

THE Journal

OF THE ARKANSAS MEDICAL SOCIETY

Vol.115 • No. 8

FEBRUARY 2019



Time to Talk About Healing

*The Importance of Acknowledging Physician Distress
Before it Becomes Physician Suicide*

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ON THE COVER

Time to Talk About Healing
*The Importance of Acknowledging
Physician Distress Before it
Becomes Physician Suicide*



174

COMMENTARY

173

Sandy Johnson, MD

**A Closer Look
at Quality**

180

*Winner of the ASAE Excellence
in Communications Award*

THE Journal

OF THE ARKANSAS MEDICAL SOCIETY

Volume 115 • Number 8 February 2019

Established 1890. Owned and edited by the Arkansas Medical Society and published under the direction of the Board of Trustees.

Advertising Information: Penny Henderson, (501) 224-8967 or penny@arkmed.org. #10 Corporate Hill Drive, Suite 300, Little Rock, AR 72205.

Postmaster: Send address changes to: The Journal of the Arkansas Medical Society, P.O. Box 55088, Little Rock, AR 72215-5088.

Subscription rate: \$30.00 annually for domestic; \$40.00, foreign. Single issue \$3.00.

The Journal of the Arkansas Medical Society (ISSN 0004-1858) is published monthly, by the Arkansas Medical Society, #10 Corporate Hill Drive, Suite 300, Little Rock, AR 72205. (501) 224-8967.

Printed by The Ovid Bell Press Inc., Fulton, Missouri 65251. Periodicals postage is paid at Little Rock, AR, and at additional mailing offices.

Articles and advertisements published in The Journal are for the interest of its readers and do not represent the official position or endorsement of The Journal or the Arkansas Medical Society. The Journal reserves the right to make the final decision on all content and advertisements.

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WHAT HAVE WE DONE FOR YOU LATELY?

172

DAVID WROTEN, EXECUTIVE VICE PRESIDENT

The 92nd General Assembly Begins



STUDY

A Rare Case of "Blue Pseudo-polyposis"

Abhilash Periseti, MD; Saikiran Raghavapuram, MD;
Nayana George, MD; Debdeep Banerjee, MD; Benjamin Tharian, MD

178

SCIENTIFIC ARTICLE

Neonatal Abstinence Syndrome in Arkansas

Jonathan Aram, MPH; Alan Mease, MD;
Taniesha Richardson-Wiley, MPH; Betty Bohanna; Jessica Coker, MD

182

Derm Dilemma



Kyle Sandiford, MD;
Logan Rush, MD

186



CASE REPORT

**Rhabdomyolysis From Atorvastatin and
Levofloxacin in an Elderly Patient With Renal Failure**

Lilianna Hanefeld-Fox, MD; Sai Prasad Desikan, MD;
Caston Taylor, PA; Seth Barnes, MD; Raman Desikan, MD

188



PEOPLE + EVENTS **190**



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The 92nd General Assembly Begins



DAVID WROTEN
EXECUTIVE VICE PRESIDENT

The Arkansas General Assembly is just beginning, and your profession is already being attacked from all sides. What you do over the next 60 days can and will determine the outcome on several important issues.

First and foremost, it seems like everyone wants to be a physician without having to go to medical school. Each session has its share of “scope-of-practice” bills, but this is certainly one for the books. Here is a quick look at what is on deck. There will likely be others as well, but these are the ones we already know about.

- » Optometrists want the Legislature to give them the right to perform surgery on your eyes. Yes, that’s right. Scalpels, lasers, needles, you name it. They have hired multiple contract lobbyists and PR firms to help them in their efforts.
- » APRNs will be back for the umpteenth time with multiple bills to try to circumvent medical school. They want to remove the collaborative practice requirement, write Schedule II prescriptions, mandate that Medicaid treat them as PCPs, and get paid on an equal basis as physicians. Also included in their issues are the CRNAs who want to repeal the physician supervision requirement.
- » Pharmacists are in the game as well. They want to dispense oral contraceptives and smoking cessation drugs and give immunizations to our children through what they’re calling a “statewide protocol.” That’s basically an open-ended prescription with a single physician at the health department, allowing pharmacists to dispense without a doctor’s prescription for a specific patient.

I hope you can appreciate the challenge these scope bills present for the AMS. Most legislators understand the education and training differences between physicians and these other groups, but remember: this is a political issue and legislators respond to constituents. Each of these provider groups are organized, and they rally their members to send emails, make phone calls, show up for committee hearings, and talk to their legislators while home in the district. They are important constituents to legislators and each have their role in providing health care to patients. Optometrists are good at what they do, but they are not trained to be eye surgeons. APRNs are important and do good work, but their training cannot compare to a three-year family practice residency.

Don’t think for a minute that legislators won’t support legislation that you think is obviously flawed for lack of training and education. That’s a quick way to lose. **THEY NEED TO HEAR FROM YOU.** It’s better if when you call, they know you. As the session progresses, you’ll receive alerts and “calls to action” from your AMS legislative staff. What you do with those alerts will most definitely determine what happens to these scope-of-practice bills. Some represent a direct attack on your profession and an affront to the years of education and training you’ve gone through to become a physician. You are all in this together. Not just ophthalmologists; not just family practice, not just ob/gyns. All of medicine must come together when we send a call to action.

What makes these scope fights even more difficult is that they limit our resources to pass our own legislative initiatives. You’ll be hearing about those as well...stay tuned! AMS

>> What you do with those alerts will most definitely determine what happens to these scope-of-practice bills.

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Sandy Johnson, MD

Thank You!

Congratulations to all of us. We are so blessed to practice the best vocation in the best state in the best country at the best time in history. We should all be overjoyed and feel an attitude of gratitude. Every year since we opened our clinic (Johnson Dermatology), we celebrate a month of gratitude in November. This month of gratitude is my favorite month of the year. We talk about ways to show gratitude for the people and things in our life for which we are grateful. I'm writing this commentary during the month of November and feel honored that I am given this opportunity to write an extra commentary for all of you for the Feb. 2019 edition of our great journal – *The Journal of the Arkansas Medical Society*. What a great month February is — the days are getting longer, love is in the air, and spring is right around the corner. Life is great, and we have so much for which to be grateful.

>> I know I personally feel better when I choose to perform a random act of kindness, pay it forward, or say thank you.

I'm currently reading a book on gratitude. It was given to me by my wonderful life partner/husband, father of our wonderful children, and business partner, and it's called *Thanks a Thousand: a Gratitude Journey*, by A.J. Jacobs. The author states that he is generally a grumpy person with a good life. In order to more fully appreciate life, he has decided to "fake it until he makes it" when it comes to gratitude. He even shares the quote, "It's easier to act your way into a new way of thinking, than think your way into a new way of acting." So, he challenges himself

to thank every single person involved with producing his morning cup of coffee. The book is very short and has an associated TED talk. It is truly transformative in my opinion. One may take for granted their morning coffee. However, if you stop to think about every person involved with getting you that coffee, it will make you appreciate the coffee even more. Throughout his journey, he realizes that there are an insurmountable number of people to thank, so he limits it to thanking only 1,000 people. During the journey, Jacobs also learns that people with an attitude of gratitude tend to be kinder to others. He also learns that an attitude of gratitude creates a happier, kinder, and more meaningful life for the person and the people around the person. It is an upward spiral. I know I personally feel better when I choose to perform a random act of kindness, pay it forward, or say thank you. I would like to challenge each of us to share an attitude of gratitude with others. I bet it will pay off in so many ways. I bet we all feel better. I bet we help others feel better. After all, we have all chosen careers in medicine to help others. This attitude of gratitude will help us feel better and hopefully help our patients feel better. We all know that a healthy attitude also helps our mind, body, and soul to be better.

The toughest tasks in our clinic are answering the phones and working the check-in and check-out areas. If these people feel grumpy, patients who interact with our clinic may also feel grumpy. If we providers take time to thank these team members, they may feel happier and treat our patients with more kindness; in turn, patients may have better clinic experiences. This will make us happier, too. It is an upward spiral. If you expand that thought process out from our clinic into our

whole world — wow. Think about how much happier our world would be if we all took time to show gratitude. Not only will our coffee taste better, but our entire world will seem better.

