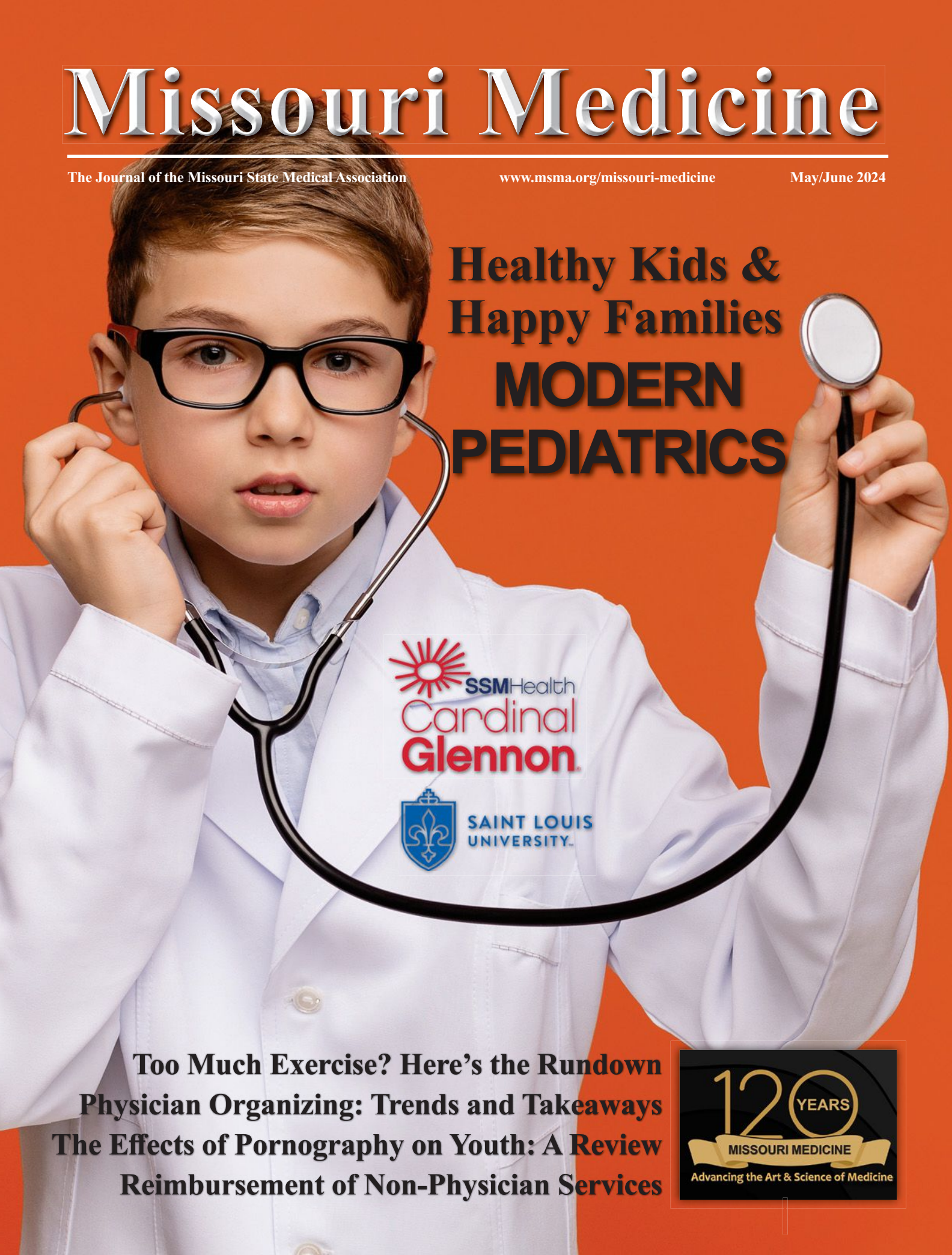
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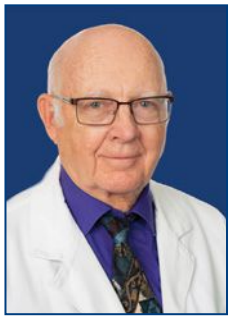
Too Much Exercise? Here's the Rundown

by John C. Hagan III, MD

I found that "lone atrial fibrillation," AF in an otherwise normal heart, was common in long distance runners and cyclists.

When it comes to exercise, it is possible to get too much of a good thing. Regular participation in appropriate mild-moderate exercise is one of the most important habits for optimal health. The kind of detrimental excess endurance exercise I'm going to implicate includes marathon distance running, 100-mile bike rides, Iron Man/Half Iron Man triathlons, and other flat-out, petal-to-the-metal exertions for more than an hour. Regrettably, I confess: "Been there, done that!"

Hyper-exercisers tend to be Type-A driven individuals. This fits the profile of many of us in medicine. In case you haven't got the moderation message, especially those of you over 40 and running more than an hour, I'm going to share my experience.



I'll include some of the research my cardiologist James O'Keefe, MD, and others have published over the past 15 years. This discourse is a personal perspective, not a scientific paper, thus I will be using only a single reference. Relevant scientific papers can be found at this link: https://digitaleditions.walsworth.com/publication/?m=11307&i=204134&p=1&ver=html5.

"Marathons in the Long Run Not Heart Healthy" was published in *Missouri Medicine* in the March/April 2014 issue just prior to the Boston Marathon (Figure 1). That issue elicited a significant outcry from the hyper-exercising marathon crowd. 'Outcry' perhaps does not do justice to the noise; it was an angry roar. What our detractors then labeled as mistaken and misleading has subsequently been proven by many published studies to be the real deal. These confirmatory studies come up easily with literature searches. Google pulled up 18,700,000 hits in 0.36 seconds for "marathons are unhealthy."

John C. Hagan III, MD is a retired ophthalmologist, active medical researcher and editor of Missouri Medicine. For 35 years he was a marathon endurance athlete leaving him in constant atrial fibrillation and a Coronary Artery Calcium Score of 1606. This editorial is co-published with the medical journal *Kansas City Medicine*.

Being of a certain age, I have seen many medical putative 'facts' turn into fiction. In spite of what the dogmatic Dr. Fauci says, sometimes if you 'follow the science' it will take you over a cliff.

Here are a few select discredited shibboleths: in the 1950s smoking was good for chronic cough, calming the nerves, caused no health problems—certainly not cancer—and was a harmless makes-me-look-cool pastime; coffee caused heart attacks and ulcers, sugar was harmless, and recently shutting down schools during COVID is good science. Well, you get the idea.

My grandparents' and my parents' physicians felt that rest, indeed absolute rest, cured many illnesses. Doctors ordered patients 'to take to their beds" for heart disease, especially after a heart attack, after childbirth, and after surgery. Vigorous activities such as walking, running, or swimming were considered dangerous. During my youth (yes, I was young once) men in their 40s had epidemic-like sudden deaths from heart attacks and other cardiovascular disease. These deaths were often erroneously attributed to exercising too much or working too hard. These were 'take it easy' times.

The 'exercise is bad' mantra began to fade with the seminal studies of Scottish cardiologist Jeremiah Morris, MD. The *London Transport Workers Study* (1948-1952) compared inactive bus drivers who sat their whole shift versus the conductors who spent their shift on their feet walking, often climbing stairs on two-deck busses. The sedentary drivers had a higher incidence of cardiovascular disease.

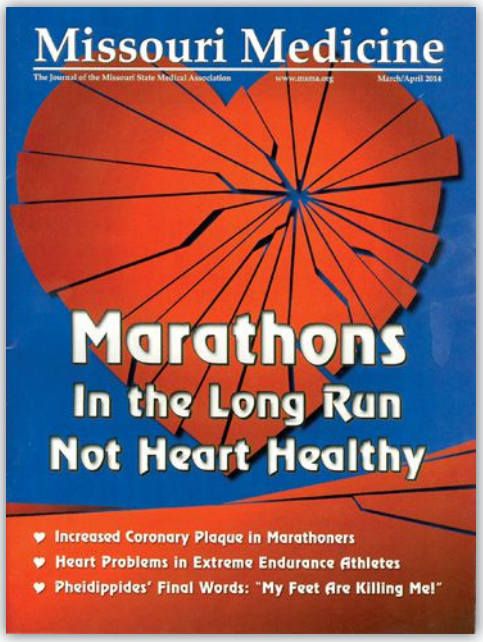


Figure 1. A decade ago *Missouri Medicine* was among the first journals world-wide to document the possible cardiovascular damage from distance running.

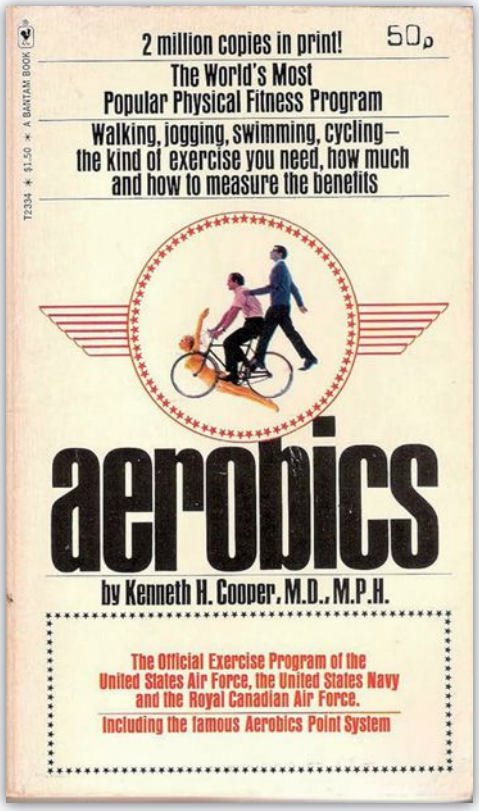


Figure 2. In 1969, Cooper published the book Aerobics which explained the benefit of regular mild-moderate exercise to the general public and quantitated healthy exercising.

The second giant in this field was American cardiologist Jeramiah Stamler, MD, an active exerciser, who was productive up until he died at age 102. The Father of Preventive Cardiology, Dr. Stamler, in the 1970s, introduced the concept of cardiovascular risk factors. These subsequently have been modified to now include physical inactivity.

The third giant in the 'exercise as medicine' movement is Kenneth Cooper, MD; he is now age 92, has run over 40,000 miles and is actively engaged in preventive cardiology. In 1969, Cooper published the book *Aerobics* (Figure 2) which explained the benefit of regular mild-moderate exercise to the general public and quantitated healthy exercising. I read most of the important Morris, Stamler, and Cooper papers. I was beyond impressed. Exercise, something I had done mainly through sports since childhood, became my lodestar to staying healthy. The more exercise I do the healthier I will get, or so I erroneously thought.

I began long-distance running in 1967 while a medical student at Loyola University Stritch School of Medicine. I would rarely run for less than an hour and did so with the expectation that I was

building a robust cardiovascular system. An international movement of "exercise is good for you; do as much as possible" developed. Among the movement's high-priests was pathologist Tom Bassler, MD. Dr. Bassler was an esteemed poo-bah in the American Medical Joggers Association of which I was a charter member. "The Bassler Hypothesis," long since disproved like the flat earth theory, was that running a marathon imparted absolute immunity from coronary artery disease. Running events proliferated: 5K, 10K, half and full marathons, outlandishly difficult races like the Leadville (Colorado) 100 Mile Challenge run at an altitude of 10,158 feet. At the apex of hyper-exercise idiocy is the Self-Transcendence 3100 Mile Race. Since its inception in 1996 only 53 deranged runners have completed the entire course. How difficult is it? More than 4,000 people have climbed Mount Everest to the summit.



Figure 3A. Hospital Hill Half-Marathon in Kansas City.



Figure 3B. Half-Ironman Triathlon held at Smithville Lake.

As an ophthalmology resident at Emory University, my first published paper of the some 225 that I written, was "The Doctor as A Coronary Candidate: Survival of the Fittest." Published in the August 1974 *Resident & Staff Physician*, I urged doctors to run as far as fast as they could. Mea Culpa!

Moving to Kansas City in 1975, I ran more than 30 Hospital Hill Half-Marathons, three full 26.1-mile marathons, a half dozen Baptist Hospital Triathlons, and two Half-Ironman Triathlons held at Smithville Lake (Figure 3A/3B). The latter was 1.2-mile swim (my weakest event—I was usually last out of the water), 56-mile bike ride, and 13.1-mile run. Like many runners of that era, I often managed gratuitously to work into conversations that I was a marathon runner. When it came to talking about exercise, I was insufferable. Another Mea Culpa.

All was going well until age 60. While taking a shower I felt my heart beating very rapidly. I took my pulse and found it irregularly irregular. Atrial fibrillation (AF)? How can this be? My running was supposed to make me invulnerable. A trip to North Kansas City Hospital and an extensive cardiac workup was done and normal except for the AF. Converted back to normal sinus rhythm, I started doing research and found that "lone atrial fibrillation," AF in an otherwise normal heart, was common in long distance runners and cyclists. This was news to my former cardiologists. Undeterred, I continued to run hours on end (six hours is my record).

I began to read in *Runner's World* of marathoners dying while running, and having abnormal coronary artery angiograms, and a need for heart artery by-pass surgery. Among the suggestions I saw several times was to have a CT Coronary Artery Calcium Score (CACS). Calcium is a surrogate for coronary artery atherosclerotic plaque burden. I asked my erstwhile cardiologist about taking that test. I was told it would not provide any useful information and was expensive. Being a compliant patient, I uncomfortably accepted.

Fortuitously my insurance changed and I needed to find a new cardiologist. I knew of James O'Keefe, MD, by reputation. I was extremely impressed by his emphasis on preventing cardiovascular disease. During my initial evaluation, I asked about a CT CACS. He readily agreed and the test was easy to schedule and inexpensive. A normal CACS is zero, and less than 100 usually non-concerning. At home about three hours after taking the test, I got a call from Dr. O'Keefe's office. Would I have my wife drive me now directly to his office. My CACS was 1606. Another even more thorough cardiac workup was done.



NO MARATHON RUNNING! TAKE IT SLOW, SHORT & EASY



The primary abnormality was the sky-high CACS indicating coronary artery disease. I was put on statins.

"So why do I have more calcium in my heart than the water pipes of a 100-year-old house?" I asked. Dr. O'Keefe indicated it was becoming evident as a complication of excess endurance exercising especially after age 40. *Missouri Medicine*, the medical journal I have edited for 23 years, received a manuscript from researchers in Minnesota, that reported increased coronary artery calcium in older runners compared with matched non-runners. I intentionally scheduled this peer-reviewed paper to be published just prior to the 2014 Boston Marathon (Figure 1). The startling research was picked up by the national press and international running community. The response was bi-modal. The first: "Good to know, I'm cutting back on my mileage and intensity level." The second: "Something is wrong with your studies, I'm not cutting my mileage."

An internationally-known marathoning cardiologist from Harvard (that used to mean something) called and read me the riot act. How could a medical journal from 'fly-over' country make that outlandish claim? How times change. That same cardiologist wrote in the February 11, 2024, *Kansas City Star* that he had given up long distance running and advises his patients to do the same. Graciously, he acknowledged that *Missouri Medicine* was among the very first medical journals to report elevated CACS in long distance runners.

There is some good news for those of us that cannot undo decades of excessive endurance exercise. There is a notable histological difference in the morphology of the coronary artery plaque in hyper-exercisers and the more usual non-exercising patient with multiple risk factors for cardiovascular disease. The risk of a cardiac event varies between these two groups even for the same CACS, being lower in runners like me. The exercise-induced atheroma are low-lying, fibrotic, and have less lipid. The high-risk CV patient has elevated, lumen occluding, large, thrombotic-prone lipid plaques. This type of atheroma is more prone to cause sudden coronary artery occlusion. Nevertheless, a CACS of zero and no atheroma would be a happier story. As a reminder of my hyper-exercising past I am in constant AF and on Eliquis. My treadmill stress test for my age group puts me in the top 99 percentile for the longest time to exhaustion. I'm still insufferable talking about exercise.

So, what is the take-away here? First do not conclude that exercise is dangerous. I disabused you of that in the first paragraph. But like the medicines we prescribe it is important to get the dosage correct. I had hoped to get through this article without a reference but I find this one essential.[1] Dr. O'Keefe and colleagues have quantitated guidelines for optimal exercise. They call that exercise sweet spot "The Goldilocks Zone."[1]

How do I exercise now? Walking, gardening, and most important swimming, three times per week for about an hour. For the endurance athletes among us, recall the words of Dr. Cooper, "If you run more than 15 miles a week, it's for something other than aerobic fitness."

As the Greek poet Hesiod said in 700 BC: "All things in moderation." Amen to that! Or John Hagan when realizing years of running marathons are unhealthy: "My feet are killing me".

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1. O'Keefe JH, O'Keefe E, Lavie CJ. The Goldilocks Zone for Exercise: Not Too Little, Not Too Much. Missouri Medicine 2018;115(2):98-104 **MM**

Creating State-Funded Residency Programs: How They Did It in Rural Indiana

by Albert L. Hsu, MD, Lacey E. Raper, MA, Amanda E. Hull, MD & Eric A. Millican, MD

While creating new graduate medical education programs is not an easy, it's just amazing what a start-up program can do with the right energy behind it.

We report and review how physician leaders in the state of Indiana created new state-funded residency programs to help address their growing shortage of physicians and to expand access to healthcare in rural Indiana.

Here in the United States, we have a large and growing shortage of physicians. Importantly, a significant number of physicians are planning to retire early,[1] with 21.8% of respondents in one survey reportedly considering early retirement.[2] One reports suggests: "The U.S. is facing a shortage of up to 124,000 physicians by 2034, including as many as 48,000 primary care doctors."[3] Post-pandemic burnout, liability concerns, private equity and "productivity" pressures, onerous bureaucratic regulations, and governmental interference in the practice of medicine are some commonly cited reasons for physicians leaving their practices. Two major avenues to address the pipeline for our physician workforce include: expanding our workforce with foreign graduates and international medical graduates,[4,5] and increasing federal funding of graduate medical education (GME) for residency and fellowship training.[6,7]

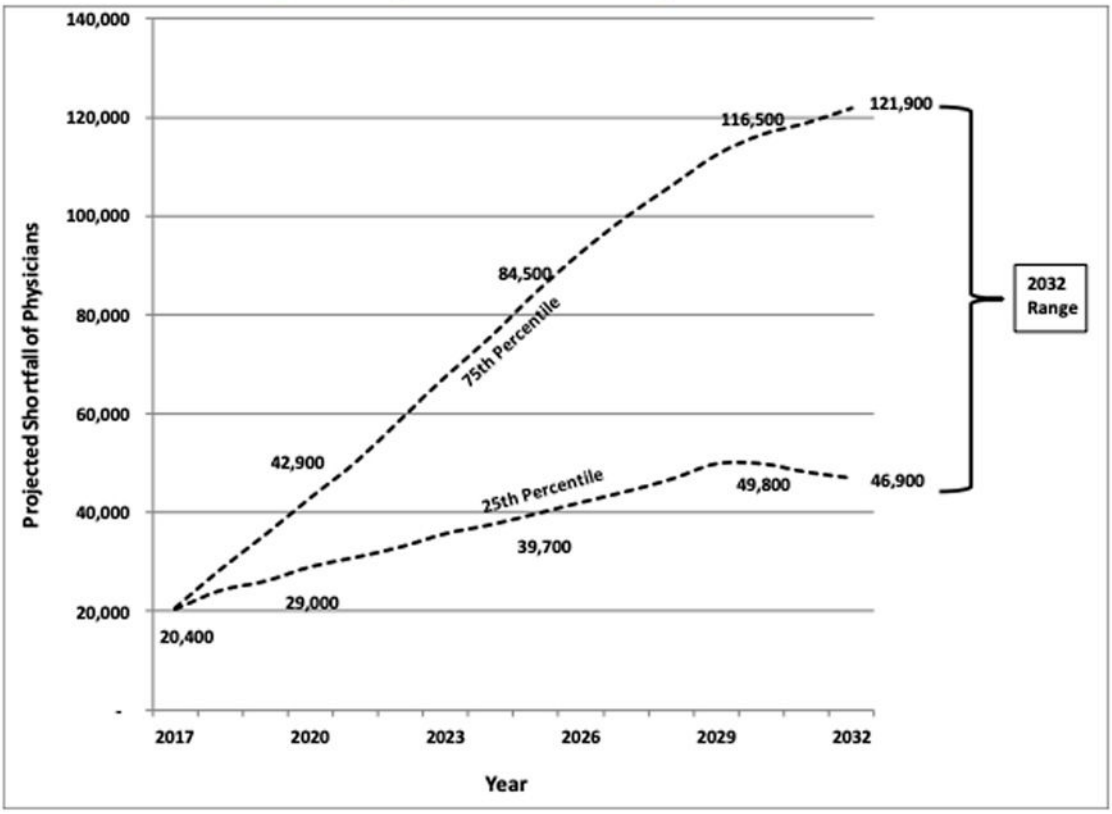
Our federal government is the primary funder of GME, including Medicare, Medicaid, the Health Resources Services Administration (HRSA), and the Veterans Administration (VA) funds;[8] since 1997, the number of Medicare-funded GME positions had been capped at 1996 levels.[6] In 2021, the US Congress finally passed a bill to add 1000 new residency slots starting in fiscal year 2023, with no more than 250 slots per year.[9] This was the first increase to GME slots since 1997, and while a step in the right direction, this will not be nearly enough to address current and anticipated physician workforce shortages. The first round of awards for new residency slots were released in February 2023, with 200 new slots added, only two of which were in Missouri.[8]

In the meantime, new medical schools continue to be built while medical school class sizes continue to expand. This imbalance between the number of available residency positions and the number of graduating medical students each year, results in some medical students who are "unmatched" and need to find other solutions. According to the AMA, "nearly 8,500 medical school graduates did not initially match into a residency slot last year" and "just over 5,000 of these unmatched students were able to scramble" into a program they did not initially apply for; however, "more than 3,000 students failed to locate an available



Albert L. Hsu, MD, (pictured), is at the Reproductive Medicine and Fertility Center, Department of Obstetrics, Gynecology and Women's Health, University of Missouri - Columbia, School of Medicine, Columbia, Missouri (MU SOM COMO). **Amanda E. Hull, MD**, is an Ob/Gyn resident and **Lacey E. Raper, MA**, is a medical student at MU SOM COMO. Eric A. Millican, MD, is at the Department of Dermatology, University of Utah, Salt Lake City, Utah.

Exhibit ES-1: Total Projected Physician Shortfall Range, 2017-2032



Source: The Complexities of Physician Supply and Demand

position and, as a result, were unable to begin training and provide physician care to their communities." [10] Many who do not match plan to apply again in the next year, while spending some time in either research or other avenues for professional development (and also addressing their educational debt burdens).

