental or child care leave might lead to a different time frame than an absence for a head injury. And the time frame for a procedural specialty might be different than for a cognitive specialty.

Why is this issue important? Perhaps the most important reason is patient safety reassurance. For physicians to continue to maintain the privilege of self-regulation, we must ensure that we keep the safety of the patients foremost. A twin rationale to patient safety is the need for better access to care at a time when physician shortages are predicted to be high. We need competent physicians back in the workforce.

The process of physician reentry involves more than the individual physician. State medical and osteopathic boards, as the regulatory authority for physicians, have a vested interest in the continued competency of the licensees they regulate as part of their ongoing obligation to protect the public. Likewise, patients and the public, better informed than ever, now demand more of their physicians. As a result, maintaining and demonstrating clinical competencies, and the measures that ensure that medicine remains a public good, are all components of the reentry process. But there are many stakeholders in this process: medical/specialty societies, regulatory groups (state licensing boards), federal agencies, hospitals, federal & state governments, specialty boards, organizations invested in physician workforce planning groups with an agenda that focus on work/life balance.

Studies and data on physician reentry are limited. Key findings from two studies (Human Resources for Health 2011, 9:7 and Journal of Medical Regulation 2010, 96(2)) include:

1. Health reasons were one of the most common reasons physicians were inactive. In the survey of inactive physicians <65 years of age, 34% of the women and 41% of the men listed health issues as the reason they left practice.
2. Another common reason for leaving reported in the same survey was the need to care for young children or other family members, although this was mainly a factor for women 35% of women compared to 2% of the men reported that the need to care for young children was a factor and 23% of women reported compared to 7% of the men reported that the need to care for other family members was a factor.

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Jane Chappell: Executive Director
2821 Emerywood Pkwy | Suite 200
Richmond, VA 23294

- Phone: (804) 622-8135 •
- Fax: (804) 788-9987 •
- email: jchappell@ramdocs.org •
- www.virginiapediatrics.org •

- Next Issue: Fall 2016 •
- Deadline for entries: 8/23/2016 •

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Samuel T. Bartle, MD, FAAP
President Virginia Chapter
American Academy of Pediatrics

President's • MESSAGE

Micro and Macromedicine

Allow me to introduce myself. I am Sam Bartle, your new president of the Virginia Chapter of the American Academy of Pediatrics. Being placed in this position is truly an honor and one which I will pursue with humility and the hope that you will help guide me over my next two year term. For the past 20 plus years I have been an active member of the AAP. For the past 13-14 of these years, I have been actively involved in various capacities with the Virginia Chapter.

During this time I have made a few observations:

Medicine is more like the economy than you can imagine. Do you recall taking economics classes in college? Did you even have the opportunity to take such a class as you prepared yourself for medical school with all of the undergraduate pre-requirements? I know I didn't! Whatever I have learned about economics has been picked up throughout my life in a basic and rudimentary manner. I do know the economy functions at two levels the microeconomic and the macroeconomics. Microeconomic is as you may know, how we manage our finances at an individual level. The Microeconomics deals with issues that pertain to a person or a household. This is me balancing my checkbook or trying to. Macroeconomics on the other hand deals with the economic system on a broader scale, like a country or a society. Macroeconomics addresses the economic concerns of a larger group and it is concerned about the broader impact and big picture. Imagine trying to balance the national debt or deal with international trade issues. Over the course of my career, I have begun to view medicine in a similar way: "Macromedicine" and "Micromedicine." The term micromedicine is not intended to mean the medicine of small things, though it does make one pause when talking about pediatric medicine. Think of micromedicine as the care and treatment provided to an individual. Think of the clinical medicine provided to patients in our clinics and offices. The concern and focus is on the children we see daily in our clinics, treating their illnesses and injuries. It is what we learned in medical school. It is the core of all of our practices. It is what most people imagine when they think of health care.

But like you, I've learned through experience that our patients do not live in isolation from the world in which they live. Where one lives, works and plays has an impact on ones health. The products that our patients and their family use; how items are made; how and what is consumed; what one is exposed to can effect not just the health of one child, but influences the health of many people. This is the focus of "macromedicine." Developing a community's health policy, it is not intended to be tailored to the specific clinical needs of an individual. This is what one would think about in macromedicine. This is the world of health and medical legislation and regulation. Consider the events of lead in the drinking water of Flint, Michigan. This is practicing macromedicine, caring for the community.

The way I see it, the Virginia APP is a conduit between the micromedicine and the macromedicine for the pediatricians in the Commonwealth. It is a means to connect the two areas of medical care and allow meaningful exchange of information. The Chapter has grown and developed over the years I have been involved. It has become an outspoken and a well-respected advocate in the state governmental arena for child health issues. In recent years the Chapter has spearheaded multiple project grants pertaining to a wide number of issues including telemedicine and the new Bright Futures guidelines. As the Chapter continues its affiliations with the pediatric medical centers of the state, it has developed and continues to grow educational programs such as the Arts & Business Conference and offering CME through our newsletter.

The Chapter is for all pediatricians. More importantly, it is for the children. And that is the best "economic lesson" of all.