Thank you for taking the time to read this article. Thank you for being you. If I get the privilege of seeing you, remind me that you read this article. I would like to buy you a cup of coffee and talk about all of the people and things for which we are grateful — including all of the people involved in getting us that great cup of coffee. Until then, stay skintastic! **AMS**



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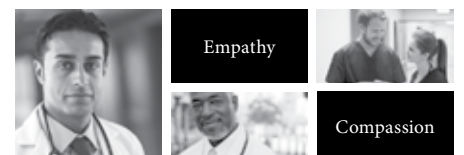
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Time to Talk About Healing

The Importance of Acknowledging Physician Distress Before it Becomes Physician Suicide

“It’s hard for me to fathom ... I don’t think I ever truly wanted to die, but I made a legitimate attempt at it.”

– Troy Birk, MD

One wearisome night in May 2017, Orthopaedic Surgeon Troy Birk, MD, tried to take his own life. He was employed at National Park Medical Center in Hot Springs at the time. Thankfully, he found the clarity to get help before it was too late.

A living reminder of the devastating nearness of physician burnout and suicide, Dr. Birk’s surprise at his own actions are a relatively common sentiment among physicians who survive an attempt. “Doctors choose suicide to end their pain (not because they want to die),” wrote family practice physician-turned-activist Pamela Wible, MD, in the Medscape article, “Why ‘Happy’ Doctors Die

by Suicide; The Consequences for Physicians of Acknowledging Mental Illness.”

“In absence of support, doctors make impulsive decisions ... I asked several male physicians who survived their suicides, ‘How long after you decided to kill yourself did you take action? The answer: 3 to 5 minutes ... with a great work ethic until their last breath, doctors are often checking in on patients, reviewing test results, and dictating charts minutes before orchestrating their own suicides. Many leave apologetic, heartfelt letters for friends, family, and staff, detailing the reasons for their suicide. One orthopaedic surgeon simply wrote: ‘I’m sorry I couldn’t fix everyone.’”

As healers, we are aware of depression and suicide, but that doesn’t make it easy to discuss the loss of someone within our ranks or to understand the reasons why. Dr. Birk attributes some portion of the problem to the exacting standards that come with the territory in this “saving” profession. “We’re often expected to be perfect when, of course, none of us are,” he said. “Also, we’re often trained to show no weakness, so many times our weaknesses are internalized or manifested in other ways.”

Once suicidal herself, Dr. Wible has devoted years to researching the reasons why. A prolific author and speaker on the subject, she has gathered information on well over a thousand suicides so far. “High doctor suicide rates have been reported since 1858,” she wrote. “Yet 160 years later, the root causes of these suicides remain unaddressed. Physician suicide is a global public health crisis. More than one million Americans lose their doctors each year to suicide—just in the United States.”

There is evidence to suggest that we should approach the topic of suicide with care.* However, *not* discussing it cannot be the answer, stressed Dr. Wible. “Ignoring doctor suicides leads to more doctor suicides ... Blaming doctors increases suicides. Words like ‘burnout’ and ‘resilience’ are employed by medical institutions to blame and shame doctors while deflecting their own accountability for inhumane working conditions in failing health systems. When doctors are punished for occupationally induced mental health wounds, they become even more desperate. Suicide is preventable if we stop the secrecy, stigma, and punishment.”

In the aftermath of his suicide attempt, Dr. Birk is grateful each day for life, and he shares his story now for the benefit of his peers. “There was no ‘good point’ to it, but if there were, it would be that I was forced to take some time off and undergo treatment to work on the things I was struggling with.”

Picking Up on the Signs

Whether or not we call it “burnout,” high stress levels do correlate with physician suicide. For Dr. Birk, many factors – and more than a little time – pushed him to a breaking point. “Personally, I burned out way before I had the crazy idea to kill myself. I was having issues in my home, mostly self-inflicted, and I tried to take too many things on my shoulders. I shouldn’t have. There were disconnections with family, and there was guilt over that. It felt like every decision I made, in turn, complicated another decision.”

Add to that work, and lots of it. Having missed very few days in 12 years of practice, Dr. Birk was a hard worker who got along well with his patients. “I had no issues with patients through-

out my practice,” he said. “The only work-related stress in my life at that time was related to quantity. You could never do ‘enough,’ so you just kept doing more and more and more. I do think that [pace] contributed to other stressors that I was allowing to build up. My mental, physical, and emotional health ended up on the backburner to deal with other people’s health – a problem common to doctors. When I finally hit the breaking point, they were done with me. How does one go about telling people they have issues or need help when they fear exactly what I ended up with?”

These are hard statements that point to the importance of recognizing and responding to the signs of impending disaster. To find out just what to watch and listen for in ourselves or our colleagues, *The Journal* spoke to a psychiatric expert here in Arkansas, Erick Messias, MD, MPH, PhD.

“There are several drivers, if you will, that lead to depression, which *may* lead to suicide,” explained Dr. Messias, associate dean for faculty affairs at the UAMS College of Medicine. “According to research done at the Mayo clinic, drivers for physician distress include our **heavy workload** and **increasing job demands**. Of course, changes to the health care system have increased access, which has increased workload. It becomes a vicious cycle. Another driver is a lack of **work-life balance**. Physicians, by nature, are hard-working and demanding of themselves, but at some point we need some boundaries around clinical time and patient demands, so that we can have our own lives, too.”

Dr. Messias included **depression** as a final trigger to suicide, along with his own addition to the list, **alcohol and substance abuse**. “It’s a well-known fact that most people who commit suicide are intoxicated at the time, so alcohol and other drugs are a major factor in pushing people not only to suicide, but to act on those impulses. Other triggers include **broken relationships** (with a spouse, teenagers, etc.) and **access to lethal means**.

Seeing these warning signs in oneself or others isn’t always easy. “We hear that the last person to admit they have a problem is the person with the problem,” said Dr. Birk, who, like many other male surgeons who attempt suicide, did his best to shoulder the burdens and was never categorized as clinically depressed. “I’m generally a pretty pleasant guy, but looking back, there were some warning signs. I was beginning to feel not satisfied at work. It was becoming a drudgery,

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U.S. physicians take their own lives every year.

Let's talk about it.

Breaking the Culture of Silence on Physician Suicide

An NAM Perspective

Source: Andrew & Brenner, 2015

www.nam.edu/Perspectives

National Academy of Medicine's Action Collaborative on Clinician Well-Being and Resilience.

where you can't make anybody happy, so then you're not happy.”

Lightening the Load, Lessening the Stigma

Would lightening his professional load earlier on in his struggles have been enough to keep him from a suicide attempt? “It’s hard to say,” said Dr. Birk. “I will say that at no time did my employer come to me and encourage me to take a break.”

Mercy Health System, based in Missouri, has developed an organizational-wide approach to physician wellness that focuses on easing the load physicians bear, among other benefits. To encourage professional wellness, the program (called Rapha, translated “healer”), affords physicians wellness retreats, workshops, education, and other benefits. A January 2017 article in *Catholic Health Associations of the United States* quoted Mercy’s vice president of Mission for Mercy Clinic, Michael Doyle, who described the intent. “[The goal is to create an] environment for physicians that offers support, intervention, and meaning in the health profession.”

Here in Arkansas, Dr. Messias and others at UAMS are heavily involved in increasing efforts to support physicians’ mental health and wellbe-

ing. “It’s clear that the stigma has decreased over the last few years,” said Dr. Messias. “Due to the confidentiality of the process, I don’t have specific numbers to back it up. It’s more important that we make sure people feel comfortable that their seeking support will not become public.”

Anonymity is key to preventive efforts, according to Dr. Messias. The UAMS Faculty Wellness Program respects privacy while encouraging a balanced lifestyle (emotional, intellectual, physical, social, occupational, environmental, financial, spiritual health and wellness). It is directed by Molly M. Gathright, MD, associate professor of Psychiatry and assistant dean for Graduate Medical Education. Through this and similar programs geared to students and residents, physicians and other staff members are offered a free, confidential consultation with Dr. Gathright or, in the case of residents, Puru Thapa, MD.