Meanwhile, our physician workforce is lacking adequate primary care physicians, with a need for 44,000 additional primary care physicians in the US by 2035.[11] In a 2016 report, the Health Resources Services Administration projected that Missouri would need 5,150 primary care physicians but only have 3,930 available, for a 23.7% deficit.[12] According to AAMC, only 24.1% of active physicians who graduated from an MD- or DO-granting school in Missouri were in practice in Missouri in 2020 (7,360 out of 30,530 total medical school graduates).[13] This number rises to 55.7% of active physicians who graduated from an MD- or DO-granting school in Missouri and completed GME in Missouri, who were also in practice in Missouri in 2020 (3,415 out of 6,130 total medical school and residency graduates).[13]

With six medical schools (A.T. Still University – Kirksville College of Osteopathic Medicine in Kirksville [ATSU COM]; Kansas City University College of Osteopathic Medicine [KCU COM]; Saint Louis University School of Medicine [SLU SOM]; University of Missouri – Columbia [MU]; University of Missouri – Kansas City [UMKC]; and Washington University [WUSTL SOM] in St. Louis), Missouri is clearly a net exporter of medical education, with more graduating medical students than in-state residency positions available. According to the Association of American Medical Colleges (AAMC), more than half (54-55%) of individuals who were in residency training from 2012 through 2021 have been practicing in the state where they completed their residency training.[14-15]

As many have said before, local and state governments are indeed the "incubators of democracy." Indeed, several states (including Utah,[16,17] Virginia,[18,19] and Indiana[20]) have successfully secured funding from their state legislatures for new residency positions in their state. In 2023, the Missouri State Legislature similarly passed House Bill 1162 to establish a graduate

medical education grant program,[21] which is now being implemented by our Missouri Department of Health and Senior Services. For those states who have not yet established state funding of GME positions, Indiana and other states are demonstrating how to think outside of the box and implement state funding of GME positions to address our growing access-to-care issues nationwide. Below is a summary of our interview of one physician leader in Indiana.

Indiana's Story

In the early 2010s, Indiana hospitals and medical schools were facing a problem: they were graduating more medical students per year than the number of residency spots they had available. In addition, most residency positions were located centrally, around the Indianapolis area. Hospitals in other areas of the state had few residency slots or were resident-naïve. As the majority of physicians tend to practice in the location of their residency training,[14-15] Indiana's physician leaders were looking for a solution that could not only improve care in the state, but also retain the students they had worked so hard to train.

Luckily, Indiana was in a positive financial position: through good fiscal discipline and management, the state government had a revenue surplus. Physician leaders introduced and lobbied for legislation to create state-funded residency positions in Indiana. "The goal was to provide some state grants as seed money and partial funding for new residency positions, particularly in primary care, which was listed to include family medicine, internal medicine, psychiatry, ob/gyn, and emergency medicine," according to Heidi Dunniway, MD, Regional Chief Medical Officer of Ascension St. Vincent.

In 2015, this legislation was successfully passed, creating the Indiana Graduate Medical Education (GME) Board[12] to oversee this program. The aim of the board was to fund new primary care residency program positions at licensed hospitals and qualifying non-profit organizations. This board, comprised of a broad representation of physicians and business/community leaders from around the state who were appointed by the governor, worked to implement residency positions that were not federally funded, provide startup funding for new residency programs, and develop the infrastructure for expansion of existing residency programs and establishment of new ones. The GME board comprised five different consortiums by location: Indianapolis, Lafayette, Muncie, Northwest Indiana, and Southwest Indiana.

The Southwest Indiana GME Consortium (SIGMEC) showed how successful such a program can be, and may be a role model for other states and regions who wish to implement state-funded residency program expansion. SIGMEC includes Good Samaritan Hospital (Vincennes, Indiana), Ascension St. Vincent Hospital (Evansville, Indiana), Deaconess Hospital (Evansville, Indiana), and Memorial Hospital and Health Care Center (Jasper, Indiana). Two of their four hospitals were residency-naïve and thus had no caps to the number of Medicare-funded GME spots that they could apply for. In Evansville, they have two level 2 trauma centers with a population of 800,000 in their catchment area serving a 200-mile radius. At three hours from Indianapolis, two hours from Louisville (KY), two hours from Nashville (TN), and three and a half hours away from St. Louis (MO), many of their residents don't want to travel for medical care but it can be tough to get physicians.

Upon its creation, SIGMEC's first step was to hire an independent consultant to do a needs-assessment of regional hospitals, to see what could be supported clinically and financially. Dr. Dunniway stressed the critical importance of this vital step, to determine the rural locations that had the greatest disparities in access to care, and to identify resident-naïve hospitals that may benefit from new residency programs. The needs assessment also included an analysis of which parts of the state were failing to recruit and retain physicians, and gaps were noted in the rural areas outside of Indianapolis. After the needs-assessment, development of individual residency programs began. In the initial stages, each hospital participating in SIGMEC contributed $1 million, and another $250,000 was allocated from the state GME Board. This initial investment helped fund the search for new program directors and residency coordinators, as well as enable the necessary infrastructure to establish new residency programs.

Some hospitals were found to be unable to support particular residency programs on their own, and would also need specialty rotations in other hospitals. Establishing some of these residency programs also required a culture change, getting nursing and ancillary services on-board with the educational mission of these programs.

As each resident began their training, the programs also received approximately $45,000 annually per resident from SIGMEC and/or state funding. While the initial cost to join this program may appear steep, this should be viewed as an investment in the community. After initial investment from the hospital and SIGMEC, these resident-naïve programs can become sustainable long-term through securing new federal GME funding. Dr. Dunniway also explained that by introducing resident physicians to these underserved local rural areas, those areas were empowered to recruit and retain those physicians and provide more and better care to those communities.

Indiana's early numbers are promising. SIGMEC (comprising Good Samaritan, Jasper Memorial, Ascension, and Deaconess) now has 56 new internal medicine residents (Ascension and Good Samaritan), 20 psychiatry residents at Good Samaritan (also doing rotations at Ascension and Deaconness), and 15 family medicine residents at Jasper (also doing rotations at Ascension and Deaconness). The psychiatry residency has graduated their second class (five psychiatry residents) this year, and the family medicine residency in Jasper graduated their second class (five family medical residents) also this year. In Evansville Indiana, six out of their 16 graduating internal medical residents will be staying on as faculty in their region of rural Central and Southwestern Indiana (while four others have matched into fellowship). If one considers the costs associated with recruiting six new internists to rural Indiana, this program is already seeing a significant return on investment, and increasing access to medical care in their local communities. As their current physician workforce is undergoing attrition (due to burnout, relocations, changes in life circumstances), they are looking to continue to bring in new physicians—and they have already cut their *locums* costs by over $1 million per year at Ascension alone.

The benefits to the consortium's hospitals stretch beyond the raw numbers of increasing residency positions, as well as increasing physician recruitment and retention. Programs are now seeing an increase in award-winning research, bringing academic recognition to the hospitals. "We've got a ton of research going on —clinical, case presentations, etc." said Dr. Dunniway. "Our residents have been phenomenal in terms of the meetings they have presented at. The cases they've been written up have been published multiple times, and their posters have won top poster presentation awards at national meetings like the American College of Physicians (ACP)."

Lessons

Dr. Dunniway has several points of advice for states wishing to create similar programs. First, she recommends having strong physician leadership in the state legislature: "Physicians in our legislature were key to gaining support with our legislature and governor, planting seeds for the legislation that made this possible." In addition to physician leadership in the Indiana state legislature, US Representative Larry Bucshon is a cardiothoracic surgeon from southwest Indiana who also played a key role in advocating for their state's commitment to GME.

Once funding was secured, a needs-assessment was crucial to identifying the locations that were most likely to support new residency programs, especially resident-naïve hospitals that could build new programs and secure federal GME funding. While creating new GME programs is not an easy, "it's just amazing what a start-up program can do with the right energy behind it. It's not without its challenges, but it's been a fantastic process."

While Indiana and Missouri are two distinct states, they share several similarities that suggest that Indiana's success may be a model for Missouri. Indiana's population of 6.8 million (#17 in the US) is very similar to Missouri's population of 6.2 million (#19 in the US), but with a higher population density of 189 (#16 in the US) vs 88.2 (#30 in the US) people per square mile. Many parallels can be seen between the demographics, major industries, politics, geography, and challenges

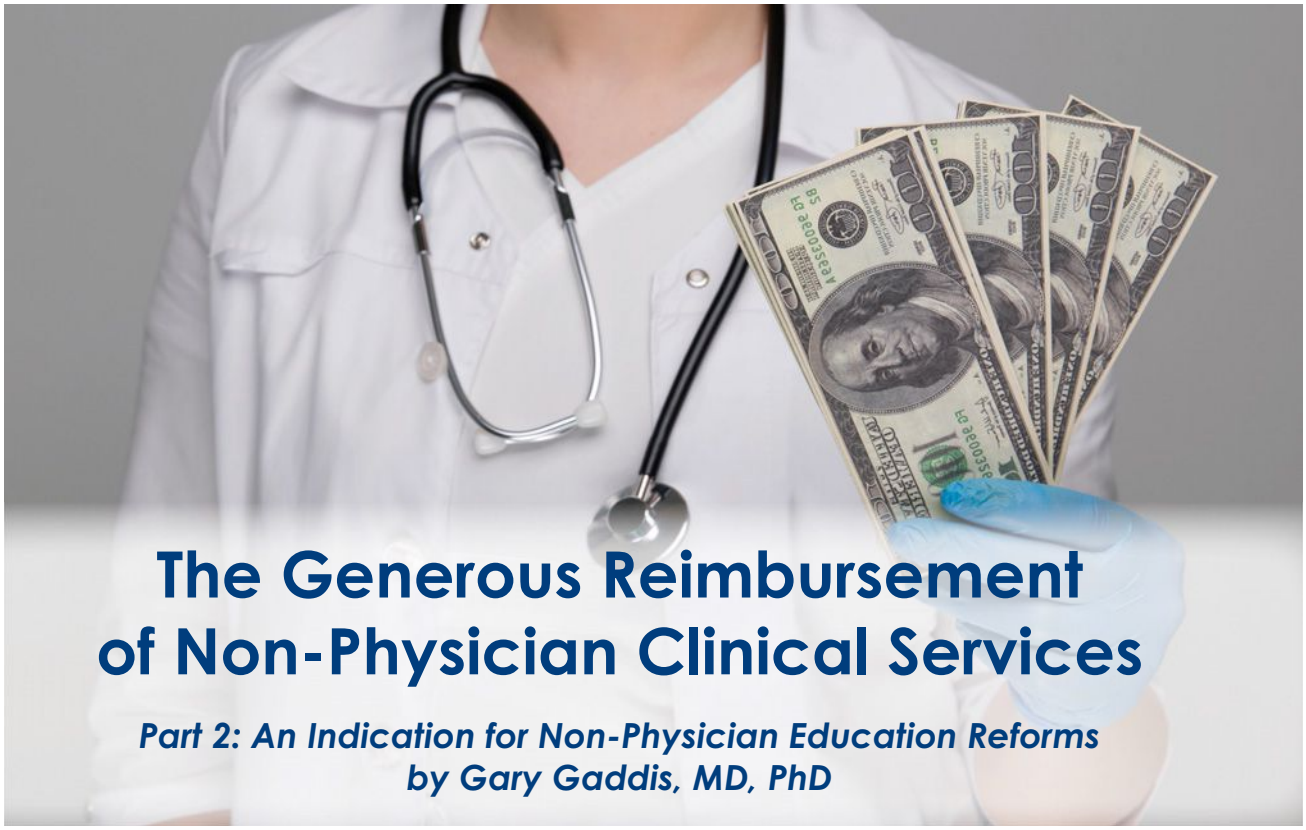
of both states. Like Missouri, Indiana is comprised of a few cities scattered like islands amid large rural agricultural areas. As with much of the Midwest, agriculture, energy, manufacturing, and pharmaceuticals are the other pillars of Indiana's economy. Racial diversity is mostly confined to urban areas, while most of the rural population is white. Indiana University is also home to the largest medical school in the country (with 338 graduating medical students[22] in 2022).

Similar to Indiana, Missouri is a rural agricultural state in the Midwest which serves as a net exporter of medical education. With passage of House Bill 1162 in 2023 (and increased funding for this program in 2024), Missouri is now in an excellent position to follow in Indiana's footsteps, by expanding existing residency programs with state funding. In the coming years, there may be also be an interest in enabling creation of new GME programs to residency-naïve hospitals. Through these initiatives, our state of Missouri will hopefully recruit and retain more physicians who will put down roots and remain in the area, generate new research and innovation, and increase access to medical care for underserved rural and urban populations.

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The Generous Reimbursement of Non-Physician Clinical Services

Part 2: An Indication for Non-Physician Education Reforms

by Gary Gaddis, MD, PhD

Further, substantial reforms to nurse practitioner education that would mimic those that followed the Flexner Report for medical education are indicated.

Introduction

This is the second Perspective of a two-art series discussing the topic of reimbursements provided to non-physicians for the clinical services they furnish. The March/April 2024 edition of *Missouri Medicine* led with compelling evidence that non-physician led care is less safe and more costly than physician-led care. What followed was an overview of the white paper from the Robert Wood Johnson Foundation that underlies and explains non-physicians' seeking of scope creep, an overview of what Full Practice Authority (FPA) is, where FPA has been granted to Advanced Nurse Practitioners (ANPs), general factors that influence payment for medical services rendered under the Resource-Based Relative Value Scale (RBRVS), and what is necessary to enable a physician to legally bill under their name when providing care in conjunction with a non-physician, such as an ANP or a Physician Assistant (PA).

Having established these basic points, this *Missouri Medicine* Perspective commentary covers why pay parity with physicians for non-physician-directed care would not be consistent with Medicare law, why current Medicare payments to non-physicians are excessive (they do not conform with RBRVS methodology), a numeric suggestion for a payment range that would be justified for reimbursement to non-physicians in a manner



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consistent with the RBRVS, and why pervasive current deficits in ANPs' clinical training should inform advocacy for meaningful reform of ANPs' educational processes. Many ANP programs retain an apprenticeship model for student's supervised clinical rotations. Apprenticeships were eradicated from medical education after the Flexner report of 1910.

85% of Physician Reimbursement Rate Granted by Medicare for Care Delivery by ANPs and PAs Is Not Grounded in RBRVS

When medical care is billed by a non-physician, that care is typically reimbursed at 85% of the physician's rate.[1] This 85% figure appears to be an arbitrary percentage. No mathematical rationale explaining this 85% figure appears to exist in any publication discussing reimbursement for care, when delivered by non-physicians. Further, no evidence exists that this 85% figure is at all grounded in RBRVS methodology.

How Can One Assert that the 85% Figure Is Not Grounded in RBRVS Methodology and Is Excessive?

The formula that governs the calculation of the Relative Value Units (RVU) that corresponds to the Resource-Based Relative Value (RBRV) for any medical service or procedure under the RBRVS is:[2]

- RBRV = (TW) * (1+RPC)*(1+AST)

Above, RBRV represents Resource-Based Relative Value, also known as Relative Value Units (RVU). TW represents Total Work by the clinician, a figure which factors a physician's time and the complexity of the service provided. RPC represents the Relative Specialty Practice Costs. Finally, and importantly, AST represents the Amortized Value of Specialty Training, the opportunity costs expended by the clinician to obtain the necessary specialized training.

Proof that non-physicians are not reimbursed in a manner consistent with RBRVS methodology lies in an understanding of the AST term. The value of the opportunity cost or AST for physicians far exceeds the AST for ANPs and PAs, because AST captures the amount of time needed to prepare to be able to provide any given service. A physician's training is obtained not only at much greater depth, but more importantly, over a much greater length of time than is the case for any ANP or PA. Thus, the current 85% figure for reimbursement is excessive, because no ANP or PA spends 85% of the amount of time a physician spends to complete their training.

If 85% Is an Inappropriate Figure, What Could Be Appropriate?

Consider that after completing high school, all physicians have first completed an undergraduate degree, and then completed four years of medical school, and at least three years of residency training. This typically requires at least 11 years. (Graduates of programs such as the University of Missouri-Kansas City's combined BS-MD six-year program represent the relatively few exceptions to this 11-year figure, but their more rapid training is uniquely enabled by not having summer sessions free of academic responsibilities while pursuing the Bachelor's degree.)

In contrast, an ANP who has completed high school and obtained a Bachelor of Science degree in nursing will have completed four years of nursing training and an additional two to four years of graduate education.[3] However, an ANP need not have obtained an undergraduate degree before matriculation to nursing school. In some cases, a future nurse will have directly entered nursing school after high school. In these cases, they are typically promoted to the final two years of training only if they achieve a sufficient grade point average during the two pre-clinical years of their training.[4] Other nurses complete some of their necessary prerequisite courses at a university before becoming eligible for admission to nursing school, and some complete an undergraduate degree. However, to be degreed is not a requirement. Further, after completing ANP training, no ANP residency training programs exist. Thus, an ANP generally spends six to eight years after completing high school directly preparing for their clinical role.[3]

A PA must have completed an undergraduate degree, followed by PA training, which generally requires two years.[5] In some cases, a PA will subsequently complete a 12 to 18-month residency

program. Thus, a PA typically commits between six and seven and a half years after completing high school directly preparing for their clinical role.

Perhaps too complex to introduce into calculations is the fact that medical school classes teach their students the pre-clinical and clinical sciences at a greater depth, and over a longer total of class contact hours per month or year, than characterizes ANP and PA programs.

Thus, upon close examination of the RBRVS formula, while considering the necessary preparation times for physicians versus non-physicians, it becomes clear why and how the 85% figure utilized by the Medicare program (and also by most commercial insurers) is not only completely arbitrary, but also unjustifiably generous.

When quantified strictly by years, and without also adding allowance for the fact that physicians undergo both more hours per year of coursework, and more intense coursework, the length of time for the training of an ANP or PA falls far short of any physician's. ANPs' and PAs' direct preparation periods of six years or seven and a half years or eight years, as detailed above, does not approach 85% of the 11-year minimum length of time spent in training by physicians who have completed a residency.

Further, many physicians obtain specialty training that adds to the 11-year figure. To credit all non-physicians who bill Medicare or commercial insurers with six years to obtain training would suggest that their reimbursement should be made at no greater than 6/11, or 54.5%, of the physician rate. Seven years would correspond to 63.6%, and eight years would correspond to 72.7%.

The inescapable conclusion is that current reimbursement rates for ANP-directed and PA-directed care are currently completely arbitrary and overly generous. The 85% figure is not compliant with RBRVS methodology, which is embedded within federal law. Thus, physicians can argue that ANP and PA care is reimbursed at an overly generous rate, without provoking fears of anti-trust litigation for engaging in such advocacy, because that advocacy would be grounded directly within RBRVS methodology.

Other Factors that Influence RVUs

For completeness, other factors also are considered before fully converting an RVU value to a clinical reimbursement. The reimbursement for any service is governed by this equation:[2]

- Reimbursement amount (in US$) = [($RVU_W$*GP CI_W)+(RVU_{PE}*$GPCI_{PE}$)+(RVU_{MP}*$GPCI_{MP}$)*CF

RVU_W is the RVU for the work provided, as per Hsaio et al.[2] This value may or may not be further modified by the Relative Value Scale Update Committee (RUC) of the American Medical Association. The RUC is an expert panel of physicians that makes recommendations to the federal government regarding the resources required to provide a medical service.[6]

In the formula, $GPCI_W$ is the Geographic Practice Cost Index for the physician's work.[2,7] The $GPCI_W$ varies by location. For instance, the $GPCI_W$ for my friend, a transplant surgeon in Bronx, NY, is 1.056. The $GPCI_W$ for St. Louis, MO is 1.000.

RVU_{PE} is the RVU for practice expense. A standard and unique value for RVU_{PE} exists for every specialty.

$GPCI_{PE}$ is the Location-Adjusted Cost Index.[2,7] The $GPCI_{PE}$ for my friend in Bronx, NY, is 1.212. The $GPCI_{PE}$ for me in St. Louis, MO is 0.964.

RVU_{MP} is the local adjustment for malpractice coverage expense in that clinician's specialty.[2] For example, Obstetrics/Gynecology has higher RVU_{MP} than Family Medicine. Non-physicians' malpractice coverage expense is a wild card, because some states' nursing practice acts preclude nurses from making a medical diagnosis. In such cases, the ability of plaintiffs to recover from these non-physicians if they commit alleged malpractice is constrained, when compared to physician-led care.

$GPCI_{MP}$ is related to the location of practice.[2,7] For example, malpractice coverage generally costs more in Florida than in Missouri.

CF ($$ per net RVU) is the Conversion Factor which multiplies the other term to yield a dollar figure.[2]

When a side-by-side comparison is made between physicians and non-physicians working at a common location, their $GPCI_W$ and $GPCI_{PE}$ should not substantively differ, so these terms will not be further discussed. They were introduced for the sake

of completeness. However, the $GPCI_{MP}$ for any non-physician will not exceed the value assigned for a physician.

The logical consequence of consideration of the factors that help derive an RBRVS-based RVU value is this: If proper and consistent application of the RBRVS formula were applied for non-physician directed care, the result would be an even more markedly decreased reimbursement for that non-physician led care. The chief reasons lie chiefly in the lower amount of time non-physicians invest in their training, which would lead to a much lower value for AST for non-physicians. As noted above, AST is the amortized value of opportunity costs encountered to obtaining the necessary specialized training. AST for a non-physician, be they a PA or an ANP, is much less than 85% of the corresponding value for a physician.

Another influence that could drive down non-physician reimbursement rates is the $GPCI_{MP}$, as noted.

This is quite the opposite of the reimbursement parity being sought by non-physicians, who demonstrate by their advocacy a convenient and self-serving ignorance of the legal underpinning of Medicare reimbursement methodology.[8-10]

Principal Conclusions: Reimbursement-Related Matters

First, ANPs and PAs who seek reimbursement parity with physicians, when billing directly for their services provided without physician supervision, overlook that their training is less extensive than physicians' training. A methodologically-consistent RBRVS-derived reimbursement rate for non-physician led care that comports with applicable law would be markedly lower than 85% of that enjoyed by physicians, because of the influences that AST and $GPCI_{MP}$ would provide. These influences are detailed above. Therefore, to remain compliant with the RBRVS formula, the Medicare program should revise downward the reimbursement rates of any current or future ANPs, and any future PAs, who are providing medical care not directly supervised by a physician who provides a substantive portion of the medical service. Such a revision could yield significant financial savings to our nation's financially-stressed Medicare system.

Another salutatory effect would accrue to physicians. To decrease ANP and PA reimbursement rates to comport with RBRVS methodology would favor the hiring of more physicians and less non-physicians as employees of insurers or health care systems, because health care systems would recover even less revenue from the care provided independently by the non-physician clinicians that they now employ. As established in Part I of this series, it is only when physicians provide a substantive portion of the medical service that reimbursement for care partly provided by non-physicians can legally be reimbursed at 100% of the physician rate.

Principal Conclusions: Safety and Efficacy Matters

Given the data from the Hattiesburg study[11] and the VA study,[12] both of which indicate that non-physicians provide less efficient care, and given AMA data that most patients prefer that their care team be led by a physician,[13] more effective and efficient care would ensue, with less specialty consults and less emergency department referrals. Indeed, the Hattiesburg study[11] and the VA study[12] support the assertion that the most avoidably expensive instrument in the hospital or clinician's office isn't a computer or a piece of medical hardware. It's the finger of the non-physician, which uses an Electronic Health Record to select more expensive diagnostic and treatment options than physicians would typically choose to complete their patient's work-up and care.

Further, non-physician practitioners are much more likely to prescribe opiate medications to patients than are physicians.[14] The importance of this should be clear to anyone familiar with the number of opioid-related deaths that have been occurring in the United States.

A New Opening for Physician Advocacy

For organized medicine to advocate for

downward revision of the 85% multiplier for independently-provided ANP and/or PA care to a lesser figure, in a manner consistent with RBRVS methodology, would also insulate physicians and physician organizations from needless anti-trust concerns, because physician advocacy on this matter would be grounded precisely in RBRVS methodology, which has been adopted by law for the Medicare program.