Respectfully,
Sam Bartle, MD, FAAP





Outgoing President's MESSAGE

Barbara L. Kahler, MD, FAAP
Immediate Past President

As this is my last message as I leave my office as VA-AAP President, I would like to thank you all for the privilege of representing you all for the last two years. It has been a very busy time and has gone by quickly. It has been challenging, I have learned a lot. As I transition leadership over to the new team, I will be taking over the grants projects. I will be handing the reins over to Sam Bartle, MD, FAAP's capable hands. Please welcome Sandy Chung, MD, FAAP as the Vice President and Mike Martin, MD, FAAP as the Secretary-Treasurer.

Just a few departing pieces of information:

- 1) For all things Zika your local Health Department has the information you need regarding Diagnosis, testing etc.
- 2) Our grants are progressing well. We now have 6 grants in varying stages. They vary from telemedicine to advocacy. Some will be finishing up by the end of the year.
- 3) We are also pursuing several new grants. We have been approached by national AAP to partner with them on a CDC grant looking at antibiotic usage. We will be looking for practices interested in participation.
- 4) The American Board of Pediatrics now has a program where 1-10 pediatricians can design their own QI project for MOC credit. There is a brief application process available online on their website.



Sam Bartle, MD, FAAP
 presenting plaque to
 outgoing VA-AAP President
 Barbara Kahler, MD, FAAP



Robert Gunther, MD, AAP District IV Vice Chairperson presented Special Achievement Awards for Virginia Chapter members; Michael Amster, MD, Ann Kellams, MD, Russell Libby, MD and Natasha Sriraman, MD during the AAP District IV Meeting in Chattanooga, Tennessee. Accepting the awards were Sam Bartle, MD, VA-AAP President, Sandy Chung, MD, VA-AAP Vice President, Barbara Kahler, MD, VA-AAP Immediate Past President and Jane Chappell, VA-AAP Executive Director.

... Physician Leaving or Reentering the Workforce

(cont. from cover)

3. There were other less common reasons for leaving that were reported including on-call responsibilities, hassles associated with medical regulations, rising malpractice premiums, and lack of professional satisfaction

These two studies also explored factors affecting the decision to return to practice. The primary reason cited for returning to work was the availability of part-time work and the availability of flexible work schedules. This is not surprising, since the major reasons for leaving were health concerns and/or family responsibilities rather than dissatisfaction with the practice of medicine.

Another important finding: many of these inactive physicians had been out of clinical practice for >5 years.

Why do physicians reenter practice? As mentioned, the availability of part-time flexible work was an important factor cited by respondents for reentering the work force. The second most common reason cited was that they missed caring for patients. Other common reasons include financial needs, and changes in their personal circumstances: perhaps their children were now in school, elderly parents no longer needed their care or their own health had improved so they now felt that they could devote some of their time to medicine again.

The top ways physicians explore returning to practice? Contacting their state medical board about licensing (27.9%), reading about the process and/or requirements (38.3%), talking to potential employers (40.4%), and talking to professional colleagues (45.8%). Reentering physicians tend to consult their colleagues—who, if they have not reentered, are the least likely to give reliable information. It is recommended to reverse the percentages and do the first three bullets 100% of the time—especially contacting your licensing boards. And then talk to your colleagues!

Physicians who are contemplating leaving the workforce are encouraged to employ strategies that will enable them to maintain their practice skills, and to continue to practice lifelong learning.

The Reentry Project and the Federation of State Medical Boards have collaborated on two new documents aimed to assist staff of state medical boards and physicians who are seeking to return to clinical practice after some time away for non-disciplinary reasons. These products are the result of several taskforces and committees and represent a broad range of input and discussion.

Are You Preparing to Leave, or Anticipating Going Back to Clinical Practice? 6 Reasons Why It's a Good Idea to Talk with Your State Medical Board (<http://physician-reentry.org/wp-content/uploads/6ReasonsTalkwithBoardFINAL.pdf>)

Physician Reentry into Clinical Practice:

Tips for Handling Inquiries from Physicians (<http://physician-reentry.org/wp-content/uploads/TipsforHandlingInquiriesFINAL.pdf>) In summary, there are a large number of physicians who become clinically inactive and have much to contribute to our communities. It is also clear that leaving and reentering practice is common and should be considered a normal part of the physician's career trajectory. However, this career move needs to be carefully considered and strategically planned. To help with this planning, a physician reentry inventory has been developed by the Physician Reentry into the Workforce Project. The Physician Reentry into the Workforce Project serves as a clearinghouse for information and resources on physician reentry including links to publications, reentry programs, reentry policy information and much more.

The Physician Reentry into the Workforce Project's Inventory goes into detail about answers to each of these key questions and serves as a useful framework for thinking about physician reentry- before leaving the workforce.

- **What should I know before I leave?**
- **What should I do before I leave?**
- **What should I do while I am out of the workforce?**
- **What should I do now that I have reentered?**

A Suspicious Case of Abdominal Pain

Matthew Suer, MD and Cyrus Heydarian, MD

Department of Pediatrics, Eastern Virginia Medical School, Norfolk, Virginia

Abstract

Abdominal pain, vomiting, and diarrhea are common complaints in pediatrics. Distinguishing benign from harmful etiologies can be difficult, and all possibilities must be considered when clinical status rapidly deteriorates. Child abuse is common in the United States and abdominal trauma may mimic many common pediatric diseases, such as gastroenteritis, appendicitis, and intussusception. We report a case of a two-year-old male with a febrile illness presenting with acute abdominal pain, vomiting, and diarrhea, diagnosed initially with a presumed viral gastroenteritis, and later found to have traumatic small bowel perforations with peritonitis due to physical abuse.