The University’s wellness programs are patterned on research by The Mayo Clinic** and focus on promoting positive engagement and reducing burnout by 1) acknowledging and assessing problems, 2) implementing interventions and cultivating community, 3) providing resources that pro-

> Continued on page 176

Physician Suicide Prevention: Research & Reading

If you are suicidal and need emergency help, call 911 immediately or 1-800-273-8255 if in the United States. If you are in another country, find a 24/7 hotline at www.iasp.info/resources/Crises_Centres.

You may also call the National Suicide Prevention Lifeline at 1-800-784-2433.

mote work-life balance and self-care, and more. In addition, students may seek help for emotional and mental health issues, depression, anxiety, grief, relationship conflicts, academic difficulties, and numerous other issues interfering with their maximum functioning. (Students may call 501-686-8408 for an appointment.)

The AMA remains vocal on the issue as well. The organization wants to see it get easier for physicians to access mental health care and, this past year, adopted a new policy that, according to ama-assn.org, will help “ensure physicians are able to seek the care they need for burnout, anxiety, depression, and substance-related disorders, without fear of punitive treatment or licensure and career restrictions.” (For more information, contact the AMA for policy entitled, “Access to Confidential Health Services for Medical Students and Physicians H-295.858.”)

Conclusion

“I have and most physicians have experienced the loss of colleagues,” said Dr. Messias, calling suicide a tragedy that affects those who die, their family and friends, and – in the case of physicians – patients and patient care. “Burnout remains prevalent in academic medical centers among physicians, residents, nurses, and other healthcare professionals. To address professional

burnout in health care, we will need a culture change into a more supportive, transparent, and less hierarchical model of organization.

“Professionals want, and need, to see meaning and purpose in what they do and to have a sense of control of their work processes - this will reduce burnout and increase engagement. We need to show that we care for each other.”

Now practicing at Jefferson Regional Medical Center in Pine Bluff, Dr. Birk is sure of the support of his colleagues and family and sees life and work in a more positive light. “I haven’t had the compulsion before or since. I genuinely love life, and my family and kids. I struggle with regret for their sakes that it ever happened, but I’ve learned that when you get into that mode, you think nobody cares and that they’d be better off if you’re gone. Of course, that’s crazy. They all care, and I’m so thankful that I’m still here in the world. I hope I’m helping others by sharing my experience.”

* See “Reversing Stigma Suicide and the Werther Effect” by Erick Messias (Democrat-Gazette | June 15, 2018)

** To find the full report on the Mayo Clinic’s organizational strategies, search mayoclinicproceedings.org for the article, “Executive Leadership and Physician Well-being: Nine Organizational Strategies to Promote Engagement and Reduce Burnout.”

Additional Resources:

- The **Arkansas Medical Foundation** is in existence to provide for the identification and treatment recommendations of health care professionals who suffer from impairment, in order to promote the public health and safety and to insure the continued availability of skills ... The AMF was created to help [impaired physicians] get better even as it works to protect and safeguard patients. Arkansas’ regulatory and health care entities know the special needs physicians have and support the AMF as it steps in to assist physicians and other health care professionals in treatment, return to practice, and ongoing recovery. <http://arkmedfoundation.org>
- The **Institute for Health Care Improvement** shares steps leaders can take to help their staff find joy and meaning in their work.



Erick Messias, MD, MPH, PhD

(Watch the video at lhi.org, <https://youtu.be/EkOKxXU31B0>).

- “**Intervention to Promote Physician Well-being, Job Satisfaction, and Professionalism, A Randomized Clinical Trial,**” *JAMA* Feb 2014.
- **American Foundation for Suicide Prevention** offers a wealth of resources including facts about physician depression and suicide. Its **Interactive Screening Program (ISP)** is an online tool used by medical schools across the country as a method of connecting to students, residents, and faculty and encouraging them to utilize available mental health services before crises emerge. <https://afsp.org/our-work/education/healthcare-professional-burnout-depression-suicide-prevention/>
- As part of **AMA Steps Forward**, the AMA shares tools for identifying at-risk physicians and facilitating access to care. “Preventing Physician Distress and Suicide: Recognize and Respond to Physician Distress and Suicidal Behavior” <https://edhub.ama-assn.org/steps-forward/module/2702599>.
- Kishore, S., D. E. Dandurand, A. Mathew, and D. Rothenberger. 2016. **Breaking the Culture of Silence on Physician Suicide.** *NAM Perspectives*. Discussion Paper, National Academy of Medicine, Washington, DC. doi: 10.31478/201606a.
- **Mayo Clinic’s Well-Being Index** The Well-Being Index is an anonymous, web-based tool that evaluates multiple dimensions of distress in just a few questions, with the goal of ending burnout among professionals and reducing related adverse consequences. <https://www.mededwebs.com/well-being-index>.
- **In Reply—Defining Physician Burnout, and Differentiating Between Burnout and Depression** Melnick, Edward R. Powsner, Seth M. Shanafelt, Tait D. et al. *Mayo Clinic Proceedings*, Volume 92, Issue 9, 1456 - 1458.
- **Free Educational CME** The Federation of State Medical Boards has begun offering a special Continuing Medical Education edition focusing on physician wellness and burnout. For information, visit <http://www.jmronline.org/doi/abs/10.30770/2572-1852-104.2.6> AMS



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A Rare Case of “Blue Pseudo-polyposis”

Abhilash Periseti, MD¹; Saikiran Raghavapuram, MD²; Nayana George, MD²; Debdeep Banerjee, MD³; Benjamin Tharian, MD²

¹Hospital Medicine Division, Department of Family and Community Medicine, Texas Tech University, Lubbock, Texas

²Department of Gastroenterology, UAMS

³Department of Medicine, University of Florida College of Medicine, Gainesville, Florida

A 72-year-old Caucasian male with a history of hypertension presented with fatigue and bleeding per rectum.

He denied history of hematemesis, melena, or weight loss. Past medical, surgical and family histories were unremarkable. No history of alcohol abuse or use of over-the-counter medications. Physical examination showed conjunctival pallor without any skin or oral lesions. Digital rectal examination was normal. Laboratory testing showed hemoglobin of 7.1 g/dL with microcytic hypochromic anemia. Platelets, coagulation and liver function tests were within normal limits. CT abdomen did not show evidence of visceral hemangiomas, mass lesions, or ascites. Esophago-gastroduodenoscopy (EGD) was normal. Colonoscopy revealed blue, soft, rubbery, polypoid and easily compressible lesions, throughout the colon, with no evidence of fresh or altered blood (Fig. 1-4, Video). They varied in size from 0.5 to 2cm across, sparing the small bowel.

The diagnosis is Blue Rubber Bleb Nevus Syndrome (BRBNS). It is a rare congenital disorder characterized by vascular malformations affecting the skin, soft tissue, and gastrointestinal tract but can involve any tissue with vascular supply. William Bean first described it in 1958 (also known as “Bean syndrome”) as a triad of bluish vascular nevi on the skin, gastrointestinal (GI) bleeding and hemangiomas of the graft.¹ BRBNS has been noted in Caucasians more than in other races. Most cases are sporadic, though autosomal dominant inheritance has been reported. It is predom-

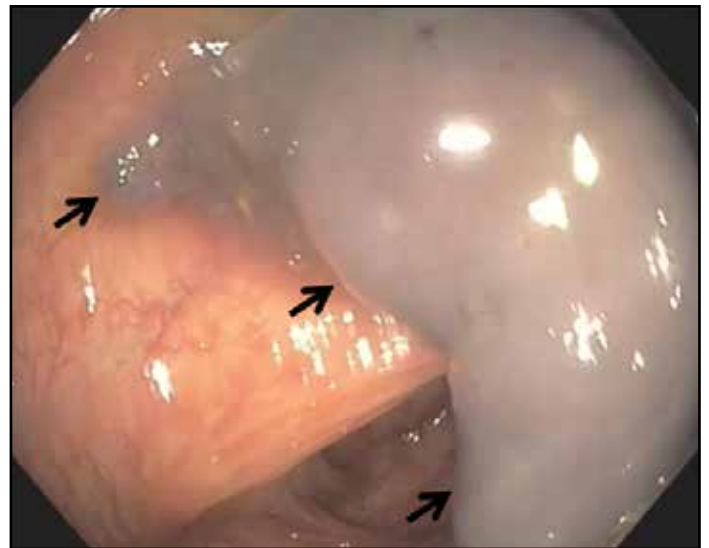


Figure 2.