ANP Education Must Be Improved to Fulfill the Vision of the 2011 RWJF Statement

No examination of issues related to non-physician led care would be complete without re-examination of one of the four key points of the 2011 RWJF report that spurred the proliferation of ANP programs.[15] That report advocated that: "Nurses should achieve higher levels of education and training through an improved education system that promotes seamless academic progression." Unfortunately, such long-overdue improvements in ANP's educational systems have not yet happened.

Many ANP programs deserve a special degree of scorn that is not merited for MD, DO or PA training programs, for several reasons.

At least twenty ANP programs exist that have accepted 100% of their applicants who meet their admissions criteria in recent years.[16] One of these is the Western Governors University-Missouri, which maintains an affiliation with the State of Missouri.[17] Such acceptance rates would be unthinkable for PA, MD or DO training programs.

Many ANPs have received degrees after being required themselves to arrange their own for their clinical rotation, their capstone experience. Whether a student needs to find their own site and preceptor depends upon the school. Some schools arrange one's clinical rotations, but many others rely fully upon students to find their capstone clinical sites.[18] This obligation would be unthinkable for PA, MD, or DO training programs. Further, the preceptor evaluation of that capstone clinical rotation is often been provided by a person who is not a faculty member of the degree-granting institution.[18] An on-line resource suggests: "If you are responsible for finding your own clinical site, you should be looking for your preceptors as soon as possible."[18] This type of slipshod academic oversight would be unthinkable for PA, MD, or DO training programs.

Yet, further criticism is appropriate. An ANP's capstone rotation occurs all too often, at sites such as private physicians' offices, sites that have seldom been visited by a member of the institution's faculty, to evaluate each site's fitness for clinical training. This demonstrates a lack of appropriate educational oversight on the part of the degree-granting institution. This would also be unthinkable for PA, MD, or DO training programs.

The inescapable conclusion is that by flouting typical university standards for their degree-granting schools and programs, the ANP community invites disrespect for their educational processes.

Key Take-Away Messages

1. When judged against would be the case if proper and consistent application of RBRVS methodology were applied, Medicare and commercial insurers have long been and continue to be paying too much for clinical care provided independently by non-physicians. The conclusions of this article should be leveraged via physician advocacy toward downward revision of ANP and PA reimbursement rates, via employing an RBRVS-concordant reimbursement methodology for non-physician-led care.
2. PA training is closely regulated and appropriately supervised. However, ANPs clinical preparation is often woefully deficient, as is detailed above. Such lack of proper institutional oversight should be troubling to all who obtain care from an independently-practicing ANP, and all who advocate for the scope creep sought by many PAs and ANPs.

3. It is an unassailable fact that ANP training has not yet benefitted from the type of useful reforms visited upon medical school training by the Flexner report, released more than a century ago in 1910.[19] In contrast, these deficiencies do not occur in PA training programs. The ANP community has bumbled along with little if any evidence that they plan to remediate their educational system's numerous deficiencies, while focusing their efforts upon seeking to gain unjustified pay parity with physicians.[8-10] In that regard, the ANP community is falling far short of the educational reforms envisioned within the 2011 RWJF report.[15]
4. Indeed, many of the current deficiencies in ANP training programs arguably represent a form of academic fraud, which should never be allowed by any institution of higher learning, and should invite sanctions from accrediting bodies. Universities that host programs which require their ANP students to secure their own clinical rotation site and/or clinical preceptor would be well-served to have their university's board of trustees investigate why such an embarrassing lack of academic oversight is occurring within their institutions. Could you imagine any other department within an accredited state university sanctioning such management?
5. The time has long passed for ANP programs to discard their apprenticeship clinical educational model, and focus upon Flexnerian-type educational reforms. Once they accomplish this, the next indicated step would be to establish residency programs to remediate the huge clinical training gap that currently exists between ANPs and physicians. Until then, any discussion of proposed pay parity between physicians and non-physicians remain based solely upon opinions that can be exploded by the numerous facts discussed in this manuscript.

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MM

Effects of Pornography on Youth: A Review

by Meelie Bordoloi, MD, Ila Durkin, MD & Arpit Aggarwal, MD

In 2023, Pornhub totaled over 2.14 billion visits during a single month—more than Instagram, Netflix, Pinterest, and TikTok combined. 28,000 people visit porn websites every second.

Pornography refers to sexually explicit material created to 'entertain' and arouse the viewer. A 2002 Australian study found that 73% of boys aged 16-17 years-old watched X-rated movies five times per week.[1] That was in a time when smartphones had just been introduced and were not easily available. Now, over 20 years later, with smartphones omnipresent, children and adolescents have access to porn through the internet, streaming services, social media forums, adult entertainment websites, and virtual private networks. It's available almost everywhere.

Three major factors contribute to increased access: affordability, accessibility, and anonymity.[2] Justifiably, there is a growing concern about the impact pornography has on society in general and young people in particular. There are a wide range of troubling issues that are being studied. I am particularly reminded of a seven-year-old male who was admitted to our inpatient unit for acts of sexual inappropriateness towards his eight-year-old sister. On assessment, he disclosed that he regularly watched internet nude porn images of nude women and scenes of intercourse. Admittedly, the lack of parental supervision is obvious, but this case gives us insight into the complex nature of the porn problem and is the primary subject of this manuscript.



Meelie Bordoloi, MD, and **Ila Durkin, MD**, are Assistant Professors, and Arpit Aggarwal, MD, is Associate Professor, in Child and Adolescent Psychiatry, and Psychiatry at the University of Missouri - Columbia School of Medicine, Columbia, Missouri.

As a parent of a young boy, I often ask myself these questions: At what age do children or youths start watching porn? Does porn adversely influence sexual attitudes and beliefs? Does porn lead to more violence, especially against women? Does porn lead to mental disorders like depression, body dysmorphia and eating disorders? Could porn possibly have benefits such as for sex education?

Based on a literature review, the results are mixed. Causal relationships are not established but there are some risk factors. Peter and Valkenburg conducted a study of peer-reviewed English journal articles from 1995 to 2015, to determine the effects of watching pornography on adolescents. They concluded that watching pornography was linked to a more permissive attitude towards sex and stronger gender-stereotypical sexual beliefs.[3] Users were mostly male and were 'thrill seekers' at a more advanced pubertal stage and often were in dysfunctional families. They were more likely to have sexual intercourse and casual sex which can be related to perpetration and victimization. The authors pointed out the study's limitations. These limitations were pervasive and the common impediments to most sexual behavior studies. Ethical challenges are always primary. Sexual behavior studies cannot have controls for obvious reasons.

Braun et al. and Lo et al. conducted cross-sectional investigations and found strong correlations between exposure to internet sexually explicit content, earlier and more varied sexual activities, and engagement in sexual behaviors associated with deleterious sexual and mental health consequences[4, 5] Adolescents who self-

reported accessing sexually explicit websites had an increased number of sexual partners, participated in a broader array of sexual activities, and often used alcohol and/or drugs in their sexual experiences. These behaviors were linked to an elevated risk of sexually transmitted diseases and unintended pregnancies. As Peter and Valkenberg state: "We must consider limitations with the study's design, including the survey mode and sampling procedure, which contribute to bias.' Subsequently, there is debate over how early researchers can ask such questions in a survey.



Figure 1. Boys are exposed to porn about age 10 to 11 and girls about age 12 to 13. By age 16 about 70% of boys watch porn four to five times per week.

The earliest age noted in the studies was 10 years-old, which also corresponds to the average age at which young boys are exposed to porn, for girls by age 12 to 13 (Figure 1). There is a lack of longitudinal follow up which could help determine future criminal behavior as most studies are cross sectional surveys in young adults. As no random controlled studies can ethically be done in youth porn use, we cannot control the environment and rule out all the confounding factors that may influence porn's effect on future criminal behavior. Body image can be influenced by social media but does pornography per se increase the risk of negative body image? It is difficult to determine based on the multiple influences that children and young youths have in the 21st century. Does viewing pornography itself lead to depression or anxiety? Most likely not, but it can increase the isolation that plagues today's young and further reduce motivation to seek gratification elsewhere, especially in beneficial social relationships.

A common concern to parents and researchers is whether pornography can be an addiction. In a landmark study in 2005, Nestler proposed that the ventral tegmental area nucleus accumbens pathway in part mediates the acute positive effects of rewards from natural incentives for survival like food and sex. This is similar to exogenous compounds like illicit drugs.[6] This has been confirmed over the years, which gives substance to porn being often addiction and a legitimate public health problem. It is interesting to note that just a few decades earlier the Commission on Obscenity and Pornography published a report in 1970 that suggested there was no evidence of individual negative effects of watching porn. Additional research and changes in public perception no longer favor that benign interpretation of frequent viewing of pornography.

What are some possible solutions to the porn problem? Limiting access is a preventative treatment strategy but presently seems impossible. From personal smartphones to ubiquitous internet access, youths have many portals to pornographic material. To address this, parental control apps are marketed which signal inappropriate use to parents and help curb porn viewing. There is some evidence for using Motivational Interviewing for pornography with favorable results.[7] Group therapy on porn use and abuse has been beneficial. There is also a role for Acceptance and Commitment Therapy.[8] In pharmacotherapy, antidepressants such as selective serotonin reuptake inhibitors are the first-line pharmacological treatment for sexual addiction; naltrexone may also have some benefits.[9] Comorbid psychiatric disorders, like depression and anxiety, should be identified and treated. Most of these porn viewing children and adolescents have a deep sense of shame and guilt; strong parental and school support is essential for recovery. Ultimately parental awareness, supervision and guidance are the keys to having a healthy view of sex. Sex education might include instruction on contraception, risky sexual behavior, HIV, prevention of sexually transmitted diseases, and maintaining sexual health.

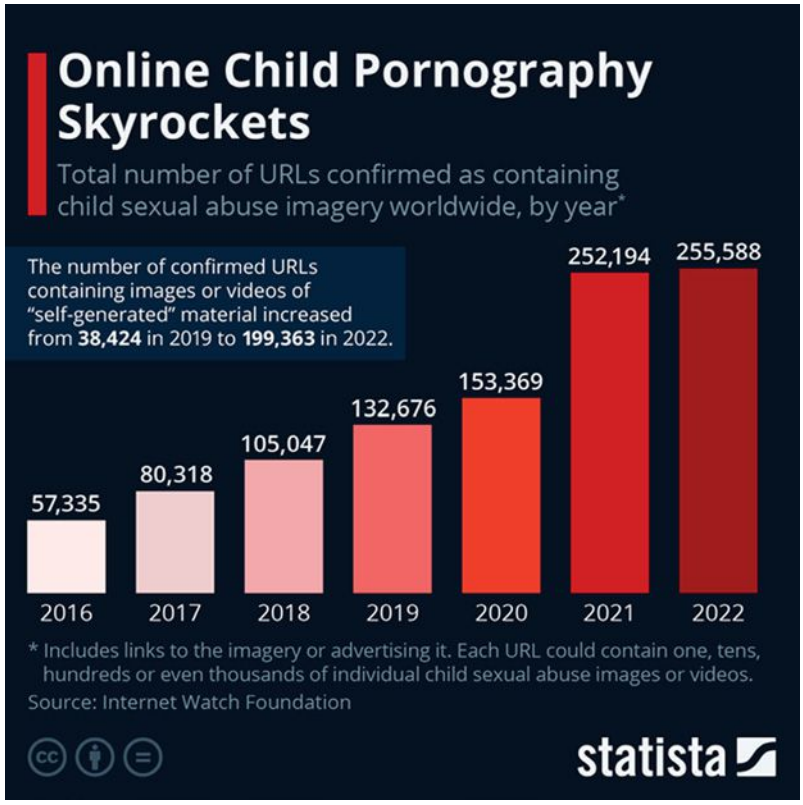
Much of contemporary sex education has been defaulted to schools. Recently, there has been a debate about the inclusion of graphic photographs of intercourse between genders in school libraries. This issue has both strong proponents and strong opponents. Most importantly, having a trusted adult in the school, such as an impartial counselor, may facilitate communication and enhance the sex education process. It would be beneficial to have

parents engaged in the process as well. Schools may also benefit from a proper prevention program similar to those for addiction. A school in Malaga, Spain, tried to develop and implement a contemporary educational/preventative program with mixed results.[10] While the Diagnostic and Statistical Manual of Mental Disorders (DSM 5-TR) doesn't recognize internet use disorders, the American Psychiatric Association (APA) recognizes internet use disorders as a growing concern including problematic use of internet pornography.[11]

Conclusion

The exact effects of pornography are not yet completely determined and deserve further study. An obsession with porn is detrimental as are most addictions. Given the enormous and increasing exposure of our youth to pornography it deserves to be designated a public health problem and considerable resources devoted to education, research, prevention and treatment of porn habituation and addiction.

1 PICTURE = 1,000 WORDS



The US hosts more child sexual abuse content online than any other country and accounts for about 30% of the global total of child sexual abuse material according to Internet Watch Foundation, more than any other country.

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Opening quote source:Earthweb.com
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MM

Physician Organizing: Trends and Takeaways

by Trecia Moore, JD & Mary-Ann P. Czak, JD

The National Labor Relations Act ("NLRA") protects the right of private sector employees "to form, join, or assist labor organizations" – in other words, join a union.[1] Union membership, however, has been on the decline since its peak in the 1950s when approximately one-third of private sector workers were unionized.[2] In 2023, 10% of the total U.S. workforce and 6% of the private sector workforce belonged to a union.[3] Despite union membership being at an all-time low, organized labor is experiencing a revitalization and unions are winning over the court of public opinion. In fact, 67% of Americans approve of labor unions (the fifth straight year approval has exceeded the long-term average of 62%) and 61% say unions help rather than hurt the U.S. economy.[4] Unions are also winning elections. In FY 2023, unions won 76% of representation elections – an increase from 72% in FY 2022.[5]





Trecia Moore, JD, senior counsel specializing in traditional labor law, and Mary-Ann P. Czak, JD, a senior associate specializing in traditional labor law, of Husch Blackwell, LLP, co-wrote this article. The information contained in this article should not be construed as legal advice or a legal opinion on any specific facts or circumstances. The contents are intended for general information purposes only, and readers are encouraged to consult their attorney concerning specific situations and specific legal questions.

This renaissance is especially true among younger workers and those employed in industries not generally thought of as ripe for unionization. Although still dominant in historical strongholds such as manufacturing and construction, union organizing efforts have gained traction in areas such as banking and finance, retail, engineering, and technology. Even physicians – arguably viewed as the apex of white-collar professionals – have been more willing to consider unionization in recent years.

The Rise of Physician Unions

A recent study issued by the American Medical Association ("AMA") analyzed the shift in physician practice arrangements.[6] Between 2012 (the first year of the Benchmark Survey) and 2022, the share of physicians who were employees increased from 41.8% to 49.7%. During that same period, the number of self-employed physicians decreased from 53.2% to 44%. The structure of practice ownership went through a similar transformation. Between 2012 and 2022, the share of physicians who worked in private practice decreased from 60.1% to 46.7%. Most physicians now work outside of physician-owned private practices – 31.3% work in a hospital-owned practice, 9.6% are employed by or contract directly with a hospital, and 4.5% belong to a practice owned by a private equity group. The study identified the following as top reasons physicians sold their practice to a hospital or health system: the ability to better negotiate higher payment rates with payers; the ability to better manage payers' regulatory and administrative requirements; and to improve access to costly resources.

This change in practice structure and ownership has likely contributed to the gradual rise in physician interest in unionization. As the number of physicians working as employees increases, so too does the pool of physicians eligible to join a union and collectively bargain under the NLRA. From 2014 to 2019, the number of physicians belonging to unions increased from 46,689 (5.7% of the 820,152 practicing physicians in the U.S.) to 67,673 (7.2% of the 938,156 physicians practicing in the U.S.).[7]

Why Physicians Organize

Each workplace is unique with its own set of issues and challenges. When it comes to why employees organize, many of the same themes transcend across industries. Respect, a voice in the workplace, autonomy, burnout – all are frequently cited reasons in response to why employees turn to unions to fix their workplace problems. Physicians are no different.

The number of physicians employed by hospitals or large-scale health systems is gradually increasing. As the AMA noted in a recent Advocacy Resource Center Issue Brief, many hospital markets are highly concentrated and becoming more so.[8] Physicians in these markets likely have limited hospital-employment alternatives. Coupled with the fact that most physician employment contracts contain non-compete language, hospitals and health systems are in a stronger position of bargaining power compared to the physician employee. Thus, the perceived strength of collective bargaining through a union may be appealing to physician employees as the practice structure continues to trend towards hospital and health-system ownership.

Physician autonomy and limitations on the exercise of independent medical judgment are frequently cited by physicians who have undertaken organizing efforts. For example, in 2015, the hospitalists at PeaceHealth Sacred Heart Medical Center in Springfield, Oregan voted to form a union affiliated with the American Federation of Teachers.[9] In doing so, the hospitalists cited being treated as "assembly line workers" by way of performance metrics which encroached on the doctor-patient relationship as motivation for unionizing. In October 2023, five hundred and twenty-five physicians employed by Allina Health System, in sixty-one clinics across Minnesota and Wisconsin, voted to unionize with the Doctors Council, an affiliate of the Service Employees International Union, voicing similar concerns as to their reasons to unionize.[10] Specifically, that profitability tied to certain benchmarks (e.g., minimum number of patients who have undergone certain preventative testing) resulted in physicians being pushed to sacrifice clinical time with their patients.

Likewise, the centralization of healthcare and transition away from physician-owned private practices can result in non-clinicians making decisions directly impacting patient care. This disconnect – and the resulting frustrations felt by physicians – have also been identified as a driving force for physician organizing.[11]

Burnout is another motivating factor for physician unionization, especially post-COVID-19 pandemic. As reported by the AMA in 2022, the overall burnout rate for physicians was 53% and, despite the waning of the pandemic, 56% of physicians reported high levels of job stress.[12] Survey respondents identified the primary stressor as the need for better staffing ratios and additional support to reduce physician workload. This increasing burden of administrative tasks on physicians has resulted in less direct patient contact. As reported in the *New Yorker* by Eric Topol, MD, "Administrative tasks have become so burdensome that, according to one recent report, only thirteen percent of a physician's day, on average, is spent on doctor-patient interaction. Another careful study of doctors' time has shown, during an average eleven-hour workday six hours are spent at the keyboard maintaining electronic health records."[13]

Conclusion

When it comes to possible union organizing, proactive measures are key. Union organizing does not happen overnight and employers must be prepared to respond even before physicians are interested in third-party representation. The following factors have been identified by physicians as important determinants in physician professional satisfaction.[14]

- Quality of care. Physicians identified impediments to providing high-quality care as a major source of professional dissatisfaction (e.g., time pressures, issues with payers covering services).
- Autonomy and work control. The greater the autonomy and control over clinical work, the better the professional satisfaction.
- Leadership. Values alignment with leadership, especially concerning approaches to clinical care, resulted in higher professional satisfaction.
- Work quantity and pace. Pressure to increase the quantity of services and number of patients seen per day negatively impacted professional satisfaction.
- Work content and support staff. Physicians expressed dissatisfaction when required to perform work other staff could perform (e.g., administrative tasks).

Keeping in mind the foregoing, consider what your organization is doing to neutralize the need for a union. Ask yourself the following questions – What issues have physicians raised in your workplace? How have you addressed those issues? Are there avenues by which physicians can communicate their concerns directly to leadership? If so, are those avenues working, if not how can you open this space for better communication? How can you support physicians experiencing burnout? Do you have a team ready to respond to potential union organizing? As physicians continue to warm up to the idea of unionization, the time to act is now.

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My Life in the Golden Age of Medicine

by Arthur Gale, MD

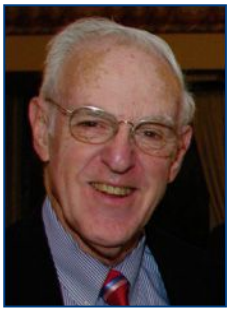
I was born and raised and still live in the St. Louis, Missouri, metropolitan area, and grew up during World War II. My family and I followed the progress of the war closely at the dinner table and we also knew about the extent of the Holocaust. I think these historical events had a great influence on my later life. I have a large home library with many books on these topics which I continuously read and reread.

When I graduated high school, I wasn't sure what I wanted to do. I was in a liberal arts program at Washington University in St. Louis for two years and then transferred to the University of Chicago to study the social sciences. At that point, I then decided to be a physician and I returned to Washington University to complete my undergraduate degree. I then applied to the University of Missouri School of Medicine, was accepted and there obtained my MD degree. I interned and did an internal medicine residency at the Jewish Hospital of St. Louis (now Barnes Jewish Hospital) which was both a community and a teaching hospital affiliated with the Washington University School of Medicine. I then applied for and received a research fellowship in allergy, immunology and arthritis at the Scripps Clinic and Research Foundation in La Jolla California.



Dr. Gale with his wife, Marilyn.

I returned to St. Louis and then joined a very busy internal medicine group practice which was in a privately owned multi-specialty clinic. My first weekend in practice I made three house calls with my black bag that carried some basic



Arthur H. Gale, MD, is a *Missouri Medicine* Contributing Editor. He is a retired Internal Medicine physician in St. Louis.

medications, a blood pressure cuff, and an oral thermometer. There were no emergency room doctors. Residents on the medical service came down to the emergency room and examined patients who came to the emergency room.

I became board certified in internal medicine and at that time select physicians in private practice were the main teachers of internal medicine to interns and residents. They were not financially compensated. I became a clinical associate professor of medicine at WU and also taught at the Jewish Hospital, teaching house staff and medical students. Those years were some of the most satisfying and enjoyable that I had in my career.

After about 25 years new Medicare rules and the rise of managed care private physicians were eliminated from teaching roles. I thought then and still think this was a mistake. Physicians in private practice in the real world of medicine have much to offer interns and residents. I am now a clinical Associate Professor of Medicine Emeritus.

I became involved with organized medicine for about fifteen years, first with the organized medical staff section and then as a Missouri delegate to the American Medical Association. I introduced many resolutions, many of which were about my concerns about managed care. Managed care was supposed to lower health care costs eliminating private practice. I began writing articles mainly in *Missouri Medicine* showing that health care costs have actually increased under managed care to the point that the US has by far the highest health care costs of all the industrialized democracies.

I practiced internal medicine for over fifty years all in private practice. I have been retired now for about five years. I still write occasional articles about our health care system primarily in *Missouri Medicine*.

About eight years ago I initiated and sponsored a lecture series on Medicine and Health Care at the St. Louis County Library. It is called the Arthur Gale Medical Arts Lecture Series. Publishers send authors of recent books on medicine and health care to give talks at the library. I thought then and still believe that the public needs to make informed decisions about their health care based on objective information and not depend on advertisements in the media. These talks have been very successful often drawing large crowds with much audience participation. **MM**



Richard Sisson, MD, right, presents Dr. Gale, (left) with a plaque commemorating his term as Jewish Hospital's Medical Staff Association President.



Dr. Gale initiated and sponsored a lecture series on Medicine and Health Care at the St. Louis County Library.



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Pediatric Palliative Care: A Place for Hope

by Lauren Draper, MD

Within the context of the family the pediatric palliative care team can begin to address worries, but also help the family and patient find hope. The palliative care team works to "cloak" the symptoms and maximize hope and living.



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Introduction

Pediatric palliative care is often misunderstood by both families and providers. Pediatric palliative care aims to prevent and relieve suffering for children diagnosed with complex and life-limiting illnesses or injuries. The specialty name itself comes from the Latin word *pallium* which means to cloak. Palliative care's goal is not to cure, but to "cloak" or cover up the symptoms from the disease or treatment.