Case

Our patient was a two-year-old healthy African-American male who presented to the ED with an acute febrile illness, manifested by abdominal pain, vomiting, and diarrhea. On the day prior to admission, he had one episode of watery, non-bloody diarrhea followed by multiple episodes of non-bilious, non-bloody emesis. The following morning, he developed a fever to 38.6° C, and was noted to be much less active and persistently irritable according to his mother. His pain was difficult to localize, though his mother observed him pointing consistently to the center of his abdomen. His appetite was also diminished, with minimal interest in eating or drinking during this time. No sick contacts were elicited. Given the rapid progression of symptoms, he was taken to the ED for evaluation. His vital signs on presentation were significant for tachypnea to 51 BPM, and tachycardia to 141 BPM. He was afebrile and normotensive. On exam, he

was noted to be ill appearing, irritable, and pale, with a weaker than normal cry. His abdomen was firm, distended, and tender with moderate to deep palpation. Bowel sounds were active. No organomegaly was appreciated. No petechiae, purpura, or ecchymosis was present. His tachypnea was attributed to pain, as his lungs were clear. His discomfort worsened with movement, such as sitting up, and seemed better while lying untouched and supine. His laboratory evaluation included a CBC with differential, significant for leukopenia a WBC count of $3.4 \times 10^6/\text{uL}$ ($5.5\text{--}15.5 \times 10^6/\text{uL}$), with 26% segmented neutrophils and 51% bands. A CMP was significant for mild transaminitis with an AST of 86 U/L ($20\text{--}60$ U/L). ALT was normal at 44 U/L ($5\text{--}45$ U/L). A lipase level was slightly elevated to 286 U/L ($15\text{--}175$ U/L), with a normal amylase level. A urinalysis was unremarkable. A KUB showed no signs of obstruction, free air, or pneumoperitoneum. A CT of the abdomen and pelvis was performed due to the significant tenderness on exam, and showed moderate free fluid in the abdomen, with diffuse bowel wall edema suggestive of enteritis. The appendix was not visualized. Our patient was presumed to have infectious enteritis, was kept NPO, placed on IV fluids, and admitted for close observation, with serial abdominal exams.

The following morning, his irritability and abdominal pain worsened despite bowel rest, with episodic increases in pain overnight. On exam, he was ill appearing, moaning throughout, with grimacing upon very light touch to his abdomen. Guarding and rebound tenderness was noted, without crepitus. His abdomen was more distended, confirmed by increased abdominal circumference since admission. An ultrasound to evaluate for intussusception was performed urgently, and was negative. The appendix again was not visualized. The pediatric surgery team was consulted with a concern for possible perforated appendicitis. He was placed on broad-spectrum IV antibiotics with Piperacillin-Tazobactam, and kept NPO with bowel rest. Over the next 48 hours, his exam worsened, with interval in-

Corresponding Author: Matthew Suer, MD
author information: Cyrus Heydarian, MD
Conflicts of Interest: none | Funding: none

crease in abdominal distention and respiratory distress. His lipase and LFTs normalized on repeat testing. A CT of the abdomen and pelvis was repeated, and showed a large amount of free air in the abdomen. He was immediately taken to the operating room and two traumatic bowel perforations were discovered. A total of approximately 12 cm of bowel were resected. Post-operatively, he developed intra-abdominal and perirectal abscesses with eventual recovery.

A multi-disciplinary team, including child abuse pediatricians, evaluated the case upon discovery of the perforations. A skeletal survey found no fractures. Upon further investigation, the patient had an extensive history of injuries. At two months, a facial bruise was found which elicited CPS involvement. He was placed in the care of an aunt. At 15 months, he suffered a burn to the thigh reportedly from water from a shower splashing him, which was untreated. At 26 months, two months prior to presentation, he fell from a bed and suffered a long oblique tibial shaft fracture treated with casting. On the day his symptoms began, he had been in the care of his father. The child was placed in the care of a relative and CPS instituted a safety plan at discharge.

Discussion

Child abuse is prevalent in the United States. According to data from the U.S. Department of Health and Human Services, over 700,000 children were victims to child abuse in 2014, with 1,546 deaths resulting (70% of whom were younger than three years old).¹ Despite its prevalence, child abuse is often under or misdiagnosed. The non-specific symptoms of abdominal trauma—vomiting, abdominal pain, diarrhea, and fever—have a wide differential in the pediatric population. Furthermore, the combination of these symptoms may be associated with a variety of benign and severe diseases, such as viral gastroenteritis, bacterial enteritis, bowel obstruction, appendicitis, intussusception, Henoch Schonlein Purpura, and inflammatory bowel disease (see table). In cases with severe abdominal pain, it is imperative for physicians to consider the possibility of child abuse, specifically traumatic abdominal injury.