inantly a disease of childhood and adolescence, with only 4% noted in adults.² Malignant transformation has not been reported. Gastrointestinal involvement is noted mostly as adults. It can affect the entire GI tract, from the oral cavity to the anal canal. Chronic blood loss can result in iron-deficiency anemia rarely needing blood transfusion.² Though skin lesions are

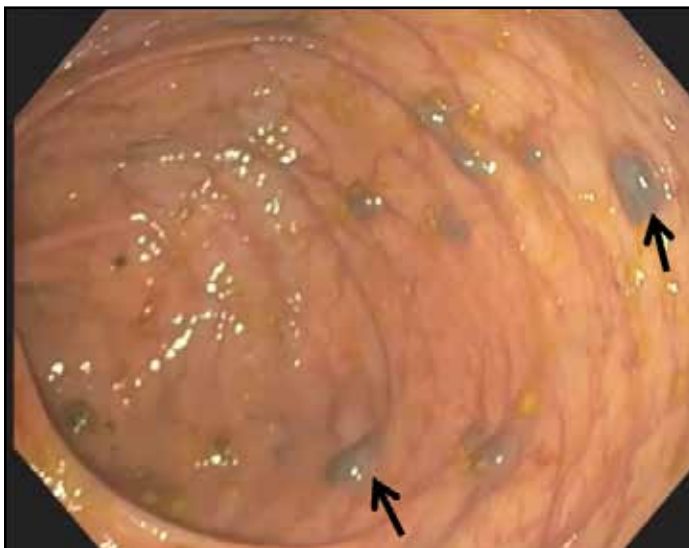


Figure 1.

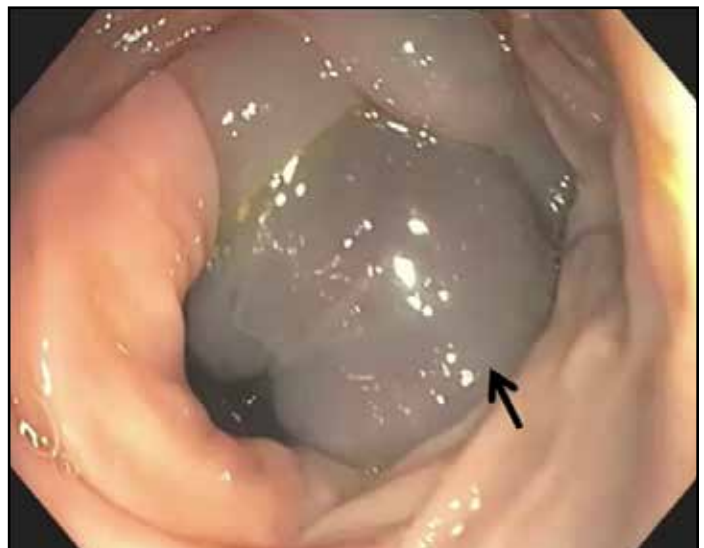


Figure 3.

common and noticed during childhood, our case is interesting in having none, with only two similar cases reported previously.³

Treatment is directed based on the severity of the disease. Patients with mild disease are treated with iron supplementation and blood transfusion. The mammalian target of rapamycin (mTOR) has been reported as a possible pathogenic mechanism, with potential use of sirolimus as a treatment modality.⁴ If symptoms are recurrent and severe, endoscopic hemostasis could be attempted based on the site of the lesion with a com-



Figure 4.

» **Though skin lesions are common and noticed during childhood, our case is interesting in having none, with only two similar cases reported previously.³**

bination of sclerotherapy, band ligation, argon plasma coagulation, or laser application.⁵ Surgical resection is reserved for refractory bleeding or for complications such as intussusception, intestinal torsion, and obstruction.

References

1. Fishman SJ, et al. Blue rubber bleb nevus syndrome: surgical eradication of gastrointestinal bleeding. - PubMed - NCBI. 2017.
2. Jin XL, et al. Blue rubber bleb nevus syndrome: a case report and literature review. - PubMed - NCBI. 2017.
3. Selinger AG, Abdelhai A, Jamie W, Stephen. Blue rubber bleb nevus syndrome: a rare presentation of late-onset anemia and lower gastrointestinal bleeding without cutaneous manifestations. 2016.
4. Yuksekkaya H, et al. Blue rubber bleb nevus syndrome: successful treatment with sirolimus. - PubMed - NCBI. 2017.
5. Wu C, et al. Endoscopic management of blue rubber bleb nevus syndrome in the colon with hemostatic clamp and snare. - PubMed - NCBI. 2017.

Note: For a copy of the video, please email: abhilash.periseti@gmail.com AMS

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Reducing Heart Attack Deaths in Arkansas

VICKI MEYER, BSN, RN, C4

Arkansas has the highest acute myocardial infarction (AMI) mortality rate in the nation, according to the Centers for Disease Control and Prevention (CDC). Arkansas' 2016 age-adjusted AMI mortality rate is 80.2 deaths per 100,000 people, which is 64 percent higher than the national average of 29.1 deaths per 100,000 people.

Arkansas is attacking this problem with a two-pronged approach targeting both the public and medical professionals. For the public, education is key to reducing AMI mortality rates. Medical professionals must adopt evidence-based guidelines and best practices to educate their patients about preventive health care and provide resources for better patient outcomes.

The Arkansas Behavioral Risk Factor Surveillance System (BRFSS) shows the state has between the second- and fifth-highest rate of risk factors in the nation that increase the probability of coronary artery disease and heart attack. These include:

- Smoking
- Diabetes
- High cholesterol
- Adult obesity
- Physical inactivity
- High blood pressure
- Low fruit and vegetable consumption

Heart attack prevention education should promote healthy lifestyle behaviors, recognition of heart attack signs and usage of 9-1-1 during a medical emergency, as every minute matters. Early recognition and treatment of an AMI increases the patient's chances for survival.

In September, the Arkansas Department of Health (ADH) acquired the Chest Pain-MI Registry dashboard through the National Cardiology Data Registry (NCDR). The registry is a risk-adjusted, outcomes-based quality improvement program focusing exclusively on high-risk ST-Elevated Myocardial Infarction (STEMI)/Non-STEMI (NSTEMI) patients. The registry helps hospitals adhere to the American College of Cardiology's clinical guideline recommendations. The program provides valuable tools to measure care, achieve quality improvement goals, improve patient outcomes and lower health care costs.

In Arkansas, the NCDR Chest Pain-MI Registry is called the Arkansas Heart Attack Registry (AHAR). AHAR is the ADH's surveillance and quality improvement program for acute coronary syndrome. AHAR requests that all STEMI and NSTEMI cases be entered in the registry. These data will allow the ADH team to provide surveillance, monitor care performance, and offer education and quality improvement

technical assistance to hospital teams to improve heart attack patients' care and outcomes.

The ADH has successfully recruited 23 of the 26 Arkansas primary coronary interventional (PCI) hospitals (receiving hospitals) and other PCI hospitals across the state's border, to join a collaborative effort focused on reducing the impact of heart attacks.

The goal of high-quality STEMI treatment is to achieve first medical contact with the patient to balloon within 90 minutes. Meeting this evidence-based, national guideline improves patient outcomes. It is vital that emergency medical services (EMS) and/or the non-primary coronary interventional hospital (transferring hospital), immediately recognize a STEMI on an electrocardiogram (ECG). EMS should immediately notify the nearest appropriate receiving hospital's emergency department (ED) that a STEMI patient is en route and is to be transported immediately to the catheterization lab, bypassing the ED. AHAR will track each case's adherence to the national guidelines for heart attack care.

Oversight for the AHAR is provided by the STEMI Advisory Council (STAC), a group of Arkansas-based health care professionals including interventional cardiologists, EMS professionals, nurses and public health officials.

The STAC has three subcommittees to improve the state's STEMI systems of care: data, protocols and education. The subcommittees work to link the three components of a system of care — the community, EMS and hospitals — to minimize patient treatment time.