Many of the misconceptions regarding palliative care are related to patients, families, and providers equating palliative care with care for the dying. This is likely related to how the specialty began in the 1950s. Dr. Cicely Saunders focused on modern hospice care providing a multidisciplinary approach to "relieve the total pain of a dying person."[1]

From there the specialty of palliative care expanded to not just included hospice and end of life patients, but rather all patients with chronic or life-limiting diseases. This expansion started in 1974 with Balfour Mount, MD, who brought the idea into academic hospitals starting in Montreal. It was in 1990 that the World Health Organization recognized palliative care as a distinct medical specialty[2] and then in 2006 Hospice and Palliative Care medicine was recognized as a subspecialty by the American Board of Medical Specialties. Since then, the practice of palliative care has continued to expand. In 2013 it was reported that 69% of pediatric hospitals had a palliative care program, but with significant variability of staffing and team composition.[3]

Team-Based Care

To dispel misconceptions regarding pediatric palliative care, one must first understand how we care for patients and who is cared for by the team. Foundationally palliative care is delivered by an interdisciplinary team. No one role is more or less important, and no one role can provide the whole patient care that is necessary. Literature reviewing care from both the provider and patient perspective reports that palliative care is best delivered through a multidisciplinary team.[4]

In the US, the type of children that deserve palliative care as part of their medical team varies from the adult demographics. Neonates with extreme prematurity or severe congenital anomalies make up a large portion of referrals. The patient mix also includes children with static encephalopathy, other severe neurologic diseases, metabolic and genetic conditions, in addition to children with malignancies, severe injuries, severe pulmonary diseases, and others.[5]

At SSM Health Cardinal Glennon Children's Hospital the palliative care team includes physicians, nurse practitioners, nurse coordinators, administrative support, and social work to provide both family support and bereavement resources. They work closely with the hospital-wide child life and therapy teams, plus pastoral care. Over the previous three years the team has provided palliative care services to more than 300 children

annually, averaging 25-30% of the hospital census being an active palliative care patient.

Additionally, the team follows almost 100 families for ongoing bereavement support for up to three years after the death of their child. Upon examining the numbers, it becomes clear, many children that need and receive palliative care services are not dying, rather they are living with a life-threatening illness. These children often have a high symptom burden and high degree of medical complexity and dependence on medical technology.[6] The role of the palliative care team is not one of death, but rather one of symptom control and hope.

Hope

To best control symptoms and provide recommendations a palliative care team must help a family define the worry and also the hope. A family can often describe that they are worried, but will struggle to define what exactly they worry about. Literature suggests that more than 50% of families and providers have discordance regarding prognosis.[7] With such discordance on outcomes between providers and families, it is clear that the worries are also different. While families and patients worry about the big things: will their child die, will they hurt, how long do they have, they also worry about the day-to-day living.

Just recently when discussing a relapsed malignancy with a family, after the initial shock, the first question was: "Can she go to the homecoming dance before starting therapy again?" The medical team's ability to answer the big questions is often limited, but they can answer a question about living. Understanding what families worry about will also help the team understand what they hope for their child and family. This family worries about their child's long-term survival, but also their ability to experience the traditional fun activities of starting high school: football games, homecoming dances, and learning to drive.

It is with that knowledge the team can guide recommendations surrounding the next phase of therapies. Knowing hopes and worries allows the team to strike the delicate balance between aggressive treatments and quality of life, especially as that balance changes in the arc of an illness.

Sometimes, despite all the care and knowing all the hopes and worries, it becomes apparent to either the medical team or family or patient or all of them, that long term survival is not possible. It is in these moments that it is vital for the palliative care team to continue to foster hope within the family. Hopes look very different when a child's life is shortened, but not hopeless. Many of the fears and hopes at this time focus on smaller life events or symptom management. Families have the ability to define and hope for a good day still with their loved one. It is in this space that palliative care teams remain imperative. The time spent building relationships and understanding the family dynamics allows the team to continue to make recommendations aligned with their hopes and goals.

Conclusion

The foundations of palliative care are in a team-based approach to caring for dying adults. As the medical specialty has grown it has expanded to care for patients living with life threatening illnesses and injuries, including pediatric patients. The interdisciplinary team of palliative care provides a unique opportunity to care for the patient as a whole, a member of a family and community, rather than just a diagnosis or set of symptoms. Within the context of the family the pediatric palliative care team can begin to address worries, but also help the family and patient find hope. The palliative care team works to "cloak" the symptoms and maximize hope and living.

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Diabetes and Dyslipidemia Screening in Pediatric Practice

by Jordyn Huston, MD, Deepti Sudhakar, BS, Poornaashri Malarvannan, MD, Riya Aradhyula & Amy L. Clark, DO

The rates of pediatric diabetes and hyperlipidemia are increasing rapidly requiring pediatricians to be well educated on the recommended screening for these disorders.



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Abstract

The incidence of diabetes and hyperlipidemia are increasing at rapid rates in children. These conditions are associated with increased risk of macrovascular and microvascular complications causing major morbidity and mortality later in life. Early diagnosis and treatment can reduce the lifelong risk of complications from these diseases, exemplifying the importance of screening in the pediatric population. The following article presents a summary of the current guidelines for diabetes and hyperlipidemia screening in pediatric patients.

Type 1 Diabetes Screening

Type 1 diabetes (T1D) is an autoimmune disease characterized by the destruction of pancreatic β-cells resulting in insulin deficiency and hyperglycemia. T1D is the most common form of diabetes in children, with a peak incidence occurring between the ages of 10 and 14.[1] The incidence of T1D in childhood and adolescence is steadily rising and now stands at 22.9 new cases per year per 100,000 persons up to age 15.[2] From 2001 to 2017, the number of children under the age of 20 with T1D increased by 45%.[3] Type 1 diabetes can be difficult to identify as it often has months of very subtle clinical manifestations. Because of the mild early symptoms, 40% of new onset T1D patients go undiagnosed until they are severely ill and present in diabetic ketoacidosis (DKA).[4] DKA is an emergent life-threatening complication of T1D. Up to 70% of T1D-related deaths in individuals under the age of 25 have been estimated to be due to lack of prompt diagnosis.[3] Pre-symptomatic screening and follow-up in patients with high risk of T1D has been shown to significantly reduce the risk of DKA to less than 5%.[5] As the incidence of T1D is increasing, screening of high-risk patients for T1D to prevent complications such as DKA is increasingly important.

Clinical trials have demonstrated that the risk of developing T1D can be determined by examining islet cell autoantibodies in the blood.[6] Current T1D screening guidelines recommend blood work to identify autoantibodies to glutamic acid decarboxylase (GAD-65), islet antigen 2 (IA-2), and zinc transporter 8 (ZnT8) in patients with a first-degree relative with T1D. The American Diabetes Association expanded screening recommendations for islet autoantibody testing to include the general population in research study settings based

Table 1. Diagnostic criteria for the three stages of type 1 diabetes. OGTT=2-hour plasma glucose (2-h PG) value during a 75-g oral glucose tolerance test A1C=Glycated Hemoglobin * or ≥10% increase from previous measurement

Staging of Pre-Symptomatic T1D	Stage 1	Stage 2	Stage 3 Diagnosis of T1D
Islet autoantibodies Fasting plasma glucose OGTT A1C Random plasma glucose	≥2 < 100mg/dL < 140 mg/dL < 5.7%	≥2 100-125 mg/dL 140-199 mg/dL 5.7-6.4% *	≥2 ≥ 126 mg/dL ≥ 200 mg/dL A1c ≥ 6.5% ≥ 200 mg/dL

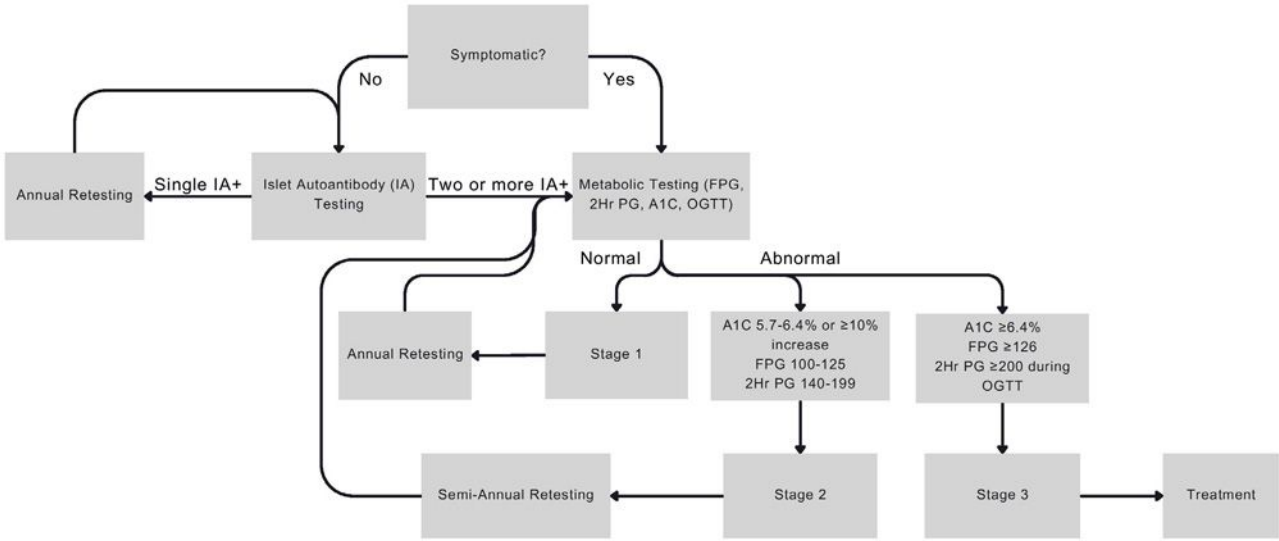
on the finding that over 90% of T1D patients do not have a family history of T1D.[7] If one T1D-associated islet autoantibody is detected, the risk for T1D progression is 10%.[8] If two or more T1D-associated islet autoantibodies are detected, the risk of T1D progression is 70% in 10 years and reaches nearly 100% over a lifetime.[8] Interestingly, family history does not make a significant difference in the progression to T1D in patients once two or more islet autoantibodies are detected.[9,10]

In 2015 the American Diabetes Association, Juvenile Diabetes Research Foundation, and Endocrine Society worked together to define clinical stages in the progression from autoantibody positivity to diabetes development in patients. This process is referred to as staging presymptomatic T1D.[11] By staging autoantibody positive patient progression from ≥2 autoantibodies to fulminant diabetes, researchers identified therapeutic windows for the use of medications to prevent T1D. If patients have ≥2 islet autoantibodies, then screening for diabetes is recommended. Diagnostic testing may include fasting plasma glucose (FPG), two-hour plasma glucose during a 75-g oral glucose tolerance test (OGTT), random plasma glucose, or glycated hemoglobin test (A1C). Patients are considered stage 1 if they have normoglycemia, stage 2 if they have any level of dysglycemia, and stage 3 when they meet diagnostic criteria for diabetes (Table 1).[11]

While it is known that patients with ≥2 islet autoantibodies have a high risk of T1D, until recently there were no FDA-approved interventions to prevent or delay the onset of diabetes. This changed in 2022 when the FDA approved teplizumab as the first medication to treat patients with stage 2 T1D. Clinical trials have demonstrated that in patients with ≥2 islet autoantibodies and dysglycemia teplizumab can delay the onset of clinical diabetes.[12,13] With the approval of teplizumab, there is increased interest in re-defining which patients should be screened for islet autoantibodies. Guidelines now suggest all patients with first degree relatives with T1D should be screened. However, with the approval of teplizumab the utility and feasibility of moving to universal screening of children for islet autoantibodies is an active area of investigation.[8]

Based on current recommendations, patients with first degree family history of T1D should be screened with islet autoantibodies, and those with ≥2 should then be tested for diabetes. Patients with first degree relatives with T1D have access to free islet autoantibody testing via theT1D research organization Trial Net. Trial Net is involved in ongoing studies of the natural history of T1D development and interventional trials to prevent diabetes.[14] Trial Net islet autoantibody testing can be done by the parents at home with capillary samples or arranged to be done at a local lab. While autoantibodies can be ordered via primary care physician or endocrine team, insurance coverage for testing in asymptomatic patients is often not covered. If a child is found to have ≥2 islet autoantibodies, referral to a pediatric endocrinologist is recommended for diabetes screening and staging. For stage one monitoring is recommended for development of dysglycemia, for stage 2 treatment with teplizumab can be considered, and for stage 3 treatment with insulin is typically required (Figure 1).

Figure 1. Suggested screening for type 1 diabetes and follow up based upon staging.



*patients exhibiting symptoms of diabetes (polyuria, polydipsia, weight loss, fatigue) should be screened immediately for diabetes.

Type 2 Diabetes Screening

Type 2 diabetes (T2D) is a metabolic disorder characterized by insulin resistance which results in hyperglycemia. The incidence and prevalence of T2D has been increasing in the United States.[15] Based on data from the SEARCH study, among individuals in the United States under the age of 20, the prevalence of T2D was 0.67 per 1,000 in 2017 and the incidence was 13.8 per 100,000 in 2014-2015.[15,16] Alarmingly the prevalence of T2D in youth increased by 95% in the US from 2001 to 2017.[3] In our own patient population at Cardinal Glennon the number of patients diagnosed with new onset T2D doubled comparing the years 2018-2020 to 2020-2022 (unpublished data). Over the past two decades, Black, American Indian, and Hispanic youth have had the highest incidence and prevalence of childhood onset T2D, which reflects that T2D disproportionately impacts youth from disadvantaged backgrounds and racial minorities.[1,15] Some risk factors for early onset T2D include family history, obesity, low physical activity, ethnicity, and socioeconomic status. Increases in childhood obesity over the last few decades have corresponded with the increase in childhood onset T2D and earlier ages of T2D diagnosis.[17,18] This is concerning because earlier ages of diabetes onset have been associated with worse health care outcomes due to the greater risk of dyslipidemia and micro and macrovascular complications.[17,19] For example, longer exposure to hyperlipidemia in early onset T2D increases the risk of coronary heart disease.[19] Thus, early screening for high-risk individuals and early implementation of interventions could reduce diabetes complications and improve quality of life, morbidity, and mortality.

The American Diabetes Association (ADA) along with the American Academy of Pediatrics first recommended screening for T2D in asymptomatic youth ages 10 and older in the year 2000. Initial recommendations were only to screen high-risk youth, defined as being overweight and with two or more risk factors for diabetes development (Table 2).[20] The ADA expanded this recommendation to include all overweight youth with at least one risk factor for diabetes development in 2018.[21]

Table 2. Recommendations for risk-based type 2 diabetes screening in children.

Consider screening in youth >10 years or after the onset of puberty who have overweight (>85th percentile) or obesity (>95th percentile) AND one or more additional risk factors:

- Maternal history of diabetes during her pregnancy with the child
- Family history of type 2 diabetes in first- or second-degree relative
- Race/ethnicity of Native American, African American, Latino, Asian American, or Pacific Islander
- Signs of insulin resistance (acanthosis nigricans, hypertension, dyslipidemia, polycystic ovary syndrome)

Table 3. Diagnostic criteria for type 2 diabetes.

- Fasting Plasma Glucose >/=126 mg/dL (7.0 mmol/L)
- Two-hour Plasma Glucose >/=200 mg/dL (11.1 mmol/L) during OGTT
- A1C >/=6.5% (48 mmol/mol)
- Random plasma glucose >/=200 mg/dL and symptoms of diabetes (polyuria,polydipsia, weight loss, fatigue)

Once a provider decides to screen a patient, they must decide which test to use and how to interpret the results. There are multiple guidelines for the interpretation and management of screening results for T2D. The main guidelines followed in pediatrics include those of the ADA and the International Society for Pediatric and Adolescent Diabetes (ISPAD.)[22-24] Hemoglobin A1C is an appropriate first line test for most children and adolescents. However, the diagnosis of diabetes requires two abnormal screening results. These can be from the same sample or from two different samples.[24,25] Diagnostic criteria for T2D can be found in Table 3.[24] A screening flowchart based on ADA and ISPAD guidelines can be found in Figure 2.

If a patient is found to have prediabetes, the goal of care should be to prevent them from developing T2D. There are currently no medications which are FDA-approved for the treatment of pre-diabetes. However, the efficacy of lifestyle changes for prevention of T2D has been well-demonstrated among patients with pre-diabetes.[26] Many dietary changes are effective in preventing the development of T2D, and a focus on lower calories as well as incorporating more fruits, vegetables, whole grains, legumes, and nuts is associated with a lower risk.[27] It is recommended to refer these patients to a registered dietician who can help guide these recommendations in a developmentally and culturally appropriate manner. In addition, increased physical activity should be encouraged in these patients. Moderate intensity physical activity improves insulin sensitivity and reduces abdominal fat in children and adolescents. While 60 minutes of daily physical activity is recommended for all children, better results have been seen with 150 minutes per week of moderate exercise.[27,28] If a patient meets diagnostic criteria for diabetes, a referral to a pediatric endocrinologist is appropriate as medical management is indicated.

Hyperlipidemia Screening

Cardiovascular disease is the leading cause of death in the US. The incidence of pediatric hyperlipidemia is increasing with the obesity epidemic.[29] An estimated 13% of adolescents have increased cholesterol levels.[30] The atherosclerotic changes leading to adult cardiovascular disease are known to begin in childhood.[31] This is especially true in cases where children have known risk factors of cardiovascular disease including hyperlipidemia, diabetes, and hypertension. As hyperlipidemia is an asymptomatic disease which leads to early cardiovascular disease and even death, screening for hyperlipidemia in children is an important aspect of preventative medicine.

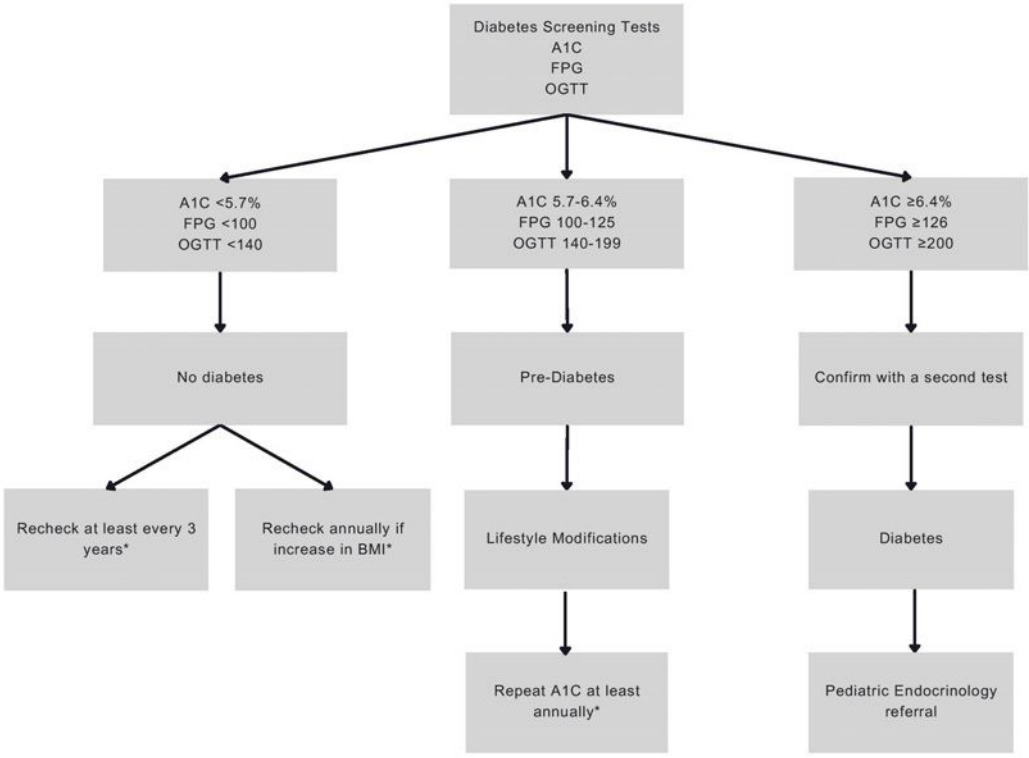
In 2011 the National Heart, Lung, and Blood Institute published the "Expert Panel on Integrated Pediatric Guideline for Cardiovascular Health and Risk Reduction" which outlined universal screening protocols and management for hyperlipidemia in children.[32] While there has been some controversy regarding the recommendation for universal screening in children,[32,33] these guidelines were endorsed by the American Academy of Pediatrics in 2012. The guidelines recommend screening all children for hyperlipidemia with a fasting lipid

Table 4. Reference ranges for fasting lipid levels in children.

Lipid Levels (mg/dl)	Acceptable	Borderline	High/Low
Total Cholesterol	<170	170-199	≥200
LDL	<110	110-129	≥130
Triglycerides			
Age 0-9 years	<75	75-99	≥100
Age10-19 years	<90	90-129	≥130
HDL	>45	40-45	<40

LDL=low density lipoprotein, HDL=high density lipoprotein

Figure 2. Suggested screening for type 2 diabetes and follow up based upon results.



*patients exhibiting symptoms of diabetes (polyuria, polydipsia, weight loss, fatigue) should be screened immediately for diabetes.

panel between the ages of 9-11 and if normal screening again between the ages of 17-21. The panel also recommended screening fasting lipid panel ages 2-8 in patients with high risk for hyperlipidemia (first or second degree relative with early cardiovascular disease, parent with total cholesterol over 240 mg/dl or known genetic lipid disorder, or child with high risk condition such as diabetes, HTN, BMI ≥95%, or cigarette use). Hyperlipidemia in children is diagnosed based on results from the average of two fasting lipid panels using the 2011 guidelines which classify levels as acceptable/normal, borderline high, and high/low (v 4). For patients with borderline lipid levels recommendation is to treat with intensive diet and exercise intervention followed by repeat fasting cholesterol level in six months. Patients and families should be referred to registered dietician to discuss low cholesterol diet and encouraged to participate in at least 150 minutes of

physical activity a week. Patients with lipid levels in the high range should be referred to lipid specialist for evaluation and assessment of the need for lipid lowering mediations in addition to lifestlye modifications.

Conclusion

The rates of pediatric diabetes and hyperlipidemia are increasing rapidly requiring pediatricians to be well educated on the recommended screening for these disorders. By screening children for these diseases pediatricians can help prevent future cardiometabolic and diabetes related morbidity and mortality.

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Managing the Mother-Baby Dyad Affected by Substance Disorder: A Statewide Quality Collaborative Initiative

by Kimberly Spence, MD & Alison Williams, DNP

The collaboration between the Missouri Hospital Association and the Missouri Telehealth Network's Mothers, Infants and NAS ECHO improved the care and safety of this high-risk dyad across 14 birth centers and can be used as a model for other QI initiatives across the state of Missouri.



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Abstract

Neonatal abstinence syndrome (NAS)/Neonatal opioid withdrawal syndrome (NOWS) and substance abuse disorder (SUD) rates are undeniably linked with the outcomes of mothers and babies. This essential relationship emphasizes the importance of quality improvement work done jointly, treating mother and infant as a dyad, not as separate entities. In 2020 the Missouri Hospital Association (MHA) partnered with Show-Me ECHO, a state-funded telehealth project, to initiate a state-wide quality improvement (QI) project to improve and standardize care delivery to the mother-baby dyad affected by SUD. Fourteen hospitals participated across the state of Missouri from January 2021 through December 2022. Through the ECHO model and technical implementation support, 100% of collaborative participating birth centers implemented a non-pharmacologic policy for the care of the substance-exposed newborn. In addition, maternal SUD screening increased by 67.3% (57.5% to 96.2%), infant transfer rates were reduced by 24%, and safe care discharge plans increased by 37% for infants and 144% for mothers. Further, the collaboration between MHA and the Show-Me ECHO demonstrates the feasibility of cross-sector efforts to create synergy to improve and standardize the care of the mother-infant dyad affected by SUD.