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Without pathognomonic findings indicative of child abuse, this diagnosis can be difficult to reach. Histories are frequently misleading as they are often obtained from a parent, who is the guilty perpetrator in 80% of cases.¹ An awareness of risk factors for abuse is imperative. Parental drug use, poor socioeconomic status, mental health disease, young and/or single parent households, history of domestic violence, poor parental education, and multiple caregivers in the home have been identified as specific risk factors for abuse.²

Traumatic abdominal injury is a common form of child abuse. In pediatric victims, two to nine percent had occult abdominal trauma.^{3,4,5} It ranks 2nd to abusive head trauma in causes of death due to abuse. However, screening for abdominal trauma in children with suspected abuse occurs infrequently. In a study of 244 children with suspected abuse, only 20% were screened for abdominal injuries. Of the 41% who had a positive lab screen, 10% had abdominal trauma. Physicians were more likely to screen for abdominal trauma with associated head trauma (OR 20.4), inclusion of a child protection team (OR 8.5), or in consultation with specialists (OR 24.3). Children were less likely to be screened if they were seen in emergency departments during busier times (4 pm to 11 pm).³

The physical exam findings of traumatic

abdominal injury may be falsely reassuring. In a study of 82 children found to have abdominal injuries due to abuse, only 57% had overt physical exam signs (abdominal ecchymosis, tenderness and/or distention, abnormal bowel sounds).⁴ Conversely, in a study of 168 children with blunt abdominal trauma, all nine children with an isolated small bowel injury (MVA or bicycle accident) presented with abdominal wall ecchymosis.⁵

In the case of suspected abuse, laboratory evaluation is the first-line screening tool for abdominal trauma. Liver function tests (LFTs) have classically been used to evaluate for liver injuries. A recent study has suggested a cut-off of 109 U/L and 97 U/L for AST and ALT, respectively.⁶ However, significant liver injury is possible beneath this threshold. Karam et al report two patients with grade III liver injury after blunt abdominal trauma with ASTs of 95 and 92 and ALTs of 80 and 86.7 In a study of children suspected to have physical abuse without signs of abdominal trauma, Coant et al document four of 49 children with elevated LFTs and LDH, three of which were found to have liver lacerations. Of these, one infant had AST of only 81 U/L and ALT of 27 U/L.⁵ One recommendation is to pursue further investigation for abdominal injury if the transaminases are ≥ 80 U/L² which has been shown to have a sensitivity of 83.8% and specificity of 83.1%.⁴

Lipase can be a useful marker for intra-abdominal injury as well. Using a threshold of 100 U/L, a sensitivity and specificity of 62% and 79% can be achieved.⁴ It can be helpful to find abdominal injuries in cases of normal transaminases. Of 143 children with concern for abuse, nearly five percent with elevated lipase and normal LFTs had an intra-abdominal injury.⁴ Conversely, amylase has not been shown to be a useful marker as it failed to identify children with abdominal injuries who had normal LFTs and lipase.^{4,5}

Hematuria may be a useful marker for both genitourinary and abdominal injuries. Of 95 children hospitalized for blunt abdominal trauma, 55 had gross or microscopic hematuria. Interestingly, 71% had an intra-abdominal injury while only 33% had a genitourinary injury.⁸ However, when used to screen for occult, abusive abdominal trauma, only 1 of 26 had hematuria.

Leukocytosis also might be an indicator for small bowel injury. In a study of 46 children and adults with a traumatic, isolated intestinal injury, elevated WBC ($>12,000/uL$) was present in 85% (vs. 45% control).⁹

In children with suspected traumatic abdominal injury, even without clear laboratory abnormalities, a CT of the abdomen and pelvis is the imaging modality of choice to investigate further. The most commonly affected organs are the liver and spleen.



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Differential diagnosis of acute abdominal pain and vomiting in toddlers

Infectious	viral gastroenteritis, bacterial enteritis, urinary tract infection, pertussis syndrome, otitis media, pneumonia, Streptococcal pharyngitis
Obstructive	Constipation, bowel obstruction, intussusceptions, volvulus, Meckel diverticulum, Henocho Schonlein Purpura, hernia
Inflammatory	Appendicitis, Inflammatory Bowel Disease, pancreatitis, food intolerance or allergy, angioneurotic edema, acute intermittent porphyria
Mass	Lymphoma, neuroblastoma, Wilms tumor
Miscellaneous	Ingestion, testicular torsion, Reye syndrome, hepatitis, diabetic ketoacidosis, sickle cell crisis



Bowel injuries are often to the duodenum and jejunum and can range in severity from hematomas to perforations.² Peritoneal fluid, a sign of solid organ injury, can be seen in 84-90% of abdominal trauma cases.^{8,9} A systematic review of free peritoneal fluid present in blunt trauma did find that no solid organ injury was present in three percent of cases.¹⁰ Additionally, free peritoneal fluid can be seen in many other pediatric diseases, such as acute gastroenteritis¹¹ and inflammatory bowel disease,¹² making its presence difficult to interpret. The degree of peritoneal fluid and location(s) can help to distinguish between benign and serious diseases.¹³

Significant abdominal injuries may be difficult to detect, especially in the early stages of disease without clear historical or exam findings suggestive of abuse. The significance of a delayed diagnosis is unclear. While adult studies have clearly showed increased mortality with delayed diagnosis,⁹ the limited data on children is less convincing. Of nine patients with an isolated small bowel injury following blunt abdominal trauma, six had a delay in diagnosis (>4 hours from admission). Clues to a significant abdominal injury were fever, tachycardia, and poor urine output. Their hospital course was not significantly different than their counterparts despite all requiring operative intervention.⁸ More research is needed to determine the impact of delayed diagnosis.