The data and protocols subcommittees analyze registry data to identify areas for improvement and help develop policies, procedures and pathways for the STEMI Systems of Care. The group has recently approved the Arkansas STEMI Systems of Care Best Practice and Operations Manual, accessible at healthy.arkansas.gov/programs-services/topics/stemi-advisory-council-stac

The education subcommittee promotes community health education, including heart attack warning signs and risk factors, lifestyle changes and the importance of calling 9-1-1 when heart attack symptoms first occur.

Earlier this year, the ADH launched its "Dial Don't Drive" campaign, urging those with heart attack symptoms to call 9-1-1 immediately. About half of all patients experiencing a heart attack drive themselves to the ED, not realizing the potential harms, including cardiac arrest with no one to perform CPR, causing an accident or not going to the appropriate hospital.

The public often views EMS as only a "quick ride" to the hospital. However, treatment begins in the ambulance and EMS personnel know which facility is most appropriate to provide primary coronary intervention. Not all hospitals have interventional cardiologists on staff or the equipment to perform these procedures. Paramedics start treatment upon arrival at the patient's location, including assessing vital signs, performing a 12-lead ECG immediately,

starting an IV and performing other life-saving treatments. Pre-hospital providers are essential to the chain of survival for heart attack patients.

The receiving hospital must be notified by EMS within five minutes of STEMI recognition. The receiving hospital can activate Code STEMI and call in the catheterization lab team, consisting of an interventional cardiologist, two nurses, and a catheterization lab technician. If not already at the hospital, these team members must arrive at the hospital within 30 minutes of activation time. When the process goes as planned, the team is set up and ready before the patient arrives. The patient bypasses the ED, going directly to the catheterization lab to reduce time to treatment.

The public needs to understand that early recognition equals early treatment and a better chance of survival. All health care professionals should impress upon their patients and the public the importance of taking immediate action when heart attack symptoms first occur. Heart attack warning signs can differ between men and women. Men usually experience classic warning signs: chest pain/discomfort, squeezing/pressure, shortness of breath, cold sweat, and pain that spreads to back, shoulders, neck, jaw or arm(s). Women can experience the classic symptoms, but the signs are often milder. Women may also experience indigestion, palpitations, dizziness, fatigue over several days, anxiety, sleep disturbances, nausea/vomiting or mild flu-like symptoms.

The American College of Cardiology Foundation designed a heart attack recognition program, the Early Heart Attack Care (EHAC). It is being publicized statewide by the STAC education subcommittee. All Arkansas cit-

izens are invited to go online, take the course and become a "deputy in heart attack" at <http://dha.acc.org/>. The program teaches early signs/symptoms of a heart attack, heart disease risk factors, different symptoms between men and women and the importance of calling 9-1-1. Becoming a "deputy" provides confidence in understanding how to recognize and treat people before heart damage occurs. EHAC is also promoted on the ADH's Facebook ([facebook.com/arhealthdept](https://www.facebook.com/arhealthdept)) and Twitter (twitter.com/ADHPIO) web pages. It is hoped that sharing this educational information with friends and family will start a ripple effect across our state and help save lives.

FOR MORE INFORMATION:

- 2013 ACCF/AHA Guideline for the Management of ST-elevation Myocardial Infarction: www.onlinejacc.org/content/accj/64/24/e139.full.pdf
- 2014 AHA/ACC Guideline for the Management of Patients With Non-ST-Elevation Acute Coronary Syndromes: www.onlinejacc.org/content/accj/64/24/e139.full.pdf
- 2017 AHA/ACC Clinical Performance and Quality Measures for Adults With ST-Elevation and Non-ST-Elevation Myocardial Infarction: www.onlinejacc.org/content/accj/early/2017/09/14/jacc.2017.06.032.full.pdf

Ms. Meyer is STEMI nurse coordinator with the Arkansas Department of Health.

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FEBRUARY 2019

Neonatal Abstinence Syndrome in Arkansas

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Abstract

Neonatal abstinence syndrome (NAS) is a constellation of symptoms that result from in-utero exposure to drugs. We used the Arkansas Hospital Discharge Database to analyze NAS diagnoses in terms of person, place, and time. We found a large increase in NAS diagnoses between 2000 and 2014 and large differences between demographic groups. We then used the Arkansas Prescription Monitoring Program (PMP) to estimate per the capita opioid prescribing to women of reproductive age. We found that starting with those aged 25-29, one or more opioid prescriptions were written per capita to Arkansas women in 2014.

Background

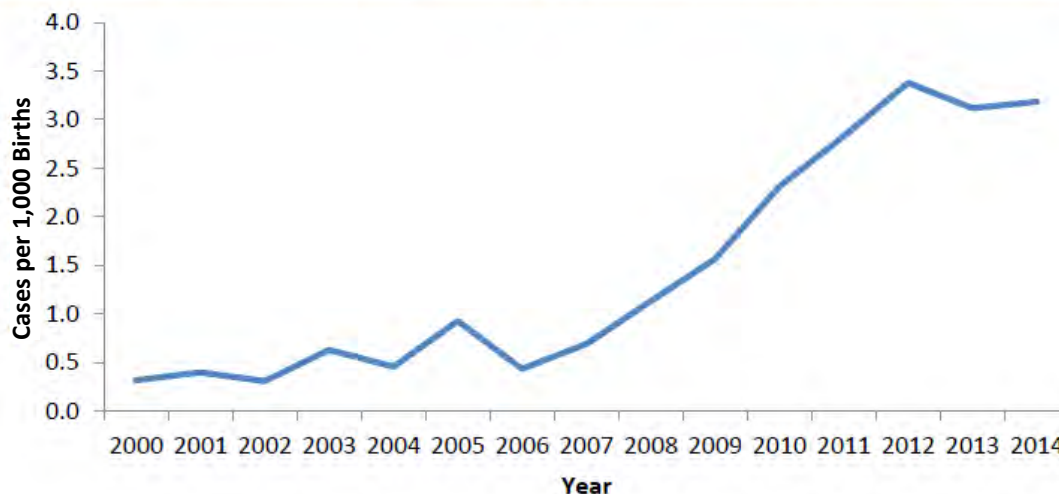
Neonatal abstinence syndrome (NAS) is a set of symptoms consistent with dysfunctional regulation of the central and autonomous nervous systems that occur in newborns who are exposed to psychoactive drugs while in the mother's womb.¹ Hospital discharge data provides a broad overview of NAS diagnoses in Arkansas. The Arkansas Hospital Discharge Database contains a record of all patients discharged from inpatient acute care hospitals in Arkansas. The database includes demographic information and up to 18 different diagnoses for each patient. Estimates of prescription opioid use, a risk factor for NAS, can be made using the Arkansas Prescription Monitoring Program (PMP). The PMP contains a record of all controlled substances dispensed by Arkansas pharmacies. In addition to drug name, day supply, and quantity dispensed, the PMP also collects patient demographic information, like age and sex.

Methods

We searched all hospital discharge records from 2000 – 2014 ($n = 6,245,596$) to identify births (*International Classification of Disease, Ninth Revision, Clinical Modification (ICD-9-CM) codes V30.x-V39.X ending in 00 or 01*) and cases of NAS (*ICD-9-CM code 779.5*). Cases were then grouped based on race, ethnicity, and insurance type. Median length of stay and median charges were calculated for babies diagnosed with NAS and babies not diagnosed with NAS. Patient address was used to calculate NAS diagnoses per 1,000 live births at the county level.