Introduction

In a policy brief published by MHA, the rate of NAS diagnosis has increased by 286% over 10 years, correlating with the increased severity of the opioid epidemic over the same period.[1] Many of these infants are polysubstance exposed, meaning they are exposed to more than one substance *in utero*.[2] These neonates are at high risk for experiencing withdrawal symptoms and acute toxicity or semi-permanent neurologic sequelae from *in utero* substance exposure. Most level 1 nurseries and medical teams express a lack of confidence in managing infants with NAS.[3] Care of the drug-exposed neonate is expensive and fragmented. Historically, infants with NAS were transferred to a higher level of care pediatric

facility, away from their mothers and homes, and managed with an extended post-natal wean of oral opioids such as morphine or methadone. Hospital charges for infants with NAS average $33,000 compared to less than $5,000 for non-NAS births in the state of Missouri, a difference of 570%.[4] These increases have been steeper in rural and tribal areas and among infants enrolled in the Medicaid program.[5,6]

The prolonged length of stay was largely driven by the historically accepted management of infants with NAS which entailed scoring the infant symptoms through use of the Finnegan Scale.[7,8] The Finnegan assessment tool assigns a numerical value to the common symptoms of opioid withdrawal, such as sneezing, prolonged crying or tremors, and when summed together, provides a "Finnegan" score.[7] This score was then used to guide the initiation and weaning of pharmacologic therapy such as morphine.[7] However, recent reconsideration of the Finnegan scoring tool has identified two significant issues; the Finnegan score does not necessarily reflect the function of the infant, nor does it emphasize or reflect non-pharmacologic care as a primary intervention.

Non-pharmacologic care is universally available and inexpensive. It includes rooming in with the mother, skin-to-skin, reduction in environmental stimulation, and breastfeeding, if eligible. Parental rooming-in and breastfeeding are the two most successful non-pharmacologic interventions to reduce length of stay (LOS) and pharmacologic intervention for infants with NAS.[9,10,11] Non-pharmacologic care is now the standard of care for all infants regardless of a NAS diagnosis and is specifically cited by the American Academy of Pediatrics as the first line of therapy for infants with *in utero* drug exposure.[12]

In 2017, results were published from a novel functional assessment tool used to manage patients with NAS, incorporating a comprehensive non-pharmacologic bundle, "Eat, Sleep, Console" (ESC).[13] ESC was shown to reduce pharmacologic treatment to as low as 12% from over 90% in this cohort and reduced LOS from 22.9 days to 5.9 days.[13] When the ESC model was applied at SSM Health Saint Mary's Hospital in St. Louis, transfers to the Newborn Intensive Care Unit were reduced from 71% to 6.6%.[14] This finding was significant because it demonstrated that the ESC management strategy could be utilized by all mother-baby units and dramatically reduce transfers of infants to tertiary care facilities. Other benefits included streamlined care for the infant, continuity within the healthcare team, and providing care close to home, all of which reduce financial, emotional, and social strain on these families and greatly reduce costs to Medicaid and other insurance carriers.[14] Furthermore, this strategy had multiple other effects, including empowering parents, facilitating bonding, and reducing post-natal opioid exposure.[13,14] The ESC program has now been further validated by a cluster-randomized, controlled trial at 26 US hospitals which compared LOS of patients managed with Finnegan to those managed with ESC.[15] This trial found patients managed with ESC had a significantly reduced LOS (average of 14.9 days versus 6.7 days, $p < 0.001$).[15]

To spread and further support implementation of this model and improve outcomes statewide, MHA partnered with Show-Me ECHO in 2020, a state-funded telehealth project, to initiate a statewide, multi-site quality improvement initiative to improve care delivery to the mother-baby dyad affected by SUD entitled, Missouri Neonatal Abstinence Syndrome Collaborative. This partnership was formed to encourage birth centers in Missouri to implement the ESC functional assessment to help standardize care and reduce transfers to tertiary care.

Intrinsic to the success of ESC is the empowerment of the family. In order for a family to feel and think they can care for their child, they need support and education to gain confidence in caring for their vulnerable newborn. Therefore, staff education and training to recognize and reduce stigma and bias related to SUD is essential. Historically, mothers with SUD have been shamed, blamed, and removed from participating in caring for the newborn. Fear of separation from the infant, loss of custodial rights, and potential punitive outcomes through the justice system create a significant barrier for mothers to self-disclose substance use. Creating safe, non-judgmental, and

non-stigmatized health care settings is a key first step a provider can take to increase early entry into recovery pathways.

The MO NAS Collaborative (The Mothers, Infants and NAS Echo) included efforts to mitigate NAS risk and severity early in prenatal care. Maternal screening for SUD was implemented more broadly through validated verbal screening tools and appropriate, patient-informed biological screening to assess the risk and severity of SUD. Counseling to assess readiness for treatment based on the severity of illness and increasing access and referral to recovery treatment services completes the evidence-based practice of Screening, Brief Intervention, and Referral to Treatment (SBIRT). Addressing the mother's needs in addition to the infant's needs is critical to dyad success. Safe plans of care are a tool to support patient empowerment, identify social support needs and plans, and increase care coordination. Early initiation of safe plans of care prenatally was seen as a key effort to increasing initiation and sustainment of recovery treatment, thereby, serving to improve health and social outcomes for the mother-baby dyad.

Study

Methods

The MO NAS Collaborative was designed to build on a previous QI initiative completed at a single-facility site in Missouri to implement the ESC Model. Fourteen hospitals with birthing and nursery units voluntarily participated in the QI collaborative from January 2021 through December 2022. Participating centers ranged from rural to urban and level 1 nurseries to level 4 nurseries; in total, there were: three Level 1, four Level 2,[4] one Level 3, and six Level 4 nurseries. Eight centers were urban and six were rural, with twelve acute and two critical access hospitals. Birth volumes were stratified as follows: less than 500 births per year,[2] 501 to 999 births per year,[4] 1,000 to 2,499 births per year,[3] and greater than 2,500 births per year.[5] Dyads were identified using ICD-10-CM codes, linking the diagnoses NAS, Drug withdrawal syndrome in a newborn, or a newborn-affected by maternal use of opiates. Readmissions were excluded, as were iatrogenic drug withdrawal and other conditions which might prolong LOS such as major congenital anomalies, genetic syndromes, or surgical diagnoses.

The project's Specific Measurable Achievable Relevant Time-based (SMART) goals were:

1. Increase the rate of non-pharmacologic interventions as the first-line NAS/NOWS treatment to 85% by December 2022.
2. Increase the rate of maternal patients receiving the Screening, Brief Intervention, and Referral to Treatment (SBIRT) process to 75% by December 2022.
3. Train 90% of facility-identified maternal-child staff on stigma/implicit bias reduction by December 2022.

The collaborative identified eight evidence-based tasks for centers to implement by project completion.

1. Develop a non-pharmacological policy for the care of the substance-exposed newborn.
2. Establish a policy and protocol for the pharmacological treatment of the NAS infant.
3. Provide stigma reduction and trauma-informed care training for 100% of providers and staff caring for mothers and infants affected by NAS.
4. Provide training and education on standardized screening tools to 100% of providers and staff embers providing care to obstetrical patients.
5. Establish guidelines for when to transfer infants with NAS to a higher level of care.
6. Establish a safe plan of care for the NAS infant.
7. Establish a safe plan of care the mother.
8. Provide education to the mother and other caregivers regarding the infant's risk for developmental delays and the importance of routine preventative care.

During the initial phase (January 2021 through July 2021), team formation, baseline data collection, and foundational education were completed. Critical to each center's success was creating a multidisciplinary team

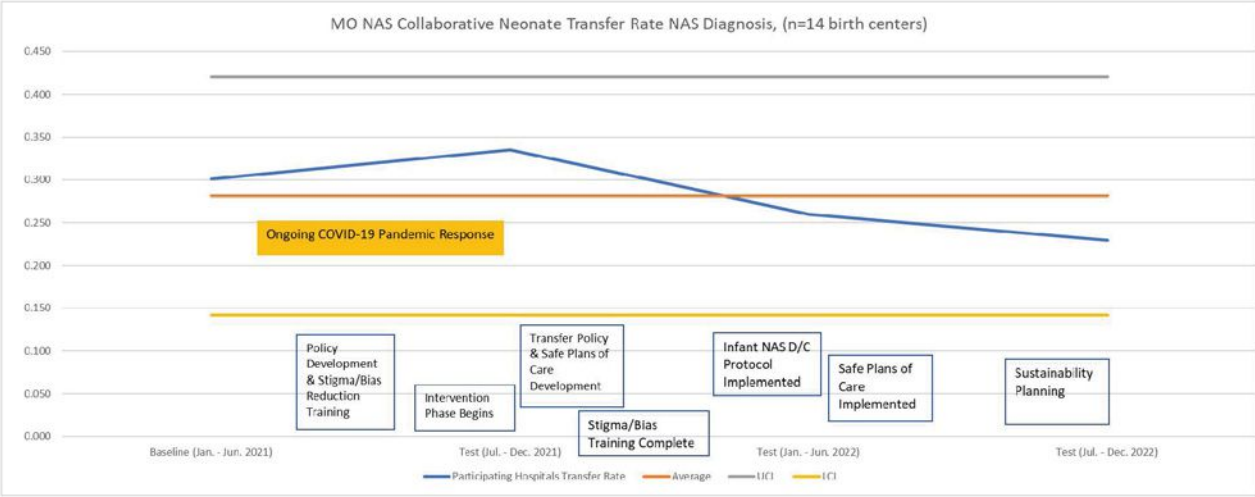
Table 1. Patient Demographics

Participating Hospitals Births and NAS births Jan 1, 2021 to December 31, 2022			
Gender	**Total Births**	**Total NAS Diagnosis**	**Rate**
Female	29,818	264	0.89%
Male	31,740	322	1.01%
Grand Total	61,558	586	0.95%
Race/Ethnicity	**Total Births**	**Total NAS Diagnosis**	**Rate**
NH Black	11,250	133	1.18%
NH White	36,395	361	0.99%
Other	13,913	92	0.66%
Grand Total	61,558	586	0.95%
Discharge Disposition	**Total Births**	**Total NAS Diagnosis**	**Rate**
Expired	175	0	0.00%
Home	58,680	499	0.85%
Transfer	2,623	85	3.24%
Grand Total	61,478	584	0.95%
Calendar Years	**Total Births**	**Total NAS Diagnosis**	**Rate**
2021	30,998	315	1.02%
2022	30,560	271	0.89%
Grand Total	61,558	586	0.95%

Table 2. Results

Outcome	Pre-Intervention Rate	Post-intervention Rate	% Change
Transfer Rate of Infant with NAS	30.1%	22.9%	-23.9%
Infant rates of non-pharmacologic treatment	84.1%	99.1%	+17.9%
Infant rates of pharmacologic Treatment	30.8%	26.8%	-13.1%
Maternal screening rates during prenatal care	66.9%	99%	+47.9%
Maternal screening rates during birth admission	57.5%	96.2%	+67.3%
Infants receiving a safe care plan	71.2%	97.4%	+36.8%
Mothers receiving a safe care plan	37%	90.5%	+144.4%

Diagram 1. MO NAS collaborative Neonate Transfer Rate



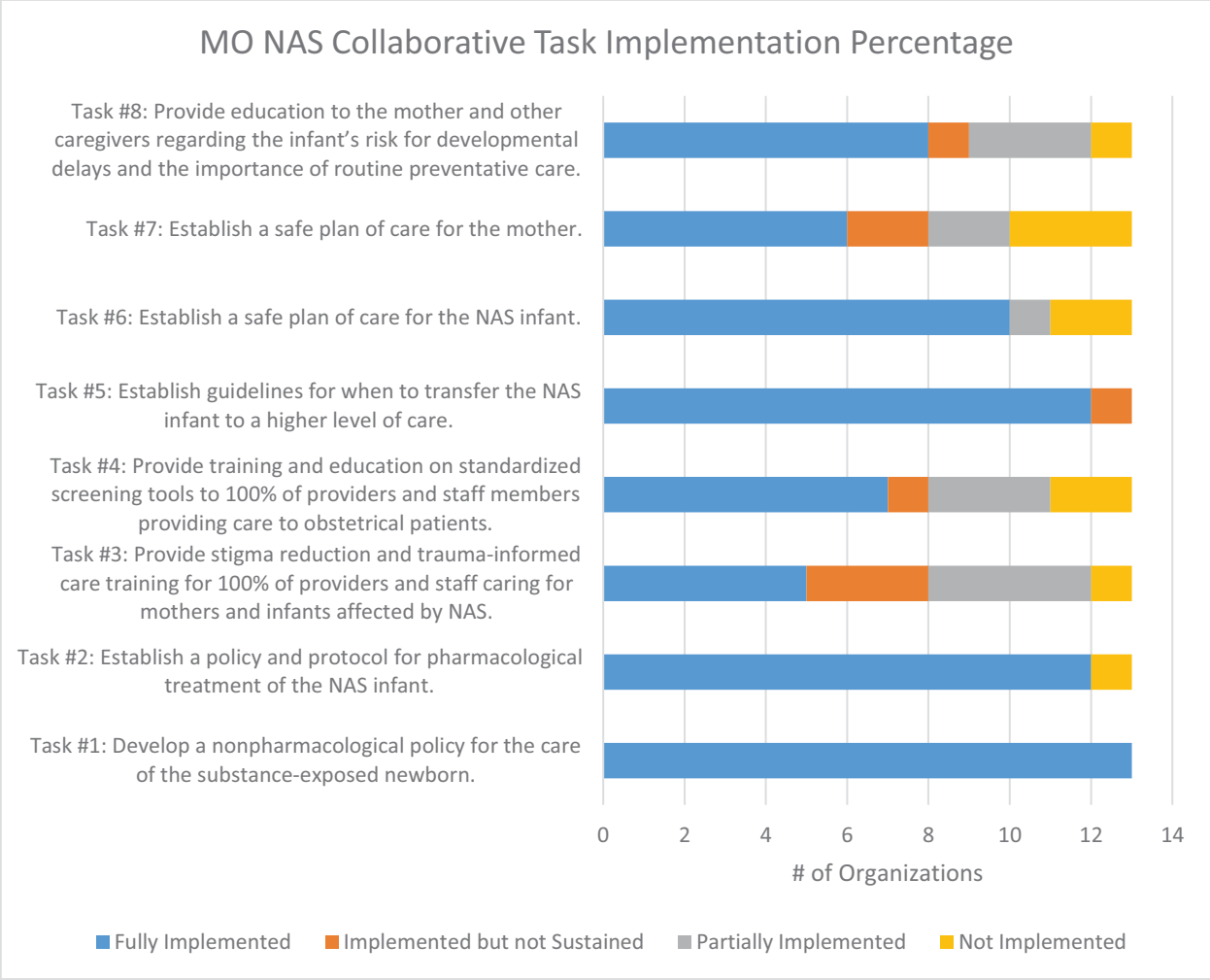
to support engagement and ensure the ability to sustain implementation efforts. Centers then also completed a Strengths, Weaknesses, Opportunities, Threats (SWOT) analysis to help guide their QI efforts. Participants received a project workbook, access to a web-based data portal, process improvement science tools, and access to staff and subject matter experts. Sites were further supported through quarterly individual coaching calls by an MHA staff member. In phase two (August 2021 through October 2022), intensive technical support and education were delivered, and facility-based teams started the gradual implementation of the ESC model and collaborative's project tasks. In October 2022, teams evolved into the sustainability phase, where they identified remaining actions, refined processes to achieve highly reliable processes, and streamlined reporting to essential data metrics. Teams submitted final progress reports highlighting their achievements and recapping their efforts to share with local teams and leadership in December 2022.

Centers participated in bi-monthly ECHO calls where they received didactic and case-based education and the opportunity for questions and discussion by a diverse group of stakeholders in Missouri. The ECHO hub team is multidisciplinary, with representatives from neonatology, general pediatrics, nursing, social work, MHA, and Missouri Children's Division (MOCD). A virtual kick-off meeting was held in November 2020, with bi-monthly office hours and ECHO meetings continuing throughout the timeline to support knowledge acquisition, identify ongoing barriers and resource needs, and review project-level data. Examples of education topics covered in the ECHO during year one of the collaborative: Introduction and Implementation of Eat, Sleep, Console, Resource Mapping, Social Worker Bundle with MOCD, Maternal Screening Tools, Intrapartum and Postpartum Pain Management for Women with OUD, Addiction as a Disease, Toxicology Testing, Substance Use Disorder in Fouth Trimester, and Safe Administration of Morphine on the Mother-Baby Unit.

Analysis

Participating organizations submitted data collected prospectively through a web-based, secure online platform, Life QI. In addition, hospital discharge data was collected and analyzed using SQL and control charts were created to identify trends. A quarterly data review was completed with each participating center to ensure reporting accuracy. Aggregate data for all 14 sites was included in the final analysis to determine the achievement of the identified project goals. Inpatient discharge data were stratified by sex and race.

Diagram 2. Missouri NAS Collaborative Implementation percentages by task [16]



Results

Study Population Demographics are shown in Table 1. Table 2 illustrates the percent change in the measured outcomes after the quality collaborative intervention with all outcomes demonstrating improvement. Most significantly, the infant transfer rate declined by nearly 25%, and the maternal SBIRT rates increased to 99%.

Diagram 1 demonstrates a run chart of the percent transfer rates of infants with NAS with aggregated six-month data.

Diagram 2 reflects the implementation status of each as reported by the individual organizations.[16] Thirteen of 14 organizations provided data on the task implementation. Each organization could report a task as a) either fully implemented; b) implemented but not sustained; c) partially implemented; or d) not implemented. Twelve out of 13 reporting centers implemented Task #1. Most organizations identified the implementation of each task at some level of sustainability. More than 50% of participating centers had achieved full implementation, either sustained or working toward sustainment of the process.

Role and Impact of the Mothers, Infants and NAS ECHO

Partnering with the Missouri Telehealth Network's Mothers, Infants and NAS ECHO was critical to ensuring robust education was delivered to participants in a multidisciplinary environment. Over the timeframe of the collaborative, more than 300 unique participants joined the ECHO calls. Self-efficacy ratings across six questions increased by an average of 2.48 points from a low of 4 to a high of 7.9 out of 10 in 2022.[17]

Discussion

This was a unique opportunity to pilot a partnership between the MHA Association and the Missouri Telehealth Network's ECHO organization. The ECHO team brought a panel of multidisciplinary healthcare professionals from around the state with expertise in the latest evidence-based medicine practices in addiction medicine, neonatal abstinence, obstetric care, mental health counseling, and stakeholders from the state child welfare services. While the ECHO team had operated in Missouri for two years and had some established hospital-based relationships, the collaborative further built trust and engagement to support ESC implementation. This partnership leveraged the benefits and strengths of all to synergistically effect change in the care and management of maternal-infant dyads across the state of Missouri. Most importantly, this successful pilot collaboration proved the feasibility and efficacy of such efforts. Collaborations such as this represent fertile ground for future QI efforts, opportunities to reduce redundancy of work, improve communication, standardize care, and reduce costs.

From a QI collaborative perspective, considerable improvements were realized. All participating centers implemented the non-pharmacological bundle of care -- the cornerstone of treatment for infants with NAS the dyad-centric care model of ESC. The institutional commitment to rooming-in by these participating centers provides a cascade of other beneficial effects, such as empowering the parent to care for their child and demonstrate parental skills and competency to the health care team. To implement ESC, hospitals had to allow rooming-in, implement the ESC interventions, and no longer default to transferring all substance-exposed babies to tertiary referral centers. This practice change led to an overall reduction in transfers of babies to higher level of care facilities, keeping more mother-baby dyads together. The opportunity for health care providers to see the impact of this practice change can alter their own views producing a culture change in the unit and ultimately reducing stigma associated with SUD. The success of one dyad helps inform health care providers and thus promotes the success of another dyad. Just caring for one dyad in a community mother-baby unit can educate a multitude of health care providers, including nurses, social workers, and physicians, leading to effects on the wider community as a whole. Participating centers identified their multidisciplinary teams and individual organizations' support of the project as critical to successful practice change.

The MO NAS Collaborative focused on dyad-centric care and acknowledges that "babies do best with mothers, and mothers do best with their babies." Inherent in this statement is valuing the mother as much as the baby, recognizing that their outcomes are inextricably linked. Historically the care and outcomes of substance-exposed infants have been wholly separated from the mother's care. Individual outcomes are proxies for dyad-centric outcomes. An example of this is task #7, "Establishing a safe plan of care for the mother." Making sure the mother is safe and has social, economic, and emotional support helps ensure the baby is safe.

There were some significant limitations of these QI efforts. Only 14 of 61 birthing centers in the state of Missouri participated. Participation was voluntary but limited by the effects of COVID. Many units were seriously understaffed or fiscally compromised and could not afford the staff or time to participate in such a collaborative.

Other weaknesses or barriers to implementation included: lack of local treatment resources; lack of staff or infrastructure for proper data collection and tracking capability; lack of time to educate staff and implement new practices, policy changes, and electronic health records modifications; facility space restrictions to support longer-term rooming-in needs; and unit-to-unit/transfer collaboration. Participants across the cohort continued to find difficulty in locating substance use and behavioral health resources that serve perinatal populations. The collaborative identified a wealth of social and community-based resource programs that could be referred to for patient support; however, knowledge and coordination of these resources were found to be an ongoing need in most communities. Finally, access to inpatient and residential treatment options that are affordable, reimbursable by public insurance, and include childcare options are extremely limited in Missouri. Regional quality collasboratives are essential to promote shared learning, address unique geographic issues, and spread and scale knowledge and evidence-based practice quickly, efficiently, and effectively to achieve a larger-scale change of state-based outcomes.

Conclusion

Substance Use Disorder and Neonatal Abstinence Syndrome are significant sources of maternal and infant morbidity and mortality in Missouri. The collaboration between the Missouri Hospital Association and the Missouri Telehealth Network's Mothers, Infants and NAS ECHO improved the care and safety of this high-risk dyad across 14 birth centers and can be used as a model for other QI initiatives across the state of Missouri.

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Institutional Experience with Investigation and Service for Acute and Post-Traumatic Stress in the Pediatric Intensive Care Unit

by Jason Werner, MD, Sydney Bell, BA, Lauren Draper, MD, Fletcher Hoague, MS, Melinda Owens, RN, Vithya Murugan, PhD & Terri Weaver, PhD

The issues of acute and post-traumatic stress and of burnout in critical care staff present a significant challenge in the modern healthcare landscape.



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Abstract

Acute stress, post-traumatic stress and burnout are all stress-related mental health problems common to patients, families, physicians, nurses, and allied health professionals across disciplines. They are particularly common in those who care for critically ill and injured children. Despite growing awareness of the pervasiveness of burnout and stress among healthcare workers and families in the pediatric intensive care unit, there remain important gaps in the knowledge of factors affecting the development of stress-related mental illnesses, how individual and institutional factors protect or exacerbate these problems, and effective measures to limit or mitigate them. Challenges exist in developing and maintaining institutional engagement with essentially non-revenue generating activities that require additional staff. For academic institutions, significant opportunities exist for cross-departmental collaboration. We describe our five-year experience developing a multidisciplinary group investigating these problems and providing interventions to professionals and families in the pediatric intensive care unit.