Conclusions

Our case highlights the importance of considering child abuse, specifically traumatic abdominal injury, as a possible etiology of acute abdominal pain, irrespective of clear historical, examination, or laboratory findings. Traumatic abdominal injury may present with non-specific symptoms such as abdominal pain, vomiting, diarrhea, and fever, and may be mistaken for common pediatric diseases, such as gastroenteritis, appendicitis, and intussusception. When suspected, screening labs including a CBC, liver function tests, and a lipase may be helpful, though a CT of the abdomen and pelvis is the best imaging modality to evaluate for traumatic abdominal injury.

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CHKD Community Garden: A Resident Led Outreach Initiative

Peter R. Farrell, MD, MS, Michael E. Rogers, DO, Steven K. Brady, DO, Katherine Beckett, MD, Sara Staples, MD, Melody Persinger, MS, RD, CSP, Katie Bokelman, DO, Zoya Khokar, MD, Tina Feeley, MD, Abigail Winz MS, MBA, J. Paige Frazer, MD, Leslie Magida Farrell, MD



The Children's Hospital of The King's Daughters (CHKD) community garden is an example of a sustained contribution to the Tidewater community that the CHKD Pediatric residency class of 2016 will leave behind as they embark on the next chapters of their professional careers. In the spring of 2014 three interns, with significant support from the faculty and staff of CHKD, founded what is now known as the CHKD Community Garden. The goal of the garden was modest; to provide basic gardening skills combined with sustainable lifestyle approaches that could be taught to members of the local community in one hour weekly sessions. Over the course of the first year, the team behind the garden rapidly grew to include numerous other members of the house staff, community pediatricians, and a local nutritionist.

During the first growing season, over one dozen parent-child dyads participated and learned from the garden, demonstrating significant improvement in attitudes toward healthy living on a post-participation survey. Residents who participated in the garden project honed their leadership and advocacy skills, while at the same time they learned the basics of curriculum development as they sought to educate the groups of 6 to 12 year-old children and their parents. An

unexpected benefit was the excitement and interest in nutritional education and community outreach that grew among the residents not directly involved in the garden. The garden provided an example of achievable advocacy despite the limited time and resources inherent to residency. It also provided an opportunity to teach residents about pediatric nutrition and successful strategies for counseling families about healthy eating. It served as a fun and friendly way to introduce the conversation of obesity and dietary changes into the well-child visit, and time in the garden offered additional occasions to provide anticipatory guidance to the families.

Following the first year, the Tidewater community rallied behind the CHKD garden and provided financial contributions for its expansion. During the second growing season, new planters were added and motivated members of the house staff recruited more parents and children. Not surprisingly, many of the children who had enjoyed the garden the first year returned the second year to participate yet again. During the off season between the second and third years, members of the garden committee wrote a children's book entitled "Does Broccoli Grow on Trees." The proceeds will fund subse-

quent garden planting and growing seasons.

As word of the CHKD garden spread around the community, the resident and medical student volunteers were invited to bring messages of healthy eating and the benefits of sustainable food production to the local middle school three times. Each year, a new crop of interns has been inspired to volunteer in the garden, providing continuity to the garden's leadership as senior residents graduate. Similarly, medical students have also joined the effort annually with such positive results that Eastern Virginia Medical School (EVMS) is encouraging students to get involved and participate as part of their focus on community engagement.

We are currently enjoying our third growing season with many new and returning families participating. In fact, one of the participants is now too old for our target population, but has returned as a junior counselor and takes an active role in teaching younger participants and modeling healthy eating behaviors.

The CHKD community garden met its intended goal of providing patients and their families with nutritional education to encourage healthy lifestyles. The garden has also become a real world laboratory in which the medical students and resident volunteers learn the importance, power, and enjoyment that can be found in community activism and advocacy. This endeavor has led to multiple resident quality improvement projects and has served as a model for achievable advocacy and physician leadership within the community. Although the residency class of 2016 is moving on, the CHKD Community Garden will continue to grow in the capable hands of the current house staff who have taken ownership of the project with the full support of EVMS and CHKD.



For more information:
contact garden@chkd.org
or check out our facebook
page at www.facebook.com/CHKDgarden/

Updates in the Management of Anorexia Nervosa

Kyrie L. Shomaker, MD, FAAP

Eating disorders (EDs) are serious mental health conditions associated with significant medical and psychological morbidity. Anorexia nervosa (AN) is the most deadly psychiatric illness, with mortality rates exceeding 5%.¹ Over 24 million people in the U.S. are affected with an ED, and in recent decades diagnoses have significantly increased in children <12 years old and males.² In Virginia, about 240-280 children and adolescents are treated in hospitals each year for EDs.² Experts believe that reported prevalence rates of AN and other EDs are grossly underestimated: national high school screening has estimated that over 11% of students may have a diagnosable ED.³

The Diagnostic and Statistical Manual, 5th Edition (DSM-V), released in 2013, broadened criteria for diagnosis of AN and bulimia nervosa (BN), and replaced ED not otherwise specified with descriptions of a variety of conditions that better reflect the breadth of ED experience, including binge eating disorder, avoidant/restrictive food intake disorder (such as swallowing phobias and textural aversions), atypical (normal weight) AN, subthreshold BN, purging disorder, and night eating disorder.^{1,4}

Primary care physicians play a critical role in the diagnosis, initial management, and coordination of care for children and adolescents with EDs. Though most youngsters will be managed in the outpatient environment, some, depending on their severity of illness and safety considerations, may require more intensive intervention in the hospital setting. Suggested criteria for the inpatient management of AN and BN are provided in Table 1; these criteria describe children and adolescents at higher risk of morbidity, mortality, and refeeding syndrome who require more aggressive medical management than may be available at a day or residential treatment facility specializing in the treatment of EDs.