We used the PMP to estimate opioids prescribed to women of reproductive age per capita in 2014. We included in our analysis all prescriptions for oral opioid analgesic tablets. We excluded opioids used for the treatment of substance use disorders, like Suboxone[®], as well as patches and liquids. The number of prescriptions filled was divided by population estimates from

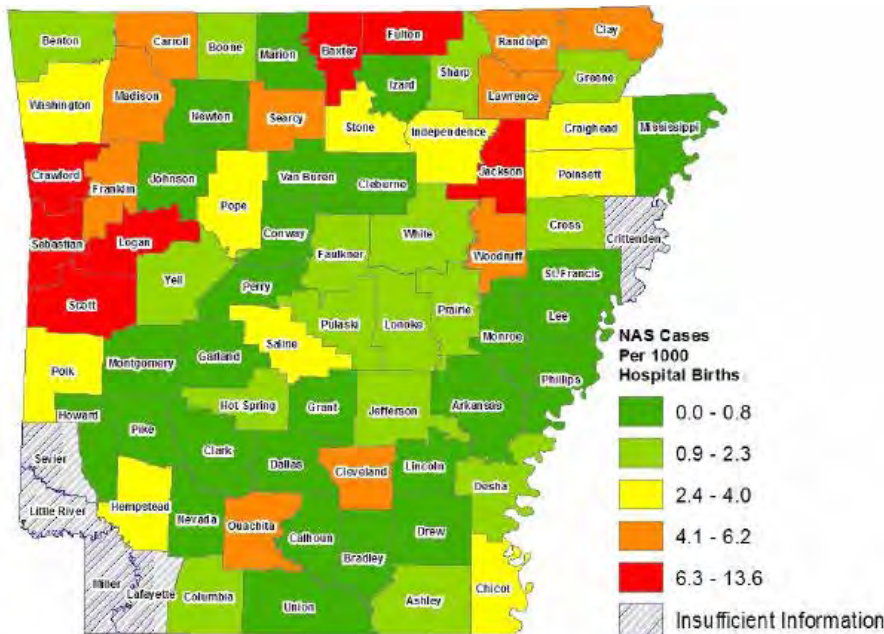
Figure 1. Rate of Neonatal Abstinence Syndrome Per 1,000 Hospital Births, Arkansas Residents, 2000-2014*



*Does not include births to Arkansas mothers occurring in out-of-state hospitals

Source: ADH Hospital Discharge Data System

Figure 2. Neonatal Abstinence Syndrome Diagnoses Per 1,000 Hospital Births, Arkansas Residents, 2010-2014*



*Does not include births to Arkansas mothers occurring in out-of-state hospitals
Source: ADH Hospital Discharge Data System

the Census Bureau to determine prescriptions filled per capita.

Results

The rate of NAS diagnoses per 1,000 live births increased from 0.3 in 2000 to 3.2 in 2014 (Figure 1). Babies diagnosed with NAS had longer hospital stays and higher charges than babies who were not diagnosed with NAS. In 2014, the median length of stay for babies diagnosed with NAS was 11 compared to two days for babies who were not diagnosed with NAS. That same year, the median charges for a baby diagnosed

with NAS were \$31,413, compared to \$3,533 for babies who were not diagnosed with NAS.

In 2014, the rate of NAS diagnosis was higher among whites, non-Hispanics, and patients covered by Medicaid. The rate of NAS diagnosis was nearly three times higher in whites than in non-Whites. About four out of every 1,000 white babies were diagnosed with NAS in 2014, compared to about one out of every 1,000 among non-whites. Similarly, non-Hispanics had higher rates than Hispanics, 3.4 and 2.5 per 1,000 births, respectively. The largest disparities in rates of NAS diagnosis were found be-

➤ **About four out of every 1,000 white babies were diagnosed with NAS in 2014, compared to about one out of every 1,000 among non-whites.**

tween women with different types of insurance. In 2014, the rate of NAS diagnosis was 4.7 per 1,000 births among women on Medicaid compared with 1.5 per 1,000 births among women with private insurance (table 1).

The rate of NAS diagnoses also varied by county. About half of the counties in Arkansas did not report a single case of NAS from 2010 to 2014. On the other hand, there are some counties where up to 13 out of every 1,000 babies are diagnosed with NAS (figure 2).

In 2014, 899,640 opioid prescriptions were filled by Arkansas women between the ages of 15 and 49. Opioid prescriptions filled per capita increased with age. The lowest rate was 0.36 prescriptions per capita, which was found among women aged 15-19. The highest rate was 2.11 prescriptions per capita which was found among women aged 45-49. Women aged 25 years or more, who account for 59.3% of all births, filled one or more opioid prescriptions per capita in 2014 (figure 3).

Discussion

Hospital discharge data indicates a large increase in the rate of NAS since 2000. During this period, whites, non-Hispanics, and people covered by Medicaid had above average rates

Table 1. Neonatal Abstinence Syndrome Diagnoses: Demographic Characteristics and Insurance, Arkansas Residents, 2014*

		Number	Percent**	Rate per 1,000
Race***	White	100	91.7%	4.1
	Non-white	9	8.3%	1.1
Ethnicity	Hispanic	12	11.0%	2.5
	Non-Hispanic	95	87.2%	3.4
Insurance	Medicaid	83	76.2%	4.7
	Private	15	14.8	1.5
	Other or Unknown	11	10.1	2.1

*Totals vary due to missing values

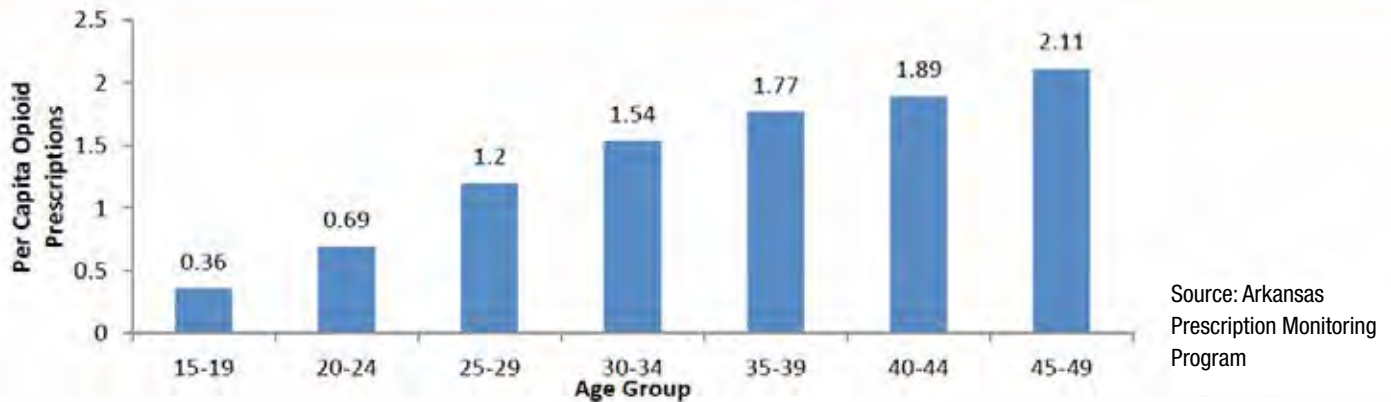
**Percentages may not add up to 100 due to missing values

***Non-whites merged into a single category to ensure confidentiality

Source: ADH Hospital Discharge Data System

> Continued on page 184.

Figure 3. Opioid Prescriptions Filled Per Capita By Women of Reproductive Age, Arkansas, 2014



of NAS diagnosis per 1,000 births. We also found large differences in NAS rates between counties. In some counties, not a single case of NAS was reported between 2010 and 2014. In others, almost 14 of every 1,000 babies born were diagnosed with NAS. Other indicators of prescription drug abuse, like death rates, show some variation from county to county, but not to this extent. Large disparities in NAS rates raise questions about reporting issues of the condition in different areas.

Prescription opioid use during pregnancy is a risk factor for NAS.² Between 2014 and 2016, Arkansas had the second-highest opioid prescribing rate in the U.S.³ According to the Arkansas PMP, reproductive-age women filled between 0.36 and 2.11 opioid prescriptions per capita in 2014. During the same year, the rate was 2.70 among women of all ages. The extent to which prescription opioids may have contributed to the recent increase in NAS diagnoses warrants further investigation. Depending on the results, interventions to prevent NAS in the future may want to focus on opioid prescribing to women of reproductive age.

sas, approximately three out of every 1,000 babies born in 2014 were diagnosed with NAS, and the rate is even higher in certain sub-populations. With the second-to-highest prescribing rate in the U.S., Arkansas may be able to reduce NAS rates by improving the prescribing of opioids to women of reproductive age.