Introduction

In 2016, the leadership of the American Association of Critical Care Nurses, the American Thoracic Society, the American College of Chest Physicians and the Society of Critical Care Medicine published a consensus statement recognizing the prevalence of burnout in critical care health professionals.[1] This statement focused on the deleterious effects of acute stress, post-traumatic stress, and burnout. Effects referenced included reduced job longevity and increased turnover, worse quality of patient care, alcohol and substance abuse, post-traumatic stress disorder (PTSD), and suicide. Billed as a call to action, this statement identified essential roles for critical care professionals, unit leaders, hospital administrators, policy makers, patient advocacy groups and others in reversing a decades-long trend towards increasing burnout in healthcare workers of all disciplines working in critical care environments. In the intervening period—and particularly as a result of challenges arising from the COVID-19 pandemic—awareness of stress-related mental health problems in healthcare professionals has become more widespread and "self-care" has become a $10 billion industry.[2] However, institutions

and professionals continue to struggle to identify and implement strategies to mitigate or ameliorate these problems.

These problems of stress-related mental illness are prevalent in pediatric critical care units as well as in adult hospitals, across the spectrum of training, and in different healthcare professions.[3] Burnout is common in resident physicians, though programs have developed innovative ways to monitor and ameliorate this.[45] Pediatric critical care medicine fellows demonstrate significant degrees of burnout as early as the first program year.[6] Pediatric critical care physicians self-report high rates of burnout and post-traumatic stress that is only partially relieved by personal resilience characteristics, though innovative staffing solutions can help.[37]

Further, it is known that these stress-related mental health problems extend to patients and their families as well. Parents of patients admitted to PICUs frequently develop acute stress and PTSD and do so regardless of their children's objectively-measured disease severity.[8,9,10,11,12] Importantly, some techniques for giving parents improved perceptions of control or understanding of their child's illness and involvement with their care can help.[13,14] Older pediatric patients are also at risk of developing acute and post-traumatic stress themselves, and this can have important effects on their willingness to participate in their own care after discharge.[15,16,17]

Although much is known about the consequences of burnout, much remains to be learned. Do individuals with problem-focused coping mechanisms handle stress better than those who tend to employ avoidant mechanisms by perhaps maintaining a "therapeutic distance"? How can parent bonding with infant patients be promoted without compromising safety? What organizational factors tend to exacerbate or alleviate the risk for burnout? Can changes to PICU policies or workflows help to mitigate the development of parental stress? Are efforts to promote wellness among critical care professionals effective? What is the role of compassion fatigue in the development of burnout?

These problems are hardly news to the critical care community, having been described decades ago.[18] At our institution, a palliative care team had long been able to provide helpful listening and a consistent positive presence for many but not all parents of patients in the PICU. A "Care for the Caregiver" team mostly relied on trained peers or near-peers to provide informal encouragement and support for staff who had been participants in particularly difficult patient events. Increased institutional support for units and staff experiencing stressful situations was somewhat limited and episodic. Although several investigators across the wider university community had programs researching issues of acute and post-traumatic stress or burnout, none were organic to the PICU.

Program Development

Starting in 2018, we conceived of a working group that would be focused on conducting research on the nature of stress-related mental illness in the PICU while simultaneously working to provide additional supportive services to families and to staff working in the PICU. Leadership and overall direction would be provided by a pediatric critical care physician and a palliative care physician. Daily operations would be conducted by a masters-level mental health professional with a background in either psychology or social work. Additional assistance and input would be provided by nurses and nurse practitioners. Expertise and support for scholarship would be provided by university faculty in psychology and social work. Program goals would be along two major paths: first, to study the nature of stress-related mental health problems in the PICU among healthcare workers of all professional backgrounds, and second, to provide daily support to staff and families in the PICU experiencing heightened degrees of stress.

As a key part of effective change management, we conducted several months of discussions with many stakeholders. PICU staff and patient family members were generally very supportive and provided good feedback in terms of practical elements regarding project implementation. Physician and nursing leadership as well as hospital administration were also supportive and helped to outline necessary administrative structures and reporting lines, identified needed resources like office space, and helped with human resources processes. A research colloquium featured input from multiple investigators at our institutions describing ongoing projects in the area of stress-related mental illness as well as challenges and limitations for future work.

The most challenging and persistent question was, predictably, one of funding. US government sponsored funding for programs of this kind studying provider mental health is limited, as are opportunities through the State of Missouri. In 2019, we applied for

grant funding through a local charitable organization with the priority of achieving early small measurable successes to begin to demonstrate at least proof-of-concept for future funding cycles and grant-making organizations. We were able to hire a program specialist with expertise both in the conduct of high-quality mental health research and with working with individuals experiencing mental health crises. With this key addition, we were able to move into the initial phases of standing up our service.

Investigations

The initial phase of investigation focused on establishing a baseline description of the mental health environment in our PICU. A large survey was developed that included demographic information, individual time in their current role, caregiving responsibilities outside of work, educational debt and other similar factors. We further included narrative questions about individuals' experiences with having participated in recent patient deaths. Additionally, the questionnaire included previously validated mental health instruments including the Professional Fulfillment Index (PFI)(XX), a measure of workplace stress (ProQOL), the PTSD checklist from the DSM-IV, scales identifying depression and anxiety, the Connor-Davidson resilience scale (CD-RISC), a measure of individuals' coping strategies (Brief-COPE), and a survey of alcohol use (AUDIT). This survey was distributed to all healthcare workers who spent a majority of their workday in the PICU. Respondents included 44 RNs, 19 RRTs, seven faculty physicians, five nurse practitioners, and 16 other individuals in various roles.

Eighty-three surveys were completed with sufficient data for analysis. We initially sought to characterize some elements of the mental health of the PICU staff.[19] There was considerable overlap in the 21 (25%) individuals reporting significant degrees of anxiety and of depression. Consequently, these mental health problems were considered as a single group of "internalizing disorders" (ID). Individuals in the ID group reported less compassion satisfaction (defined as positive feelings resulting from doing good things for others) (51.39 [SD=9.5] vs 46.36 [SD=11.0] p=0.047) and a greater degree of burnout (48.55 [SD=9.83] vs 54.21 [SD=10.04] p=0.026) than the non-ID group. All seven subjects that screened positive for PTSD were from the ID group. Initial analysis of this data was done focusing on data obtained from RNs.

We also sought to characterize some elements of staff experience with patient deaths as a particularly stressful event.[20] The 44 RN respondents represented 54% of all PICU RNs. Respondents averaged 29-years old, were all female, and 35 out of 41 (85%) reported having cared for a patient that died. The survey asked respondents to characterize their most impactful experience with patient death as broadly "good" or "bad"—the specifics of which were left up to the individual respondent's interpretation. Twenty-four out of 35 (69%) described the experience as more "bad" than "good." Fifty-four percent of deaths had a perceived discrepancy between whether the family and the medical team had each anticipated the patient's death, but this did not appear to have an affect on how respondents characterized the deaths. A difference was identified in the frequency of formal debriefings after patient death, with deaths characterized as being "bad" having been debriefed more often than those characterized as "good."

This information informed several additional rounds of investigation. Collaboration with faculty in the Department of Psychology has allowed our team to undertake a more detailed analysis of the interaction between provider factors, stressor-related factors and secondary traumatic stress in our initial dataset. Additionally, the narrative questions in the initial dataset have raised a number of questions. Among these questions were how individual perceptions of team function affects perceived workload and stress, which features of a particular patient or family interaction are felt to be the primary source of stress for bedside nurses and which interactions tend to linger with them emotionally, how individual nurses tend to process these persistent feelings after stressful patient events and others. This collaboration with investigators skilled in qualitative research techniques have allowed us to begin conducting a qualitative study of these questions using structured interviews of PICU RNs. We anticipate completion of this in mid-2024.

Additional work examining the effects of measures to promote PICU staff engagement and patient "re-personalization" is also in progress. Our existing data suggests that compassion satisfaction—the good feelings one gets from doing good for or taking care of others—is associated with lower rates of burnout. Given that an important dimension of burnout is a feeling of distance or detachment from one's job, we intend to explore how efforts to emphasize the individual identity of PICU patients affect staff perceptions of engagement and compassion satisfaction.

Interventions

In addition to scientific investigation, a key function of our group has been to provide support to families and staff in the PICU. This service has taken several different forms. Perhaps the most visible and simple is the presence of a helpful listener familiar with the PICU environment. The presence of an individual not tasked with making decisions regarding their child's management nor with providing moment-to-moment bedside care, but rather exclusively with providing helpful listening to family members who may be experiencing significant anxiety, confusion, and distress has been largely successful. Family members report identifying the Program Specialist as an important part of their experience in the PICU and have expressed gratitude for the availability of an empathetic ear. The Program Specialist has also helped to act as a conduit for communication between families and PICU medical teams when, despite the use of family-centered rounds, important questions or points of uncertainty remain. The Program Specialist has also helped with scheduling family conferences when important issues involving multiple specialty services, significant disclosures, or major decisions arise. Over the course of this program, the Specialist has also been part of the development of literature for families helping to explain the PICU environment as well as transitions back and forth between the PICU and our hospital's stepdown unit.

Service to the PICU staff has also been an important component of this project. Another key function has been regularizing of debriefings for PICU staff. Although "hot" debriefings still occur after every patient death, arrest, or similar critical event, these tend to be focused on practical process-oriented factors. We have been able to schedule "cold" debriefs on an ongoing basis where staff can share their feelings in a supportive group setting. Having the Program Specialist available to moderate these debriefing discussions has been well-received by staff as helping to create a helpful environment where processing complicated emotional responses to traumatic events is facilitated.

Additionally, financial support allowed us to make physical improvements to the work environment in the PICU. With the assistance of nursing and hospital leadership, we were able to identify an office space within the PICU that was duplicating activities elsewhere on the same floor. This space was repurposed into a decompression room for PICU staff. We equipped this space with a commercial-grade massage chair and a white noise generator to provide some isolation from the rest of the PICU environment to allow time for quiet reflection. We included some light weights and aerobic exercise equipment to allow staff to benefit from the salutary effects of physical activity. Nursing staff and others on hourly schedules are able to use this space during normally-scheduled meal breaks. This space has been warmly received and is in use nearly every shift. Importantly, we were able to set aside a small reserve fund to permit maintenance of this equipment in the future when normal wear inevitably takes its toll.

Evolution

In early 2023, external funding for this project was not renewed. This precipitated an interim assessment of changes in the hospital landscape to evaluate what new needs and opportunities were available. Since the initiation of our program, staffing resources for the palliative care team have been substantially expanded, permitting involvement with a much broader range of patients and families in the PICU. The hospital's peer support program has additionally greatly increased its capacity and ongoing activities throughout the institution. Debriefing opportunities and Schwartz Rounds—during which healthcare team members can discuss emotional issues arising from caring for patients and their families—have become a regular part of the monthly schedule. The decompression space within the PICU has been duplicated elsewhere within the building to make similar facilities available to staff on the general inpatient floors. These expanded resources have, to a large extent, obviated the need for an independent team operating exclusively within the PICU. Additional personnel and expertise have allowed our program to integrate with activities now occurring throughout the wider institution and bring the benefits of experience gained in the critical care environment to the rest of the hospital.

Since initiating this program, we have learned several lessons about standing up a program of this kind. A specialist such as the one in our program needs to be familiar with the critical care environment as well as posses expertise in mental health research. Providing support to families in crisis situations raises non-trivial potential for additional problems

like secondary traumatic stress on the part of the specialist. Individuals unfamiliar with critically ill and injured children may have more difficulty integrating with the PICU team. The family support role of the program specialist is still somewhat novel and unfamiliar to many individuals. Including this role in any welcome literature for families and having a clear introduction describing the role is important. Misinterpreting the role as a nurse or consulting physician can lead to additional confusion and frustration. Although efforts to destigmatize problems of mental health are pervasive throughout society, there may still be resistance to asking and answering these questions within certain teams. Careful and consistent messaging regarding the role and mission of a team such as ours is essential for effective change management. Establishing buy-in at all levels of leadership while maintaining clear expectations about extent and limits of commitment is key to program success.

Conclusion

The issues of acute and post-traumatic stress and of burnout in critical care staff present a significant challenge in the modern healthcare landscape. While much is known about these problems, much remains to be fully described. Additionally, the nature and consequences of the anxiety and stress of having a child in the PICU is becoming increasingly understood as a driver of in-hospital and post-PICU experience for patients' families, as well as having far-reaching effects on patients' long-term health and recovery. Like many other institutions around the country, we have begun to make an attempt to make these problems a priority in our PICU in terms of scholarship, care for families and care for ourselves.

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Improving Access to Autism Evaluation: A Coordinated Developmental-Behavioral Pediatrics and Pediatric Neurology Diagnostic Pathway

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This project demonstrated the desired outcome of shortened wait times for a subset of children and their families.



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Abstract

A shortage of board-certified developmental-behavioral pediatricians generates a bottleneck for children and families who seek autism diagnostic services. Wait time for autism evaluation commonly exceeds a year. To improve access, clinicians developed a coordinated Developmental-Behavioral Pediatrics and Pediatric Neurology autism diagnostic pathway. For a subset of children referred to neurology clinic, pediatric neurologists completed the medical part of an autism evaluation and Knights of Columbus Developmental Center psychologists or speech-language pathologists completed developmental assessments. Forty-four autism diagnostic evaluations completed through this coordinated pathway over the course of six months had shortened wait time [mean=50.89 days; range 3 to 184 days; median= 48.50 day]. Parents reported satisfaction with the autism evaluation and resources navigation process. Sustainability and scalability efforts are discussed.

Introduction

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental disorder characterized by persistent deficits and differences in social communication and interaction as well as restricted repetitive behaviors and/or interests.[1] According to 2020 data, the estimate of ASD prevalence in the United States is one in every 36 children.[2] The demand for autism evaluations far outpaces diagnostic capacity.[3,4] Children and families experience a bottleneck for access to autism diagnostic services because waitlists commonly exceed a year.[5]

To increase diagnostic capacity and accessibility, the Missouri Department of Mental Health's Autism Spectrum Disorder (ASD) established Waitlist Reduction and Training Services agreement contracts with Missouri Autism Center flagship sites in 2008, including an Autism Diagnostic Center at the Knights of Columbus Developmental Center (KOC), SSM Health Cardinal Glennon Children's Hospital (CGCH), and Saint Louis University School of Medicine.[6] Despite best efforts from state legislators and healthcare

providers, Missouri's Autism Centers Consortium continues to report thousands of children on waitlists and delays in autism evaluations. As of April 2023, 1,568 children from Missouri and 1,500 children from Illinois awaited an evaluation at Knights of Columbus Autism Center.

Why the Wait?

Shortage of qualified diagnosticians is the main factor contributing to the long wait time.[7] Access to autism specific interventions and supports is often contingent on having the diagnosis confirmed by a qualified diagnostician. When autism risk is identified, primary care providers often refer patients for developmental evaluation and clarification of diagnosis to developmental-behavioral pediatricians.[8,9] As of 2023, just nine developmental pediatricians are practicing in the state of Missouri (one per 153,840 children).[10]

Why Lengthy Evaluations?

Autism evaluations are often conducted by developmental-behavioral pediatricians within interprofessional teams that include speech-language pathologists, occupational therapists, psychologists, social workers, and family resource specialists (see Missouri Autism Guidelines Initiative).[11] Typically, an evaluation involves two to four hours of direct contact with the patient and caregiver, to include comprehensive interviews with caregivers, direct behavioral observations of reciprocal social interactions, play and communication, and one or more autism-specific measures, such as the 'gold standard' Autism Diagnostic Observation Schedule-2 (ADOS-2).[12,13] Team members often spend additional three to four hours (conservative estimate) for results review, scoring, interpretation, report writing, and team conferences. In indeterminate cases, follow-up visits and re-evaluations are necessary before a final diagnostic conclusion is reached.

How Do We Engage Qualified Professionals?

The autism field needs strong leadership to engage qualified professionals to address the waitlist crisis. Accordingly, the American Academy of Pediatrics published guidelines recommending a tiered evaluation approach to include community-based assessments for children who have a few complex behavioral characteristics and/or less ambiguous behavioral features of the disorder.[14] One such program, known as Project Extension for Community Healthcare Outcomes (Project ECHO), examined a model of training community-based primary care providers.[15] The model focused on screening and diagnosis of young children at highest risk. In a pilot study, primary care physicians reported improved self-efficacy for assessment and identification of autism.[15]

A recent review of physician training programs was completed to determine whether adding diagnostic pathways using primary care physicians reduced wait times and improved access.[5] Results indicated that training programs varied in terms of recommended practices; however, most training programs reported a high level of diagnostic reliability and/or reduction in wait times.[16,17,18,19]

Project Aim

The aim of this Quality Improvement project was to increase autism diagnostic capacity and accessibility at CGCH. The authors proposed to involve pediatric neurologists in autism evaluations as qualified diagnosticians and eliminate duplication of medical evaluations by developmental-behavioral pediatricians for patients followed at the pediatric neurology clinic. Authors met to coordinate components of autism evaluation and ongoing care. The coordinated pathway capitalized on overlap in training, expertise and scope of practice between developmental-behavioral pediatricians and pediatric neurologists.

For a subset of children referred to outpatient neurology clinic, pediatric neurology physicians provided medical care, and referred children to the KOC Autism Center for autism-related developmental and behavioral evaluation and resources navigation support. To avoid duplication of services by related subspecialties, developmental-behavioral physicians did not complete medical re-evaluation (Figure 1).

Methods

Workgroup

This project took place in a children's hospital associated with an academic institution. Clinicians organized a virtual workgroup and met monthly to 1) outline triage, eligibility, and procedures; 2) determine quality indicators; 3) coordinate autism services for

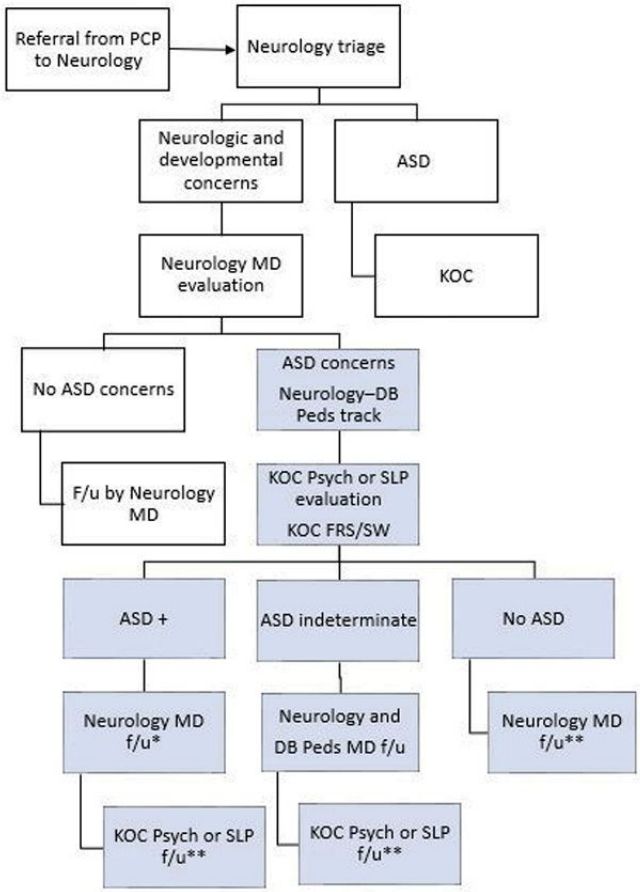


Figure 1. Developmental-Behavioral Pediatrics and Pediatric Neurology autism diagnostic pathway

KEY: ASD (Autism Spectrum Disorder), DB Peds (Developmental-Behavioral Pediatrics), f/u (follow-up), FRS/SW (Family Resource Specialist/Social Worker), KOC (Knights of Columbus Developmental Center), PCP (Primary Care Provider), Psych (Psychology); SLP (Speech-Language Pathology)
**Neurology MD providing formal diagnosis confirmation and statement if patient was seen by KOC SLP*
***DB Peds MD and Neurology MD co-manage for diagnosis clarification, behavioral meds, etc., as needed*

children and family on the pathway; 4) troubleshoot emerged and potential problems; and 5) discuss scalability efforts.

Coordinated Pathway

For children with substantial autism risk referred to the outpatient neurology clinic: 1) the pediatric neurologist completed medical evaluation and referred the patient to the Autism Center; 2) the speech-language pathologist or psychologist at the Autism Center completed developmental behavioral evaluation and documented results in the electronic medical record; 3) the family resource specialist contacted families for resources and navigation support; and 4) the pediatric neurologist finalized diagnostic conclusion, assessment for interventions and provided ongoing medical care. In indeterminant cases, the developmental-behavioral pediatrician joined the diagnostic process.

The authors completed QI metrics for children referred to the developmental-behavioral pediatrics and pediatric neurology coordinated diagnostic pathway over a six-month period (2/09/2023 to 8/09/2023). QI metrics were selected based on the Missouri Autism Centers Consortium consensus and expert opinion.[5,6,11] Authors interviewed parent(s) or legal guardian(s) one- to -four months after the autism evaluation. (Table 1).

Study Results

Children referred to the autism diagnostic pathway over a six-month period were examined (n=44). Mean child age at the time of the autism evaluation was 43.98 months (range 14 to 109 months; median= 40.50 months). Relative to standard wait time approximating 12 months, the mean number of days between pediatric neurology referral and the autism evaluation decreased to 50.89 days (range 3 to 184 days; median= 48.50 days). Comprehensive autism evaluations were documented in 98% of cases reviewed (43 out of 44 cases; one child with history of traumatic brain injury was referred to pediatric neuropsychology for cognitive testing).

Parents were contacted one to four months after the autism evaluation (n=33; mean=76.61 days; range 29 to 123 days; median= 83.00 days). As measured on a scale of 1–very dissatisfied to 5–highly satisfied, parents reported a high mean level of satisfaction for: A) autism evaluation (n=31; mean=4.81; range 2 to 5; median= 5.00); and B) resource navigation support (n=27; mean=4.96, range 4 to 5; median= 5.00). Parents of 11 patients were not available by phone or in-person and were lost to follow-up. One parent was dissatisfied with her child's autism evaluation and requested a second opinion evaluation by a developmental-behavioral pediatrician.

Table 1. Quality Improvement (QI) Metrics: Sources and Methods of Review

Quality Metrics	Sources	Methods
Access	Electronic medical record	Wait time calculated as number of days between Neurology referral to autism testing (diagnosis)
Quality of autism evaluation	Electronic medical record review: • Medical examination (Pediatric Neurology) • Autism-specific testing (Speech-Language Pathology or Psychology) • Phone logs, email contacts, and other service notes (Family Resource Specialty)	Review of records included documentation of: • Medical (autism risk) examination • Cognitive/developmental function • Adaptive function • Socio-emotional/behavioral function (direct observation required) • Sensory and motor function • Family function • Child developmental history • Resource navigation
Family satisfaction	Phone contact or Face-to-face interview	Parent completed satisfaction ratings: 1 (very dissatisfied) to 5 (highly satisfied) • Autism evaluation process • Resource navigation process
Access to intervention	Electronic medical record Phone contact or Face-to-face interview	Parent reported child behavioral intervention(s) after autism evaluation: • State-supported Early intervention • Early Childhood Special Education preschool (ECSE) • Speech-Language • Occupational • Physical • Applied Behavioral Analysis • Other

Parents reported mixed results about access to recommended therapeutic interventions, e.g., enrollment into an early childhood special education preschool, applied behavioral analysis, physical, speech-language, and /or occupational therapy. One to four months after the autism evaluation, 85% (28 of 33 patients) were receiving at least one intervention, while 52% (17 of 33 patients) were still waiting for at least one intervention.