When a child or adolescent requires hospitalization for medical stabilization of an ED, aggressive nutritional rehabilitation is appropriate. Family members should be informed that severe malnutrition is a medical emergency, and that nasogastric tube feedings may be life-saving and required if



the youngster is not physically or psychologically capable of consuming the food intake recommended. Studies of adolescents with AN have shown that nutritional restoration starting with higher calorie intake (1,400-2,000 kcal/day rather than <1,400 kcal/day) and judicious phosphate repletion facilitates earlier weight restoration and drastically reduces length of acute inpatient stay without increasing the incidence of refeeding syndrome.⁵ Even so, the typical length of stay for medical restoration is about 7 days, with a high rate of readmission for patients discharged home at <90% of their ideal body weight.⁶

Once medical stabilization and early weight restoration have taken place, the child or adolescent is more likely to be cognitively capable of participating in the ongoing therapy required to recover from his or her ED.

Family-based treatment (FBT), or the Maudsley method, is the most effective treatment method available for AN and has become the first-line therapy for pediatric EDs.⁶ FBT focuses on empowerment rather than blame, and takes place in three phases, typically over 6-12 months: in Phase 1, caregivers take control over food and eating and are coached to refeed their child back to health, weight restoration, and healthy eating habits. In phase 2, control over eating is gradually transferred back to the child or adolescent. Phase 3 focuses on relapse prevention and any remaining developmental considerations prior to treatment termination. With FBT, 50%-60% of patients achieve full remission within 1 year, 25%-35% have partial recovery, and only 15% do not respond to treatment, compared to 5-year recovery rates of <50% using traditional methods.^{6,7}

AN can be a devastating illness for a patient and his or her family, but with coordinated multidisciplinary care across the continuum of settings available within the region, healing and even cure of this disease is attainable.

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Table 1

Anorexia Nervosa	Bulimia Nervosa
	Syncope
Systolic blood pressure <90 mm Hg	Serum potassium <3.2 mmol/L
Orthostatic changes in pulse (>20 beats/min) or blood pressure (>10 mm Hg)	Serum chloride <88 mmol/L
Arrhythmia	Esophageal tears
Temperature <96°F	Cardiac arrhythmias including prolonged QTc
<75% ideal body weight or ongoing weight loss despite intensive management	Hypothermia
Body fat <10%	Suicide risk
Refusal to eat	Intractable vomiting
Failure to respond to outpatient treatment	Hematemesis
	Failure to respond to outpatient treatment

From Campbell K and Peebles R. Eating disorders in children and adolescents: State of the art review. *Pediatrics* 2014;134:582-592.

Medication Safety in the Home

Arno Zaritsky, MD

Professor of Pediatrics, Eastern Virginia Medical School

A 6-month-old was admitted to the PICU due to marked somnolence with miosis and bradycardia. Review of medication history revealed that the infant was recently discharged following a prolonged PICU stay with clonidine being given for opioid withdrawal. On careful history, it was found that the child's grandmother misinterpreted the clonidine dose instructions and gave 1.3 mL rather than 0.13 mL.

Medication errors are more common in the home than most providers realize. Despite efforts to improve over-the-counter (OTC) and prescription medication safety, studies over the last 40 years consistently show that 40-60% of parents make a 20% or greater error in dosing. One of the main reasons for this is the continued use of teaspoons despite AAP recommendations to write liquid medications in "mL" rather than teaspoon volumes.¹ A recent study showed that including "teaspoon" in the prescription encourages caregivers to use that device² despite multiple studies showing that a home teaspoon can vary widely in volume. To paraphrase Mary Poppins, a spoon is for the sugar, and should **not** be used to help the medicine go down.

Most clinicians assume that if you write for the dose in mL, the pharmacy will use that unit of measurement on the label, but a review of liquid prescription labels from dispensing pharmacies in Philadelphia and the surrounding suburbs found that ~25% of the labels were changed from what was written, including changing a mL prescribed dose to teaspoons or teaspoons plus mL on the label.³ This study highlights that a dispensing pharmacy has the option to modify the label. In addition, if a pill or capsule is available in different strengths, a dispensing pharmacy may change the form given from what was prescribed. Even though the dispensing pharmacy changes the label it can lead to confusion because the verbal or written discharge instructions does not agree with what is on the prescription label. The vast majority of medications used in children are given in the home without the same systems used in the hospital to assure that the right medication is given at the

right time and dispensing the correct dose. Every nurse learns the five rights of medication administration and healthcare providers understand mL doses, but it is reasonable to expect that caregivers understand mL units and are as safe in giving medications at home, especially in children with more complex medications? Multiple studies show that caregivers often do not understand how to measure the correct dose using a dosing syringe or cup,^{4,5} but this can be improved with the use of a picture of the dosing syringe showing the exact dose.⁶ It is likely that this type of illustration would have prevented the error described above. It is interesting to note, however, that even using a picture of a dosing cup leads to more measurement errors compared with a dosing syringe.⁷

Several studies using in-home observation of medication administration by caregivers noted frequent errors, some of which had significant potential to cause harm.^{8,9} The investigators were surprised at the frequency of communication errors in the home leading to either missed doses or duplicated doses because of assumptions about whether another caregiver gave or did not give a dose. Overall, medication errors were observed in 39% of children with sickle cell disease and 22% of children with seizure disorders. As expected, OTC dosing errors of acetaminophen and ibuprofen were common (56%) with most children being underdosed leading to inadequate pain or fever control.