References

1. Jansson LM, Velez M. Neonatal Abstinence Syndrome. *Current opinion in pediatrics*. 2012;24(2):252-258.
2. Kellog A, Rose CH, Harms RH, Watson WJ. Current trends in narcotic use in pregnancy and neonatal outcomes. *Am J Obstet Gynecol*. 2011;204(93):259.e1-259.e4.
3. Centers for Disease Control and Prevention. *Annual Surveillance Report of Drug-Related Risks and Outcomes — United States, 2017*. Surveillance Special Report 1. Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. Published August 31, 2017. Accessed September 11, 2017 from <https://www.cdc.gov/drugoverdose/pdf/pubs/2017-cdc-drug-surveillance-report.pdf>.

The views expressed in this paper are not necessarily those of the Arkansas Department of Health.

This report was supported by the Grant or Cooperative Agreement Number, 1 NU-17CE924869-01, funded by the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention or the Department of Health and Human Services. **AMS**

Limitations

These findings are subject to several limitations. First, the way NAS is diagnosed may vary from one hospital to another. Second, births to Arkansas residents that occur in out-of-state hospitals are not reported to the Arkansas Hospital Discharge Database, which may result in undercounting of NAS cases, especially in border counties. Third, babies that are transferred from a birth hospital to different hospital for follow-up may be counted twice. Fourth, and perhaps most importantly, the PMP database does not include information about pregnancy status. From the data we analyzed, we cannot tell if women who were prescribed opioids were pregnant.

Conclusions

CDC guidelines encourage providers to weigh the risks and benefits of opioid therapy prior to prescribing opioids. The benefits of opioids, such as temporary pain relief, are well known. This article offers a population-level view of one of the risks associated with opioid prescribing to women of reproductive age. In Arkan-

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Kevin St. Clair, MD

Derm Dilemma: Melanoma



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A 40-year-old male with no history of skin cancer presents with a dark “mole” on his left posterior shoulder. It is asymptomatic and has never bled but his spouse has noticed enlargement over the past nine months. Clinical and dermoscopic photographs are below:



What is your next step?

- A. Reassurance that this is a benign seborrheic keratosis
- B. Excisional biopsy with 3 cm margins at time of presentation
- C. Excisional biopsy of visible pigment or, if not feasible because of lesion size, a shave biopsy with the saucerization method
- D. Monitor with serial photographs
- E. 3 mm punch biopsy of the darkest part of the lesion

Answer: C.

Discussion:

The lesion in the photograph is a melanoma, which is notorious for its risk of metastasis and attendant morbidity and mortality. Fortunately, most melanomas are characterized by an initial “horizontal” growth phase during which time local and distant metastasis is unlikely. Early recognition is therefore critical. Melanoma incidence has increased considerably in the last several decades, due at least in part to advances in detection and diagnosis. Hand-held dermoscopes have led to an improvement in distinction from benign pigmented lesions and earlier recognition of melanoma; however,

dermatopathologic examination remains the gold standard in melanoma diagnosis. Vertical tumor thickness, or Breslow depth, is the most important prognostic factor.

Clinically, melanoma is often characterized by the ABCD’s:

- A. Asymmetry
- B. Border irregularity
- C. Color (dark, but not uniform)
- D. Diameter > 6mm; continuing enlargement

If possible, smaller suspected melanomas should be excised completely at the time of presentation. For larger lesions where complete excision is not feasible, a deep shave biopsy (“saucerization”) method may be employed. Care must be taken not to transect the pigmented lesion at the deep margin, so that the dermatopathologist may determine the Breslow depth. Later, when melanoma is confirmed, wide local excision is performed with appropriate margins that are determined by the Breslow depth and other histologic features. Sentinel lymph-node biopsy may be indicated, and immunotherapeutic agents are available for metastatic disease. **AMS**

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Rhabdomyolysis From Atorvastatin and Levofloxacin in an Elderly Patient With Renal Failure

Lilianna Hanefeld-Fox, MD; Sai Prasad Desikan, MD;
Caston Taylor, PA; Seth Barnes, MD; Raman Desikan, MD
White River Health System, Batesville

Statins are increasingly used to effectively lower low-density lipoprotein cholesterol (LDL) and improve outcomes in coronary heart disease, both in primary prevention of established coronary heart disease and in secondary prevention in established disease.^{1,2} However, concerns about muscle toxicity may prompt underutilization of these effective agents.³ Rhabdomyolysis is a potentially fatal but rare complication of statin therapy. Risk of statin-induced muscle damage is increased by concomitant administration of drugs that impair the metabolism of statins or other drugs associated with intrinsic myotoxic potential.^{4,5} Levofloxacin is widely prescribed for community-acquired respiratory infections; it has predominant renal elimination, and dose reductions are necessary for renal impairment. Levofloxacin has been reported to cause rhabdomyolysis in the elderly, patients on hemodialysis, and post-renal transplantation.⁶⁻⁸ We report on acute rhabdomyolysis in an elderly patient with renal impairment from concomitant administration of levofloxacin and atorvastatin.

Case Report

An 83-year-old white female was admitted for increasing weakness and myalgia. Her past medical history was significant for aortic stenosis, coronary artery disease, hypertension, diabetes mellitus type 2, hyperlipidemia, gout, breast cancer, chronic kidney disease, and ensuing normocytic anemia. She had two recent hospitalizations: pneumonia a month prior to this admission and dyspnea with sinus symptoms two weeks before this admission. She was treated with a course of Levofloxacin on both visits. She was switched to Atorvastatin from Simvastatin for coronary artery disease 11 months earlier. She

had noticed increasing weakness over a month, necessitating more help with activities of daily living. She also noticed increasing left upper thigh and hip pain in addition to significant muscular weakness. Left extremity Doppler was unremarkable. Workup revealed rhabdomyolysis with elevated myoglobin of 14370 ng/ml, creatine kinase (CK) of 20340 U/L, and creatine kinase, muscle and brain (CK-MB) of 75.5 ng/ml. Transaminases were also elevated with alanine aminotransferase (ALT) of 320 U/L and aspartate aminotransferase (AST) of 742 U/L. Creatinine of 1.3 mg/dl was not significantly elevated from baseline at 1.3 mg/dl and improved during hospitalization. Atorvastatin was held; myoglobin levels and liver enzymes showed progressive improvement. On last evaluation four months from onset of rhabdomyolysis, she reported continued improvement of muscle weakness. In addition, myoglobin and creatinine kinase showed continuing reduction, even though values were still above normal at 429 ng/ml and 258 U/L respectively (Figure 1 and 2).

Discussion

Muscle-related symptoms are well recognized, severe adverse effects of statin therapy; the spectrum includes myalgia, myopathy, and rhabdomyolysis. Myopathy, defined by muscle symptoms and CK elevation of 10 fold above upper limit of normal, occurs in five patients per 100,000 person years. Rhabdomyolysis, defined by CK elevation above 10,000 IU/L or 10 folds above upper limit of normal with increase in creatinine value, is observed less often (1.6 per 100,000 person years). Less severe manifestations such as myalgia and asymptomatic CK elevation (< 10 fold ULN) are much more common. On average, statin-associated myopathy develops approximately 6.3 months from start of therapy, while rhabdomyolysis is observed much earlier (mean

time to onset of 9 days). Multiple factors are known to predispose to rhabdomyolysis (fragility, low body mass index, older age, female sex, hypothyroidism, hypertension, and polypharmacy). Drug interactions from concomitant medications play a major part in development of rhabdomyolysis. Statins, especially lovastatin, simvastatin, and atorvastatin are metabolized by CYP3A4 isoform of cytochrome P450. CYP3A4 is inhibited by many commonly used drugs (antifungals, macrolides, fusidic acid, cyclosporine, protease inhibitors and calcium channel blockers) making rhabdomyolysis more likely with these agents. Fibrates, when employed with statin, increase the incidence of rhabdomyolysis. Fibrates have intrinsic myotoxic potential, causing rhabdomyolysis when employed alone. Fibrates are not known to inhibit CYP3A4.^{4,5}

Levofloxacin, a commonly employed antibiotic for respiratory infection, is mainly eliminated by kidney and requires dose reduction with renal impairment; acute rhabdomyolysis has been reported in the elderly, patients on hemodialysis, and after renal transplantation. Other fluoroquinolones have also been associated with rhabdomyolysis.¹⁰ Levofloxacin is not known to inhibit cytochromes CYP3A4 or CYP2C8, which are important in metabolism of statins and active metabolites. Levofloxacin is a potent inhibitor of the P-glycoprotein mediated drug efflux system.