Discussion

QI metrics indicate that relative to standard practice, the coordinated pathway improved autism diagnostic capacity and accessibility, shortened wait time and was favorably rated by parents for satisfaction. The coordinated pathway was unique because pediatric neurology physicians required no extra training. Further, speech-language pathologists and psychologists had the training, experience, and expertise to complete comprehensive autism-related evaluations. Family resource specialists had the necessary training, experience, and expertise to support families after the diagnosis. Three patients were referred for second opinion assessment by a developmental-behavioral pediatrician: one per parent request and two per recommendation from the evaluating speech-language pathologist.

Benefits of Early Behavioral Intervention

An illustration of the coordinated pathway advantage includes a mother of a 26-month-old toddler reporting that her child received an autism diagnosis about 90 days after primary care identified autism risk and initiated early intervention about 30 days after completing the autism diagnostic evaluation. This mother reported high satisfaction with autism evaluation and resources navigation support.

These QI results are important because waitlist delays result in missed opportunities for timely access to early behavioral intervention and related services. Numerous studies have demonstrated the benefits of early behavioral interventions for improved child and family function. In this QI study, the child's mean age at the time of the autism evaluation was 44 months. Further efforts should be directed at more effective triage to identify children with the greatest risk and target children under three years of age. See Zwaigenbaum et al. 2015 review of early autism behavioral interventions.[20] In San Diego County, experts implemented innovative approaches to improve screening, evaluation, and treatment referral practices for very young children and families affected by autism.[21] Results indicated that toddlers were diagnosed about three years earlier compared to the most recent Centers for Disease Control and Prevention report. Earlier diagnoses also led to their enrollment in treatment programs at three years of age. To support earlier diagnoses and subsequent treatment, Vanderbilt Kennedy Center experts have moved to offer diagnostic consultation and trainings to pediatric medical providers to service children with autism risk under age three.[22]

Sustainability and Scalability Efforts

The pediatric neurology team has designated two physicians to sustain the coordinated developmental-behavioral pediatric and pediatric neurology diagnostic pathway. For follow up care, some patients may transition care to advanced practice nurses with specialized medical training in autism, and psychotropic medication management when needed.

To expand, a developmental-behavioral medical fellow has partnered with psychology and Fostering Healthy Children program (a medical home for children in the foster care system) team members to identify and service children with heightened risk for a variety of developmental behavioral problems, including autism. CGCH Autism Center is considering collaboration with psychology and neuropsychology, and other university programs.

Further, primary care pediatricians within the CGCH healthcare system have received specialized autism training through Project ECHO.[15] To improve access to autism screening and evaluation services, several primary care pediatricians have implemented a tiered autism pathway to identify children with the greatest risk. The tiered pathway is based on Missouri Best Practice Guidelines for Screening, Diagnosis, and Assessment.[11]

Limitations

This QI project was limited by a small sample size and did not gather sensitive parent or child demographics information. Although the quality and scope of the pathway's evaluation was consistent with standard practice, this project did not directly compare the diagnostic accuracy and/or reliability of the new pathway with the developmental-behavioral pediatrics assessment team results.

This project did not measure participants' access to autism diagnostic services in relationship to medical insurance type, scheduling, or preview paperwork demands, as well as transportation needs and/or travel distance to the autism evaluation site. Further, this project did not examine the potential impact of social-economical and/or racial disparities on autism diagnostic evaluations and services.[23]

In closing, this project demonstrated the desired outcome of shortened wait times for a subset of children and their families. We will continue efforts to sustain and expand this model and build innovative care models. We are committed to recruiting and training professionals who can complete high quality autism diagnostic evaluations within the Autism Center and in coordination with other clinicians in primary care and related subspecialties.

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Hemophilia Gene Therapy: Another Blessing or Another Curse?

by John Puetz, MD

While gene therapy offers the blessing of a cure, the reality is that gene therapy is not yet curative. The need for factor replacement is reduced, but not eliminated.



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Abstract

Medical therapies for hemophilia patients over the past 60 years have included several blessings and a curse. The long-sought cure with gene therapy may have finally arrived. Unfortunately, preclinical animal models are now raising concerns for genotoxicity with gene therapy. Although no cancers have been detected in humans, it may be a few decades before we know if gene therapy for hemophilia is another blessing, or another curse.

Introduction

Hemophilia A and B are bleeding disorders in which patients have abnormal bleeding from trivial causes. Hemophilia is caused by a deficiency of coagulation factor VIII (hemophilia A) or IX (hemophilia B). Traditionally thought to have X-linked recessive inheritance, more recent studies have shown that up to half of affected females either meet criteria for having hemophilia or report abnormal bleeding.[1] Until about 60 years ago, treatment for hemophilia was limited. Recurrent joint, soft tissue, and major organ bleeding lead to crippling arthropathies and early death. The development of factor replacement therapies in the 1960s and 1970s was a blessing. This allowed patients to treat bleeding episodes in the home and undergo elective surgeries.[2] Unfortunately, a curse soon followed. Factor concentrates in the 1970s and 1980s were made from unscreened, unmanipulated, donated plasma. This resulted in HIV and/or hepatitis C infections in most hemophilia patients and decimated the communities.[2] At this time, development of new therapies for hemophilia diverged into two paths: refinement of factor replacement and gene therapy (Figure 1). Over the past five to 10 years, revolutionary advances have occurred in both paths, culminating in regulatory approval of gene therapy for both hemophilia A and B. Unfortunately, data has emerged which makes it unclear if gene therapy for hemophilia is another blessing or another curse.

Hemophilia Standard of Care

The first refinement of factor replacement was the development of recombinant factor products. This eliminated the risk of transmission of HIV, hepatitis C, and other infectious agents.[2] Widespread availability of safe, effective treatments allowed physicians to not only treat bleeds, but to also prevent bleeds (prophylaxis).[3] By infusing factor VIII three to four times

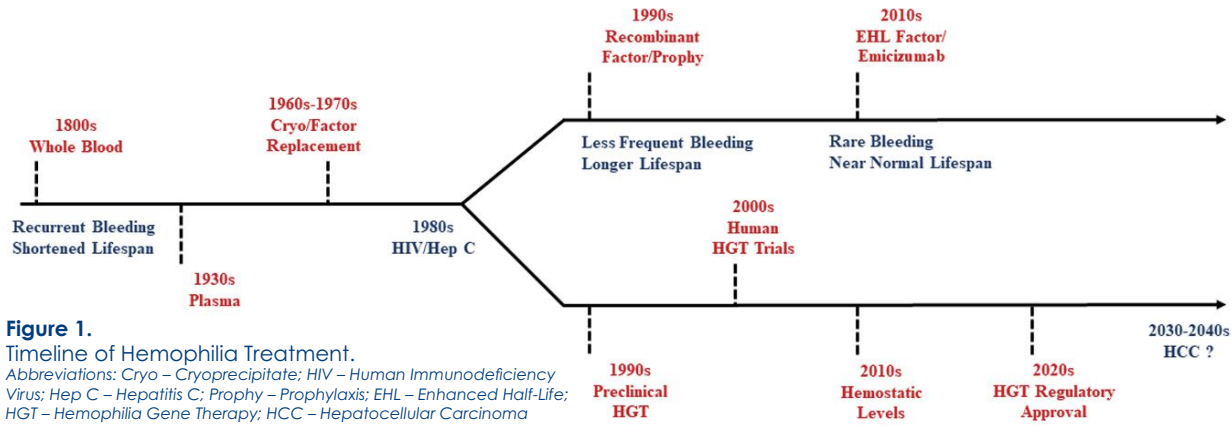


Figure 1.
Timeline of Hemophilia Treatment.
Abbreviations: Cryo – Cryoprecipitate; HIV – Human Immunodeficiency Virus; Hep C – Hepatitis C; Prophy – Prophylaxis; EHL – Enhanced Half-Life; HGT – Hemophilia Gene Therapy; HCC – Hepatocellular Carcinoma

weekly or factor IX two to three times weekly, joint bleeding was reduced, and lifespans increased. Because coagulation factors are proteins, they must be given with intravenous infusions. This is problematic for young children. To facilitate infusions, patients often had indwelling lines placed, resulting in infectious and thrombotic complications.[4] In addition, the burden of frequent factor administration was significant. The second refinement in factor replacement was the development of extended half-life factor products.[5] By fusing factor VIII or factor IX proteins with proteins that have long circulating half-lives (albumin or immunoglobulin) or via pegylation, pharmaceutical companies were able to manufacturer factor concentrates that extended the circulating half-life of factor VIII by 1.5-fold and factor IX by four to six fold.[5] This reduced the burden of treatment for hemophilia A by perhaps one infusion a week. However, the burden of treatment for hemophilia B was dramatically reduced. Many hemophilia B patients now infuse an extended half-life factor product once a week or less. More recently, a truly extended half-life medication for hemophilia A has been developed that also allows for once weekly factor replacement.[6] The third and most revolutionary refinement in hemophilia care was the development of a bispecific antibody (Emicizumab) that binds to both factor IX and factor X.[5] Emicizumab mimics the function of factor VIII and can be given subcutaneously as infrequently as once a month. Rather than receiving 150-200 IV infusions per year, people with hemophilia A can now receive as few as 12 subcutaneous injections per year, and with fewer breakthrough bleeds. This is a remarkable blessing. Thus, with the current standard of care, hemophilia patients have a dramatic reduction in bleeding complications by infusing/injecting medication every one to four weeks. The life expectancy of hemophilia patients is approaching normal.[7]

The Blessing of Gene Therapy

Despite current advances with refined factor replacement, the ultimate goal is to normalize factor levels and never take medication again. This can be achieved with gene therapy. The blessing of gene therapy is a one-time treatment that normalizes factor levels for the remainder of the patient's life. Ideally, this would be given to a neonate or even prenatally. Even if first generation gene therapy is not curative, a reduced burden of medication administration and "bleed free" mindset would still be beneficial.[8] Because of the high cost of standard of care, the proposed $3.5 million price for hemophilia gene therapy would result in overall cost savings if factor levels were sustained for the remainder of the patient's life, or even a decade.[9]

Blessing Not Achieved

The results of phase 3 gene therapy trials for hemophilia A and B resulted in hemostatic factor levels for both hemophilia A and B.[10,11] Unfortunately, there was wide variation in peak factor activity levels achieved. Some patients did not respond at all, while some patients achieved supratherapeutic levels. There were significant differences in the duration of expression and toxicity reported between the hemophilia A and hemophilia B trials.

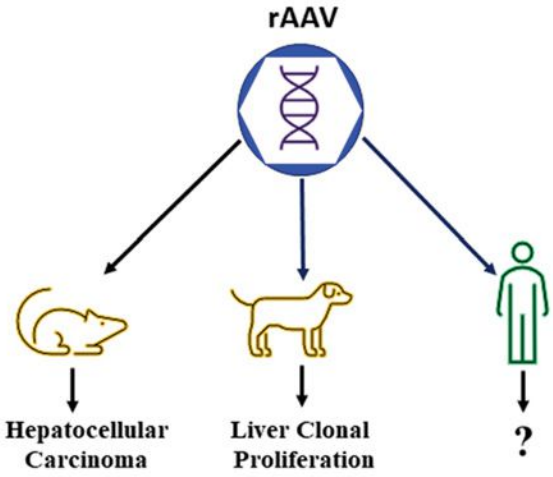


Figure 2. Genotoxicity following rAAV Gene Therapy.

For hemophilia B, subjects achieved a median factor IX activity level of 36 IU/dL (normal 60-150) by six months.[10] The levels dropped minimally after 18 months to 34 IU/dL. Based on this, it has been estimated that the majority (not all) will maintain factor IX levels above baseline for 25 years. The need for factor replacement was drastically reduced, but not eliminated. The annualized bleeding rate was the same as that reported for extended half-life factor IX trials.[12] The principal toxicity was a mild elevation in liver transaminases (hepatitis) present in 20% of subjects. This was controlled with a short course (median 11 weeks) of steroids.

For hemophilia A, subjects achieved a median factor VIII activity level of ~55 IU/dL (normal 60-150) at six months.[11] However, expression was not sustained. By two years, the median factor activity had dropped to 11 IU/dL, and by five years it dropped to 6 IU/dL. Withing two years, five subjects had already returned to prophylactic infusions. The need for factor replacement was reduced. The annualized bleeding rate was slightly lower than that reported for Emicizumab and higher than that reported for the most recently approved extended half-life factor VIII medication.[12] Again, hepatitis was the principal toxicity reported. However, it was more common and recalcitrant to treatment compared to the hemophilia B phase 3 trial. Nearly 90% of hemophilia A subjects developed hepatitis and 20% received immunosuppression beyond steroids. Hemophilia A subjects were on immunosuppression for a mean of 35 weeks.

Could Gene Therapy be a Curse?

The vector used for most hemophilia gene therapy trials and approved by regulatory authorities is the adeno-associated virus (AAV). This vector was chosen because the wild type AAV is non-pathogenic. In addition, it exists in the nucleus as an episome and rarely integrates into the genome.[13] Or so it was thought. Emergent data has shown that wild type AAV may contribute to human hepatocellular carcinoma (HCC) in adults and acute hepatitis of unknown origin in children.[12] Even though integrations are rare (0.1%-3%), dosing patients with 10^{15} genetically modified AAV particles (recombinant AAV- rAAV) targeting 10^{11} hepatocytes will result in hundreds of millions of integrations per treatment.[12] Given that there are three X 10^9 base pairs per hepatocyte, rAAV integrations are unlikely to cause harm if they integrate randomly. Unfortunately, they do not integrate randomly.

Investigations of rAAV as a gene therapy vector started 40 years ago and were initially done in animal models.[14] One early success was to treat a mouse model of mucopolysaccharidosis VII.[15] Neonatal mice were successfully treated with a rAAV vector, but some mice also developed HCC. The rAAV vector did not integrate randomly but targeted a particular locus (RIAN). HCC did not occur in adult mice using rAAV as a vector. The combination of a neonatal mouse/rAAV, and the RIAN locus were necessary for HCC to develop.[15] For this reason, rAAV was felt to be safe to use in other animal models and humans. Recent data has emerged that now calls this notion into question.

One difference between neonatal mice and adult mice is proliferating hepatocytes. Two lines of investigation have now demonstrated that HCC can develop in adult mouse models of proliferating hepatocytes following gene therapy.[16,17] In both, fatty liver disease caused by a high fat diet was used to cause proliferating hepatocytes. One model used rAAV gene therapy (not hemophilia).[16] The other expressed factor VIII in a non-AAV gene therapy strategy.[17] Thus, rAAV can no longer be considered non-pathogenic as it contributes to HCC in mouse models (not to mention human hepatitis as noted in the phase 3 trials above).

HCC induced by rAAV has not been seen to date in larger animal models and human trials of gene therapy. However, rAAV gene therapy for canine hemophilia has demonstrated clonal proliferation of

hepatocytes (Figure 2).[18] Detailed analysis showed rAAV integrations occurred near multiple oncogenes. Frank carcinoma was not seen, however, only a small number of dogs (<15) were studied, none of which had fatty liver disease.[18] If rAAV induces HCC in a small percentage of hemophilia dogs, it could easily be missed by current investigations.

It should be emphasized that rAAV caused HCC has not been seen with human rAAV gene therapy to date. One subject in a hemophilia gene therapy trial did develop HCC. This subject had a prior history of hepatitis B and C.[19] A detailed investigation ruled out rAAV as a contributing factor. The longest follow-up for hemophilia rAAV gene therapy has only been for a little over 10 years, and only in a small number of subjects. If the latency for HCC using rAAV is like other virally induced human HCC, then we should not expect to see reports of HCC for another decade or two.

It is also notable that fatalities and life-threating complications in gene therapy for other diseases using rAAV have been reported.[20] The published phase 3 hemophilia gene therapy trials were not powered to detect rare serious or rare life-threatening complications. The possibility of unexpected, life-threatening, or even fatal complications following rAAV gene therapy must be considered in any risk/benefit analysis.

Conclusion

A recent review of the last 50 years of hemophilia treatment highlighted the tremendous successes seen with the current standard of care.[5] Based on this, new treatments are tasked with "flawless safety."[5] The known toxicity seen during clinical trials for gene therapy does not seem to meet that standard. While gene therapy offers the blessing of a cure, the reality is that gene therapy is not yet curative. The need for factor replacement is reduced, but not eliminated. The annualized bleeding rate with gene therapy is at best marginally better than standard of care. Investigators are hopeful that complications seen with other AAV gene therapy do not become prevalent in hemophilia patients. They are also hopeful that preclinical animal studies do not translate into human disease. If they do, that hope will become despair, and another curse on the hemophilia community.

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Prader-Willi Syndrome: The More We Know, the Less We Know

by Barbara Y. Whitman, PhD

Prader-Willi syndrome is a complex, genetically driven, neurodevelopmental disorder with multisystem impact and a unique behavior profile that evolves over the life span.



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Abstract

Prader-Willi syndrome (PWS) is a complex genetic neurodevelopmental disorder with multisystem impact and a unique behavior profile that evolves over the life span. Beyond the primary care needs of all children and adults, the unique medical concerns and management needs of those with PWS are best served in a multidisciplinary academic center. Our PWS center has provided care for individuals with PWS and their families since 1981. Our growth hormone studies contributed to growth hormone supplementation becoming standard of care in this country. Here, in collaboration with the primary care provider, early childhood intervention programs, schools and local parent organizations, solid, patient-centered care for affected individuals and their families can be provided across the life-span. The purpose of this article is to provide a brief overview of PWS and the attendant medical and behavior management challenges attendant to the disorder.

Introduction

Prader-Willi syndrome, first described in 1956 by Prader, Labhart and Willi, is characterized by lifelong, unremitting hyperphagia with accompanying endocrine disorders, cognitive deficits, sensory abnormalities, and behavior difficulties.[1] Unlike other hyperphagic syndromes in which hyperphagia is present from birth and usually remits by adolescence,[2] the late onset, escalating severity and lifelong nature of hyperphagia in PWS is unique—and remains the cardinal syndrome symptom. Seven decades of research has yielded a delineation of the complex underlying genetics, a broadened knowledge of the phenotypic spectrum, and a greater understanding of the accompanying syndrome-related medical issues, yet the pathophysiology driving the hyperphagia and resulting obesity remains unspecified.[3] Thus, hyperphagia remains a central, often dramatic management focus for affected individuals. To date, treatment/management remains externally restricted food access with caloric reduction; and, when poorly managed, can result in life-threatening obesity and obesity related complications.[4]

Medical texts describe PWS as primarily hypothalamic/pituitary in origin.[5] However, separate from the hyperphagia, a well described range of intractable

behaviors, neurocognitive deficits, and neuroimaging underscores that PWS reflects a distributed central nervous system dysfunction that has yet to be fully described, resulting in a characteristic behavior profile including an increased risk for behavior disorders and psychiatric problems. From this broadened perspective, the centrally driven hyperphagia and accompanying food-related behavioral constellation, albeit dramatic, is just one aspect of the neurobehavioral profile attendant to this disorder; and, when appropriately addressed, is perhaps the easiest of the syndrome abnormalities to manage.[6]

At the same time, PWS remains one of the most difficult disorders for affected individuals and their families to manage. Compounding this difficulty, many families report that medical professionals, school personnel, and other service providers frequently are hurtfully judgmental, implying that both the hyperphagia and the difficult syndromic behaviors are the result of poor parenting.[7,8] To understand the complex management challenges presented by PWS, we turn first to the epidemiology and genetics of the disorder, followed by a review of the food-related behavior constellation, an overview of the unique behavior concerns, and finally a review of the multiple medical challenges.

Epidemiology, Genetics and Early Diagnosis

Prader-Willi syndrome is the most common syndromic cause of obesity with prevalence estimates between 1:10,000 to 1:30,000 yielding 350,000 to 400,000 affected individuals worldwide. Males and females are equally affected.

Credited as the first identified human disorder evidencing genomic imprinting, PWS results from a failed expression of paternally active genes on chromosome #15q11.2q13 either due to deletions on the paternal chromosome, a maternal disomy, or an imprinting center defect. Most cases occur sporadically.[9] Among those with a deletion, there are two recognized "typical deletions" based on size. The larger 15q11-q13 Type 1 deletion is approximately 6 Mb in size involving a proximal breakpoint (BP1) while the Type II deletion is slightly smaller and involves a separate proximal breakpoint (BP2). The region between BP1 and BP2 contains four non-imprinted protein coding genes involved in brain development that are missing in those with a Type I deletion but preserved in those with a Type II deletion and may account for the wide variability of phenotypic expression among those with a deletion.[10]

Those with a uniparental disomy (UPD) have two copies of the maternal chromosome #15 and a complete absence of a paternal chromosome. While both genetic mechanisms result in the "core" genotype, there are some mild phenotypic differences. Higher body mass index, scoliosis, and more severe behavior problems are described in those with a deletion. Those with maternal disomy generally have less distinct physical features and milder behavior problems than those with a deletion but are more likely to exhibit autistic behaviors and are more at risk for psychosis.[2]

Most infants with PWS present with severe to profound hypotonia resulting in a poor suck, poor feeding, and a weak cry following a pregnancy characterized by reduced fetal activity, small-for-gestational age, frequently polyhydramnios, breech positioning, and either early or late delivery. Genital hypoplasia and other phenotypic features may be present at birth or develop soon after. As a result of increased awareness, most youngsters are now identified in infancy and are provided with specialized feeding techniques and enrolled in early childhood special education programs. Most youngsters with PWS will have delayed acquisition of motor and language skills coupled with evolving cognitive deficits.

Management of PWS requires a multidisciplinary team to follow the triple trajectories of the hyperphagia and food-related behavior constellation, separately and concurrently the syndrome-related behavior/developmental trajectory, and finally the related medical concerns. We turn first to the evolution of the hyperphagia and the accompanying food related behavior constellation.[7]

Feeding, Eating, and the Evolution of Hyperphagia, and the Food-Related Behavior Constellation

As the early hypotonia improves, sometime between the ages of 18-24 months, weight gain is evident and occurs prior to an increase in food or caloric intake, or an increased interest in food. An increased appetite typically emerges between two to five years of age, progressing to marked hyperphagia by approximately eight years of age.

Physiologically, the hyperphagia is thought to be primarily associated with hypothalamic dysfunction involving both the hunger/satiety circuitry and the

main hypothalamic/pituitary axis. Seven distinct nutritional phases have been identified, with five main phases and sub-phases in phases 1 and 2 (Table 1).[11]

As the affected youngster evolves into nutritional phases 2b and 3, the accompanying food-related behavior constellation becomes evident (Table 2).[6] A number of pharmacologic treatments for hyperphagia and obesity are under investigation; to date the results are highly variable, inconclusive and frequently are coupled with sub-optimal side-effect and safety profiles (see medical issues). Currently, treatment/management of the hyperphagia remains restricted food access including physical barriers (locks) with close supervision and caloric reduction. While many families can achieve a food secure environment at home, the many other environments of life (school, church, neighborhood) often present insurmountable challenges.