They also noted that 95% of parents/caregivers who did not use a support tool at home (e.g., a calendar, alarm or reminder system) experienced a medication error. In the homes of children with cancer, medication errors were observed in 3 to 15% of the total doses given.⁹ When you consider that the caregiver knew they were being observed, it is likely that these observations underestimate the frequency of home medication errors. They also noted that the labeled dose often did not agree with the current dose given, which typically arose because of dose adjustments made by providers. This highlights the need for caregivers to



use some system to assure that the changed dose was documented and shared among the caregivers, which may include sitters or daycare providers.

Another reason for a discrepancy between the label and medication discharge instructions is that many medications are not available in a commercial form for children so they are prepared into a liquid preparation. Unfortunately, there is no standardization for extemporaneous preparation of solid medications into a liquid form (i.e. "compounding"). Hospitals use their standard, but the dispensing pharmacy may use a different concentration. When this occurs, the dispensing pharmacy appropriately changes the label, but now written or verbal hospital discharge or office visit instructions will not agree with the prescription label. Errors may occur when a child is re-hospitalized and the parent reports the dose given as a volume, assuming that the hospital-based concentration was used, leading to under- or overdosing. These types of errors led to a statewide survey of pharmacies in Michigan to evaluate the extent of variation in oral liquid compounding practices.¹⁰ They identified 147 medications compounded at the four children's hospitals in the state; the community pharmacies and hospitals reported preparing 470 different concentrations for these medications. There was a median of 3 different concentrations used for each medication with up to 9. In the clonidine example, there are 6 different ways to prepare a liquid formulation. Of note, 21.8% of the medications had formulations that varied between 10-fold and 30-fold in concentrations and 6.9% of the formulations differed by 30-fold to 50-fold!

Medication Safety in the Home

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Based on the results of this survey, Michigan launched a statewide initiative to standardize the compounding of oral liquid medications based on best evidence. These standards are freely available through the web site they created: <http://www.mipedscompounds.org/>) and could be adopted in Virginia with the assistance of the Virginia Chapter of the AAP. The Michigan providers recognized that there may be exceptional circumstances where a different concentration from the standard may be needed, but these concentrations should be the exception and standard concentrations should meet the needs of most children.

In recognition of the frequency of home medication errors and our own experience with a number of these errors impacting the care of children, a team of investigators at Children's Hospital of The King's Daughters (CHKD) submitted a successful grant proposal to the Cardinal Health Foundation to develop improved medication discharge instructions that incorporated personalized instructions, including a picture of the dosing device showing the exact dose to dispense. Following chart review of emergency department instructions, we noted a number of opportunities to improve medication instruction clarity. We are now surveying families of hospitalized children with medical complexity (defined as being discharged on four or more medications, including OTC medications) to determine their satisfaction with our current discharge instructions. We will then implement a medication instruction system, working with a cloud-based vendor (Polyglot™, <http://www.pgsci.com/>) and evaluate caregiver satisfaction with this system. Since limited English proficiency is associated with an increased likelihood of home medication errors,¹¹ an advantage of this system is that the instructions are available in 21 different languages. The instructions will include a dynamically created illustration of the correct dose and a consolidated dosing calendar to document when medications are given. So what can you do today? The first step is to recognize that home medication errors are likely more common than you realize. Secondly, only write for liquid medications in mL units and avoid the use of "teaspoons." Third, show the caregiver how to correctly measure the dose of a liquid medication. Fourth, realize that your verbal or written instructions may not be recalled correctly, or may not agree with the medication label from the pharmacy. Especially for compounded medications, or medications that come in different strengths, when the patient is admitted or seen back in the office, document not only the volume or number of pills given, but also confirm the concentration or pill strength. Finally, encourage caregivers to use a support device, such as a dosing calendar or one of the freely available smartphone apps that can be programmed to remind users to take their medication. This is especially important for children on multiple or complex medication regimens.

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2016 Building Bridges Between Early Education and Pediatric Health and Wellness Symposium!

Reach Out and Read Virginia and Children’s Hospital of the Kings Daughters hosted their inaugural “2016 Building Bridges Between Early Education and Pediatric Health and Wellness Symposium!” for medical providers and early education and literacy colleagues. Friday, May 20, delivered a beautiful day at Lewis Ginter Botanical Gardens as well as brilliant and inspirational speakers came enlightened participants, conversation and opportunity! All went home believing that one child at a time changes families and the momentum continues as we build healthy and literate communities!

Reach Out and Read National Medical Director Perri Klass was the inspirational keynote speaker: “Books Build Better Brains” - a Celebration of Pediatric Literacy.”



Congratulations to Robin Foster, MD, FAAP was the first recipient of the Reach Out and Read VA Medical Champion Award!

READ OUT LOUD!