Levofloxacin is the drug most implicated in causation of rhabdomyolysis in our patient on account of recent exposure. However, she has had multiple exposures to levofloxacin in the setting of chronic renal impairment, despite which she did not exhibit symptoms of rhabdomyolysis. Atorvastatin has established myotoxic potential; however, she tolerated Atorvastatin for 11 months without any muscle-related symptoms.

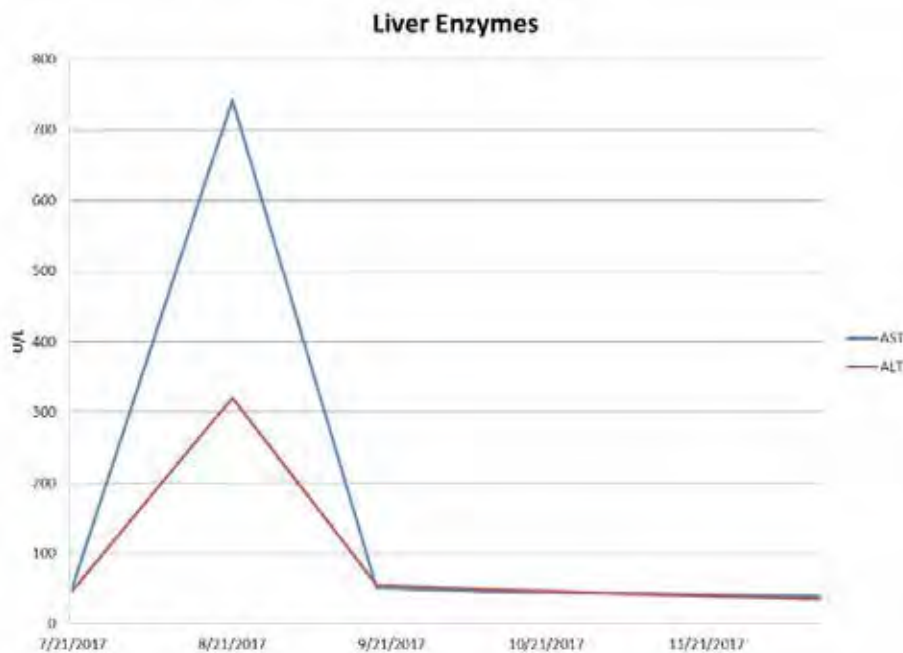


Figure 1 and 2.

Rhabdomyolysis, if related to this drug alone, should have been observed much earlier. This indicates that co-administration is likely responsible for this toxicity. Rhabdomyolysis has been reported after co-administration of simvastatin and levofloxacin in a patient with normal renal function.⁹ Our patient had received simvastatin along with levofloxacin a year earlier when she also suffered acute renal impairment from contrast nephropathy; despite this, rhabdomyolysis was not observed. The mechanism underlying rhabdomyolysis due to co-administration of these drugs remains unclear. This may be due to intrinsic myotoxicity of levofloxacin or due to inhibition of P-gp mediated drug efflux. Co-administration of these drugs should be discouraged especially in elderly patients with renal im-

pairment. Muscle injury markers are still above normal at four months; however, muscle weakness shows improvement. This improvement, along with creatinine kinase level being less than 10 times normal, argues against statin-associated autoimmune myopathy.¹¹

References

1. Chou R, Dana T, Blazina I et al. Statins for prevention of cardiovascular disease in adults; Evidence report and systematic review for the US preventive services task force. *JAMA*, 2016; 19: 2008-2024.
2. Rodriguez F, Maron D, Knowles J et al. Association between intensity of statin therapy and mortality in patients with atherosclerotic

Cardiovascular disease. *JAMA Cardiol* 2017; 2: 47-54.

3. Fernandez G, Spatz E, Jablecki C, Phillips P. Statin myopathy: A common dilemma not reflected in clinical trials. *Cleveland Clinic Journal of Medicine* 2011; 78: 393-403.
4. Tomaszewski M, Stepien K, Tomaszewski J, Czucwar S. Statin-induced myopathies. *Pharmacological Reports* 2011; 63: 859-866.
5. Mendes P, Robles P, Mathur S. Statin-induced rhabdomyolysis: A comprehensive review of case reports. *Physiotherapy Canada* 2014; 66: 124-32.
6. Korzets A, Gafer U, Dicker D, Herman M, Ori Y. Levofloxacin and rhabdomyolysis in a renal transplant patient. *Nephrol Dial Transplant* 2006; 21: 3304-3305.
7. Febin J, Oluorunbi R, Pitchumoni CS. Levofloxacin-induced rhabdomyolysis: a case report *J Med Case Rep* 2016; 10: 1004-1006.
8. Gupta A, Guron N, Harris M, Bell R. Levofloxacin-induced rhabdomyolysis in a hemodialysis patient. *Hemodial Int* 2012; 16: 101-103.
9. Paparoupa M, Pietrzak S, Gillissen A. Acute rhabdomyolysis associated with co-administration of levofloxacin and simvastatin in a patient with normal renal function. *Case Reports in Medicine* 2014; Article ID562929, 4 pages.
10. Baril L, Maisonobe T, Jason-m=Moliner M, Haroche J, Bricaire F, Caumes E. Acute rhabdomyolysis during treatment with levofloxacin-a case report. *Clin Infect Dis* 1999; 29: 1598-9.
11. Mammen AL. Statin-associated autoimmune myopathy. *N Engl J Med*. 2016;374: 664-669. **AMS**

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The Arkansas Medical Society will sponsor the **Doctor of the Day** program for the 2019 session of the Arkansas Legislature. The session convenes on Jan. 14, 2019, and will continue for 60 days, but the time can be extended by action of the Legislature. Volunteers are needed each Monday through Friday. The Doctor of the Day can attend committee meetings and has floor privileges in the House and Senate. You should plan to be at the State Capitol Infirmery from approximately 9:00 a.m. until 3:30 p.m. Please contact **Laura Hawkins** at 501-224-8967 or 800-542-1058 if you have any questions. [For more details or to register, visit our website, www.arkmed.org or call 800-542-1058.](#)

▼ OBITUARY

LITTLE ROCK - **W. Ray Jouett, MD**, passed away Oct. 19, 2018. Dr. Jouett was a past president of the Arkansas Medical Society as well as a member of the Fifty Year Club. He was also a past chairman of the Arkansas State Medical Board. During his formative years, Dr. Jouett was inspired by his grandfather, a physician, to pursue a medical occupation. He attended the University of Tennessee Medical School, graduating in 1955 with his MD degree. Dr. Jouett began his medical career with an internship at City Memorial Hospital in Winston-Salem, North Carolina. He continued at City Memorial for his residency in general surgery. In 1958, Dr. Jouett enlisted in the Army serving two years as a Captain, Chief of Surgical Services. He began his private-practice career in Little Rock, Ark., by joining the neurosurgical practice of Watson and Adametz, which evolved into the premier neurosurgeon firm of Neurological Surgery Associates of Little Rock. As a neurosurgeon, Dr. Jouett cared for thousands of patients over the next 30 years. Dr. Jouett is survived by his wife of 56 years, Sara Tucker Jouett; his daughter Rebecca J. Koonce and her husband, K. Max Koonce; his daughter Susan J. Koller; and four grandchildren.

AMS BOARD OF TRUSTEES

Nominations are now being accepted for district trustees through Feb. 1, 2019. The Board of Trustees consists of the primary officers of the AMS and district trustees representing 10 geographic areas of the state. There are currently 38 district trustees, and this number can fluctuate based upon the number of AMS members in each district. The Board of Trustees is responsible for the business and financial affairs of the AMS including helping to set policy. The Board meets quarterly with meetings generally lasting about two hours.

Eligibility Requirements:

- Must live and/or practice in the district
- Be an Active, Direct or Life member (most physicians fall into these categories)
- AMS dues must be paid for the current election year
- Candidates cannot run simultaneously for two districts (live in one, practice in another)
- Past presidents are not eligible AMS



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