Virginia FAMIS Program News

New data show that 75,000 Virginia children are eligible for free health insurance through the state-sponsored FAMIS programs (which include FAMIS, Medicaid for Children or FAMIS Plus), but they are not enrolled. More than 580,000 – or 25% - of Virginia’s children are enrolled in Virginia’s FAMIS Programs. Children younger than 19 can qualify for FAMIS, if their family’s household meets income limits and the child is a U.S. citizen or meets residency requirements. For a family of four, the income limit is \$49,815 yearly. There are no monthly or yearly fees to participate in the FAMIS programs. Some families may have to pay a small co-payment (\$2 or \$5) for some medical services.

Virginia’s FAMIS Programs cover routine care that all kids need to stay healthy – such as shots, developmental screenings, and dental and vision checkups. They also help pay for like eyeglasses, filling cavities, behavioral health care and other services. Most importantly, the FAMIS Programs cover hospitalizations and related expenses if the child gets sick or has an accident.

While the FAMIS Programs have been in place for more than 15 years, there have been a number of recent changes to the FAMIS programs, including expanded eligibility

criteria and new benefits, which may be of interest to you:

- Dependent children of state employees may apply.
- Breast pumps and lactation consultation services are available to all pregnant and postpartum women enrolled in Medicaid, FAMIS or FAMIS MOMS. A woman may request a free breast pump or lactation consultation at any point during her coverage period, if she intends to breast feed her baby, by talking with her doctor. Electric breast pumps will require pre-authorization by the provider. Please review this Fact Sheet for more information.
- Children born to mothers enrolled for the FAMIS Programs on the day the child is born are “deemed” to have applied and been determined to be eligible for coverage; no application or eligibility determination needs to be completed for the newborn. A renewal of eligibility, rather than a new application, should be completed to determine ongoing eligibility for the child. This should help toddlers maintain coverage, increasing the likelihood that they will get to their recommended appointments.

- Starting July 1, 2016, Behavioral Therapy will be a covered benefit for children enrolled in any of the FAMIS Programs. Behavioral Therapy covers services including, but not limited to, Applied Behavior Analysis (ABA).

Reminder: The Early and Periodic Screening, Diagnostic and Treatment (EPSDT) benefit provides comprehensive and preventive health care services for children under age 21 who are enrolled in Medicaid. EPSDT is key to ensuring that children and adolescents receive appropriate preventive, dental, mental health, and developmental, and specialty services. A treatment or medical need diagnosed during an EPSDT visit must be paid by Medicaid.

To ensure your families and key staff have all the information they need about the FAMIS Programs, you may wish to:

- Order FAMIS posters or brochures, available free of charge from Cover Virginia.
- Encourage administrative or billing staff to sign up to receive a quarterly newsletter with up-dates on the FAMIS programs.
- Suggest administrative or billing staff participate in a SignUpNow training, held each Spring and Fall across the Commonwealth.

Reinforcing Pediatrician Value and Impact on EHDI

Excerpts From Commentary by Robert Cicco, MD, FAAP

Member, Early Hearing Detection and Intervention Leadership Team | American Academy of Pediatrics

Universal newborn hearing screening is now standard practice across the country and has resulted in earlier diagnosis and treatment for many babies. Yet despite this success, there are numerous unresolved issues that can impact timely care for children who are Deaf or Hard of Hearing. As pediatricians, we must be especially sensitive to two of these issues. The first is that nationally 30% of babies who do not



pass their newborn screen are lost to follow-up or documentation. A number of these cases of “loss to follow-up,” however, are actually cases where the family has simply decided that they did not need the follow-up since they felt their baby was “fine.” This feeling can be reinforced if the family is given the impression that the screen is not accurate or told not to worry because “it’s probably just some fluid.” As pediatricians, we have the responsibility to impress upon our patients the need to receive necessary follow-up, especially when there is reluctance on their part to do so. This may take time, but the time will be well spent if it results in an earlier diagnosis.

We also need to remember a second important issue. Newborn screening will not pick up many cases of mild hearing loss or children with progressive or later onset hearing loss. Too often, families are left with the impression that, if a newborn hearing screen is passed, they

never have to worry about their child developing a problem with their hearing. Pediatricians can even feed into that misconception by reassuring parents who have a concern with statements like, “I’m sure it’s not that. Remember he passed his test as a baby!”

All families should be asked about risk factors that may lead to late onset or progressive hearing loss and those factors must be documented with a plan to monitor that child more closely. But remember two things: first, most children who develop hearing loss after a normal newborn screen will NOT have identified risk factors, so if you have a concern, do not let the absence of risk factors keep you from moving forward with an evaluation; second, remember THE most important risk factor is ANY parental concern about their child’s hearing—that should always trigger a referral for an evaluation.

Risk Factors Associated with Permanent Congenital, Delayed Onset, or Progressive Hearing Loss in Childhood. 2007 Position Statement by the Early Hearing Detection and Intervention Program.

- Caregiver concern regarding hearing, speech and language development
- Family History of permanent childhood hearing loss
- Neonatal intensive care of more than 5 days or ECMO, ventilation, ototoxic drugs, exchange transfusions
- In utero infection with CMV, herpes, rubella, syphilis, or toxoplasmosis
- Craniofacial anomalies; Syndromes associated with congenital hearing loss; syndromes with late or progressive hearing loss
- Postnatal infections associated with sensorineural hearing loss (herpes, varicella, and bacterial meningitis)
- Head trauma; chemotherapy

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