Developmental and Behavioral Trajectory

Beyond the common genetic abnormality, those with PWS are not a homogenous group. Individuals demonstrate a range of personality traits, talents, and interests. At the same time, PWS is associated with an evolving pattern of challenging traits and behaviors that is consistent across those affected but differs in severity between individuals and in a single individual across time. Among those with PWS, studies document an increased rate of behavior disturbances compared with: 1) typically developing individuals; 2) those with other genetic syndromes; 3) those with a similar level of cognitive impairment; and 4) those with a similar level of obesity.

Infants and toddlers are typically described as cheerful, compliant, and cooperative. By adolescence, affected individuals are characterized as cognitively and behaviorally inflexible, ritualistic, subject to sudden and intense emotional and behavioral dysregulation with frequent sensory/self-injurious acting out. Studies document a broad behavior phenotype (Table 3) with some genetic subtype differences. Hoarding and over expressions of frustration, anger, and aggression are more common among those with a deletion, while autistic spectrum behaviors and frank psychoses are more common among those with UPD.

There are few empirical studies of effective behavior management for this population and a concomitant lack of empirically based interventions; nonetheless, collected clinical experience provides guidelines for behavior management.[6]

The use of behavior management medications has become extensive across the age span,[13,14] however it must be noted that there are no randomized controlled trials to guide the use of these medications. Further, the limited empirical evidence available suggests an extremely idiosyncratic response to psychotropic medications with both unrecognized toxicity and frank ineffectiveness common. Use of these medications should be based on clinical judgement and on the individual's symptoms such as aggression or psychoses.

Trajectory of Medical Issues

As noted, hyperphagia is primarily attributed to hypothalamic dysfunction involving both the hunger/satiety circuitry and the main hypothalamic/pituitary axis. Additional hypothalamic/pituitary manifestations include temperature instability, high pain threshold, an aberrant sleep/wake cycle, and associated endocrine abnormalities including growth and sex hormone deficiency, hypogonadism, and frequently hypothyroidism, central adrenal insufficiency and premature adrenarche.

The early literature frequently suggested that aside from hyperphagia and the resulting obesity-related complications, individuals with PWS were unusually healthy. Such conclusions may have resulted, in part, from an abnormal temperature response to routine illness coupled with an abnormal sensory awareness of pain and discomfort. Clinical research coupled with data from multiple national registries yields a range of commonly encountered medical issues (Table 4). While it is beyond the scope of this publication to detail treatment options (an age anchored medical checklist for managing PWS can be found in Duis et al., 2019),[18] two areas deserve attention here: 1) growth hormone replacement therapy; and 2) pharmacologic and surgical approaches to hyperphagia.

Recombinant growth hormone treatment (GHT) remains the most extensively studied and only FDA approved intervention for PWS. Randomized trials document that GHT improves linear growth, body composition, bone density, physical function, and motor development.[15,16] GHT for children with PWS should be initiated at the time of diagnosis after adequate nutrition and family stability is ensured, usually between three to four months of age. In adults, continuing or initiating GHT provides benefits to body composition, physical performance, and quality of life. In general, GHT is safe, however, should not

Table 1. Nutritional Phases of PWS (adapted from Miller et al, 2011)

Phase 0 – in utero	• Decreased fetal movements • Growth restriction compared to unaffected siblings
Phase 1 (birth)	• Hypotonic non-obese infant
Phase 1a (birth to 15 months)	• Difficulty feeding • Failure to thrive may be present
Phase 1b (5-15 months)	• Weight increases at normal rate for individual growth curve
Phase 2 (range 2-4.5 years)	• Weight gain
Phase 2a	• Weight gain without increase in caloric intake of interest in food
Phase 2b	• Weight gain and increased interest in food
Phase 3 (5-13 years)	• Lifelong hyperphagia, food seeking, a feeling of persistent hunger coupled with a decreased sensation of satiety
Phase 4	• In some individuals there may be some blunting of hyperphagia and a new ability to feel full

Table 2. Overview of Food related behavior constellation associated with PWS

Behavior Category	Observed Behavior
Hyperphagia	• Extreme and constant (over) eating exceeding that needed for nutrition. • Can lead to choking episodes due to decreased chewing and to stuffing food when caught eating "illegally"
Food seeking, foraging, sneaking, hiding and hoarding	• Sneaking food at home, school or workshop. • Stealing food in grocery or convenience stores. • Hoarding food and hiding in room. • Asking others to give them their food. • Taking from others' food trays at school. • Foraging leftovers from food plates, trays, and garbage cans. • Looking for food in others' desks, lockers, purses, backpacks.
Preoccupation with food	• Constant need to know when the next food will be available • Detailed food-oriented questions: what that food might be, serving size, how will it be cooked • An assurance that the food information provided is certain • Hypervigilance for food via collection of restaurant advertisements, newspaper and magazine pictures and recipes, and other visual reminders of food
Maladaptive and sometimes illicit/illegal behavior directed at obtaining food	• Lying, such as untruthfully telling school personnel that the family failed to provide breakfast or lunch • Shoplifting • Surreptitiously "borrowing" money from parental wallets for later food purchase • Purchasing food via the Internet
Eating unusual food items	• Sticks of butter • Saved "used" grease • Eating garbage • Eating frozen food • Pet food • Decaying or rotten food • Food-flavored items such as shampoos

Table 3. Broad Behavior Phenotype

Behavior Category	Observed Behaviors
Cognition and executive functioning	• Wide variability of intellectual functioning; most function in the mild to moderate range of intellectual disability. • Independent of IQ score, an overlay of learning disabilities, processing deficits and executive function deficits lead most to function in the mildly impaired range. • Executive function deficits: concrete thinking; difficulty planning, organizing and learning from experience; impulsive, acts before thinking; attention deficits.
Cognitive and behavioral inflexibility	• Insistence on sameness • Oppositional, stubborn, uncooperative and often openly disobedient • Inability to handle even minor daily transitions or changes • Willful, oppositional, argumentative • Difficulty with uncertainty and ambiguity • Decrease tolerance for, and overreactive to, frustration and stress
Social perception, cognitive deficits	• Social immaturity • Egocentric, Inability to see the other's perspective • Insistence on having own way regardless of environment or others affected • Difficulty recognizing emotions in facial expressions • Difficulty recognizing and adhering to ordinary social cues (turn-taking, personal space, appropriate touch) • Difficulty being or perceived as being "wrong" or making a mistake • Deficits in social attribution • Problems detecting and interpreting social information
Ritualistic	• Extraordinary insistence on sameness • Gets upset or distressed over small changes in routine or environment • "Getting stuck", e.g., perseverative speech and routines • Obsession with an idea or activity (or person) • Collecting/hoarding non-food items
Subject to sudden, intense emotional and behavioral dysregulation and aggression	• Cries easily for no apparent reason, or over small upsets • Mood changes rapidly for no apparent reason • Verbal and/or physical aggression or abusive behavior • Impulsivity; acts before thinking about potential consequences • Severe temper tantrums, rages, overt expression of frustration, anger
Sensory/ self-stimulating/self-injurious	• Sensory deficits leading to inability to experience volume induced discomfort when overeating • Under reacts to pain • Lack of appropriate fever response • Abnormal response to ambient temperature - refusal to remove warm clothing even in excessive heat or conversely the refusal to wear warm clothing even in cold weather. • Smells, tastes or licks objects • Skin and rectal picking, gouging other body parts

Table 4. An Overview of Common Medical Issues for those with PWS

Musculo-skeletal issues	• Hypotonia – severe in infancy, lifelong • Abnormal body composition -decreased lean muscle mass at birth and lifelong – improved with growth hormone therapy but never normal • Hip dysplasia • Scoliosis – as high as 80%; Kyphosis • Lower limb misalignments • Gait and balance abnormalities
Gastric issues	• Poor oromotor control • Abnormal gag reflex – decreased ability to vomit • Gastroesophageal reflux and aspiration – particularly in infancy • Constipation • Gastroparesis • Gastric distention and rupture – often following binge eating episode but can be related to delayed gastric emptying without binging
Endocrine issues	• Cryptorchidism • Slowed energy metabolism with reduced caloric needs and decreased interest in physical activities • Growth hormone deficiency resulting in short stature • Premature Adrenarche • Hypogonadism resulting in delayed and incomplete puberty • Central hypothyroid • Central adrenal Insufficiency • Obesity related Type II diabetes
Sleep and breathing Issues	• Abnormal arousal in infants • Central apnea with oxygen desaturation • Obstructive apnea – increased severity with increasing obesity coupled with oxygen desaturation • Abnormal sleep-wake organization with atypical REM cycles • Excessive day time sleepiness
Vision issues	• Strabismus
Dental issues	• Thick, viscous saliva • Enamel hypoplasia • Increased risk of caries • Tooth grinding occasionally severe ultimately requiring dentures
Developmental issues	• Early delays in motor development • Early delays in speech and language development • Cognitive delays and differences coupled with specific learning disabilities • Autistic features
Sensory abnormalities	• Temperature instability • High pain threshold • Skin picking – as high as 90%; rectal picking
Neurological issues	• Seizures – currently estimated to affect 25% • Narcolepsy
Obesity-related co-morbidities	• Type II diabetes • Pulmonary hypertension and Cor Pulmonale • Cardiovascular disease

be administered in the context of severe obesity, untreated severe obstructive sleep apnea, acute respiratory infection or uncontrolled diabetes.[17]

Multiple pharmacologic treatments for hyperphagia and obesity are under investigation including GLP-1 receptor agonists, ghrelin analogs, controlled-release diazoxide, setmelanotide, tesofebsube-metaprolol, and intranasal carbetocin. Previous trials with Phentermine, naltrexone, naltrexone-buprion combination, Orlistat, sibutramine, beloranib, and various serotonin and racepinephrine reuptake inhibitors have been tried.[4] Negative or inconsistent results coupled with intolerable side effect profiles currently disqualify use or fail to meet FDA approval.

Surgical weight loss procedures in this population remain controversial. Limited research suggests that metabolic surgeries such as gastric bypass or vertical sleeve gastrectomy have little use due to a failure to change the (central) hyperphagia thereby resulting in limited to no weight loss. In addition, gastric restriction surgeries such as banding or balloons may increase risk as again, the hyperphagia remains unchanged and restrictive procedures may predispose to gastric distention and necrosis. Further, post-surgical complications are not insignificant. Finally, some question the ethics of such surgery in the context of intellectual disabilities that may limit the capacity to give informed consent and to cooperate with post-surgical care.[3,4,5]

Conclusion

Prader-Willi syndrome is a complex, genetically driven, neurodevelopmental disorder with multisystem impact and a unique behavior profile that evolves over the life span. Beyond the primary care needs of all children and adults, the many medical concerns and unique management needs of those with PWS are best served in an academic-center multidisciplinary clinic where, in collaboration with the primary care provider, early childhood intervention programs, schools, and local parent organizations, and other care providers can provide solid, patient-centered care for affected individuals and their families across the lifespan.

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Meet MSMA's 2024-2025 President

David L. Pohl, MD, FACR
St. Louis, Missouri

David L. Pohl, MD, FACR, a Fellow of the American College of Radiology, will serve as President of the Missouri State Medical Association in 2024-2025. He was formally installed in St. Louis, Missouri, April 6, 2024, during the MSMA's 166th Annual Convention.

Dr. Pohl was born and raised near Osgood, Ohio, the son of Lavern and Rita Pohl. He earned his Bachelor's degree in Anthropology and Archeology from Miami University in Oxford, Ohio (elected to Phi Beta Kappa). He then entered Graduate School in Anthropology, specializing in Physical Anthropology and Genetics, at the University of North Carolina in Chapel Hill, North Carolina.

While on an archeological excavation in France during his studies, he met a Radiologist, Paul Woodrow, MD, who introduced him to the "living" side of human anatomy. Inspired, Dr. Pohl completed his Master's Degree from UNC-CH. Subsequently, he returned to Miami University to fulfill the entrance requirements for medical school, after which he was an Instructor in Anthropology at the Western Ohio campus of Wright State University. He matriculated at the Washington University School of Medicine in St. Louis, Missouri, obtaining his Doctor of Medicine degree in 1985. Next, he entered Residency in Diagnostic Radiology at Saint Louis University Medical Center in St. Louis, Missouri (serving as Chief Resident during his final year), and became Board Certified in Diagnostic Radiology in 1989.

Dr. Pohl entered practice with Central Radiology Group, Ltd., where he practiced until September 2003. At that time, he joined Radiologic Imaging Partners (currently a 16-member group, all of whom are MSMA members) providing radiology services to SSM Health throughout St. Charles County, Missouri.

Dr. Pohl has been a long-time member of both general and specialty-based organized medicine, having been a member of MSMA since 1985, and was inducted as a Fellow of the American College of Radiology in 2010. He has served many roles in organized medicine, including as President of multiple medical organizations: the Greater St. Louis Society of Radiologists (2006-2007), the St. Louis Metropolitan Medical Society (2013), and the Missouri Radiological Society (2018-2019). Additionally, he has been a Missouri Councilor to the American College of Radiology, an Assistant Clinical Professor of Radiology at Saint Louis University School of Medicine, and has also been a member of the Washington University Medical Center Alumni Association Executive Council. His service to the MSMA includes roles as Councilor and Treasurer, and he has served on multiple committees at the hospital, local, and state levels.

His goals for his year as President of the MSMA are to expand and increase the active participation of the membership; preserve and protect the importance of the physician-patient relationship; and help prepare the MSMA as we grow into the future. **MM**



Alliance Installs 2024-2025 President

Donna Corrado, RN
Mexico, Missouri

Without courage, wisdom bears no fruit."
- Baltasar Gracian

Donna Glasford Corrado, RN, Mexico, Missouri, was installed as the 2024-2025 Missouri State Medical Alliance President on April 6, 2024, in St. Louis, during the MSMA's Alliance Centennial Annual Meeting.

Born in Biloxi, Mississippi, and raised in Vandalia, Missouri, Donna graduated Deaconess Hospital School of Nursing in St. Louis. She married Joseph Corrado, MD, in 1976, and moved to New York, where he pursued residency in general and vascular surgery, and she worked on the medical-surgical floor of Albany Medical Center.

An opportunity arose to return to Missouri and fill a surgical gap in Mexico in 1982. With a family of six, Donna began volunteering in the community. She also began as president of the Audrain Medical Society (Auxiliary), chartering bylaws with the help of the MSMA Auxiliary leadership.

Donna continues to assist in her husband's busy practice. When the Audrain Auxiliary dissolved, Donna continued with the MSMA Alliance, contributing time and talents on standing committees or an elected office, culminating in the Presidency from 2006-2007. Attending and participating in the American Medical Alliance through the years and appointed to various committees, Donna has never sought an office at the national level, preferring to stay local, and continuing to help with MSMA and Alliance.

Donna is a recipient of the Sandy Mitchell Alliance Member of the Year award. Also, as the executive producer of "Code Blue" Resuscitating Rural Surgery, a documentary, she traveled the country with her daughter, Meredith, in a motorhome, minding the children, while the film was being shot and edited, and finally released and celebrated in 2014.

Accompanying her husband, the 2018-2019 President of MSMA, she traveled to most local and state meetings with him, carrying membership materials and promoting the Alliance for the state and the AMA.

The last few years have seen Donna working diligently to restore a full-service healthcare facility to her home town of Mexico. Currently, she is on the Healthcare Leadership committee and President of the Board of the Audrain Regional Medical Center.

Presiding as the MSMA Alliance president during its Centennial year (2024-2025) is a joy and a challenge. She wants to encourage the Direct Members (those without a county Alliance) to continue at the state level and contribute to their counties using simple, ready-made projects (like "Stop the Bleed," "Smoking Is NOT for Me,", "Physician Family Day" or "National Doctor's Day") and giving recognition to the county medical societies.

"Cento Anni" a toast to 100 years! **MM**

State of the Association: Presidential Address

by Lancer G. Gates, DO

My fellow physician members of MSMA thank you for your active involvement in MSMA, and for giving me with the privilege of serving as your president. I also thank the MSMA Alliance for supporting the physicians of Missouri. Lastly, I thank the MSMA staff for your service, dedication, and perseverance. MSMA could not function without you.

I compared organized medicine to ballroom dancing in my inaugural speech a year ago. One year later, and many ballroom dance lessons later, I present another metaphor with heavier steps.

Rogue Elephants

In the 1970s, at the Pilanesberg National Park in South Africa, a group of young male elephants in the musth1 (a time during which their testosterone level surges) gored to death several rhinoceros. The park rangers wanted to save the surviving rhinoceros, but they needed to find the reason for the killings and then develop a treatment plan. Gus Van Dyk, an ecologist, knew that typically, a young male elephant's musth ends when he encounters an older and more formidable bull elephant. Unfortunately, poachers slaughtered the elder male elephants for their ivory tusks, leaving the young elephants in perpetuity of musth. Van Dyk and the park rangers treated the problem by transporting six bull elephants from another South African park to mentor the tribe of rogue young bull elephants. Within hours, the killing stopped.

The Elephant Train – Tail to Trunk

MSMA provides free membership to medical students, residents, fellows, and newly practicing physicians. Medical school students have opportunities for scholarships through the Missouri State Medical Foundation. MSMA membership allows medical students, residents, fellows, and newly practicing physicians to network, lead, and advocate while inviting their spouses to join the MSMA Alliance.

Now, I ask you a question first posed by Groucho Marx. "What have future generations ever done for us?" The answer will not surprise most of us. These young elephants in the medical field, the medical students, residents, fellows, and newly practicing physicians, provide MSMA with diverse opinions and fresh perspectives on longstanding issues. Over the years, the medical student section has submitted many resolutions to our House of Delegates, and several of these resolutions are now MSMA policy. Medical students' energy and passion revive our hopes and dreams for the medical profession. They are the future leaders of our herd.

The health and vitality of MSMA depend on the actions of all its members, young and old. MSMA has exercised its physician body by constructively dealing with disagreement and fostering a culture of open dialogue. We deal with contentious issues above, below, and under the umbilicus. In 2022, we addressed the Dobb's decision with an online town hall meeting and a two-day deliberation of the MSMA Council. The leadership came together and crafted a consensus statement. Our deliberate actions solidified the relevance of MSMA and increased our membership.

"When Elephants Fight, it's the Grass that Suffers" - *anonymous*

In the spirit of building MSMA, I share with you that the elephant on our reservation of organized medicine is the intergenerational division among physicians. To paraphrase President Abraham Lincoln, "A house of medicine divided against itself cannot stand."

Medical students roam freely on the MSMA reservation, submitting resolutions, voting on solutions, and serving on committees and the MSMA Council. Recently, the MSMA medical student section proposed various contentious resolutions. The effect of presenting, discussing, and, in a few cases, passing some of these controversial resolutions has cost MSMA a $50,000 endowment and led to the departure of nearly twenty active and valued dues-paying members. These disenfranchised active members have taken with them not just their financial contributions in the form of dues, PAC funds, and endowments but, more critically, their invaluable wisdom. While MSMA loses active members, we also geographically lose many



Dr. Gates with his family at the Annual Convention.

medical student members-most Missouri medical students, including those who draft resolutions, secure residencies in states other than Missouri. According to Student Doctor Net, in the recent 2024 match, only 111 of the 399 students at the University of Missouri at Columbia, St. Louis University, and Washington University matched to residency programs in Missouri. 72% of the graduates from these three medical schools will never experience the potentially beneficial and potentially deleterious effects of many of their resolutions.

MSMA responded to the loss of active members by raising dues for the remaining members. Increased dues price has maintained current member services but has prompted more active members to leave MSMA. Higher dues and fewer active members have become our version of "shrinkflation". If the membership dry season persists, MSMA, its remaining members, and its policies, including any adopted medical student section resolutions, risk extinction.

The Elephants Are Afraid of the Mice

The MSMA medical student section is theoretically a representative democracy that comprises medical students from six medical schools: the University of Missouri Columbia, the University of Missouri Kansas City, Saint Louis University, Washington University, Kansas City University, and my alma mater, Andrew Taylor Still University. Students at each medical school elect their own campus MSMA leadership and two delegates to the annual MSMA convention. These student leaders then assemble and elect statewide officers of the MSMA medical student section.

MSMA respects individuality and diversity of opinion, yet it also accepts the majority's will. Across the country, the voice of the vocal minority has been amplified and largely unchallenged. Presidential candidate Vivek Ramaswamy described the tyranny of the minority as "the new culture of oppression where saying anything deemed oppressive by the minority can get someone punished." This new normal has rejuvenated the silent majority, a block of voters that keep their mouths shut, avoid the wrath of the vocal minority, and only voice their opinion at the original "safe space", the ballot box.

While most medical students are understandably occupied with classroom work and are not actively involved in organized medicine, some medical students want to be involved but are fearful that if they express their opinions, a fellow medical student might shout

them down, cancel them, or worse accuse them of intolerance. An accusation of intolerance could result in classmates' oppression and attract the attention of the medical school officer of diversity, equity, and inclusion. Many medical students have chosen to exercise their right to remain silent rather than risk the possibility of accusation and incrimination of intolerance. This action leaves the leadership of the MSMA medical student section in a difficult position when deciding whether or not to co-sponsor resolutions submitted by student members. How can the MSMA student leadership fulfill its role and responsibility as a representative democracy without knowing the will of the majority because many of its members have chosen to remain silent for fear of oppression by the vocal minority?

Building Our Own Ivory Tower

Many practicing physicians have wandered away from the MSMA watering hole. The health insurance industry has poached physicians' time and energy, requiring prior authorizations, medication formulary substitutions, and peer-to-peer reviews. Physicians struggle to complete these mandates while insurance company executives bask in their ivory towers. Unsurprisingly, student physicians need help finding actively practicing physicians to mentor them.

We, the MSMA physicians, can work together with the MSMA student physicians to:

- Establish a mentoring program platform on the MSMA website, which could include a list of physician volunteers willing to provide shadowing, resolution writing, and preceptor services.
- Encourage all medical students to become actively involved members of MSMA.
- Utilize an electronic de-identified balloting app. that will provide all medical students with a safe space to voice their vote without fear of oppression.
- Foster a culture of inclusion and effective conflict resolution.
- Encourage component societies to be co-authors of all resolutions submitted by medical students.
- Discourage resolutions that are overtly divisive to MSMA membership.
- Encourage resolutions that build MSMA membership; examples include decreasing educational debt, increasing the number of clinical physician preceptors, promoting physician wellness, limiting insurance company mandates, improving tort reform, limiting the expansion of healthcare team members' scope of practice, and increasing the number of residency positions in Missouri.
- Re-engage former active and retired MSMA members.

Charging up the Hill

The older elephants (the practicing and retired physicians) "must" return to the MSMA reservation and share a fresh drink of water with the medical students, residents, fellows, and young physicians. Refresh, connect, and share your knowledge, experience, culture, values, and elephant memory with the future generation of Missouri physicians. Let us seek what unites us as physicians and is best for our patients. Let us respect our inevitable differences in medical, social, and political opinions.

Mentoring is beneficial for both the mentor and the mentee. I remember going deer hunting with my grandfather one November day. It became cold, and I walked back down to the hunting cabin at the foot of the hill. Shortly afterward, I looked out the cabin window and saw my grandfather at the top of the mountain, motioning for me to join him. Thinking he needed help dragging a deer, I ran up the slope excitedly. At the top of the hill and gasping for breath, I asked him where the deer was. He answered, "I did not kill a deer; I just want someone to walk down the hill with me."

It's time for us, the actively practicing physicians and the retired physicians, to ask medical students, residents, fellows, and young physicians to join us on our walk down the hill.

However, before we can walk down the hill together, we must elevate ourselves. Our incoming President, Dr. David Pohl, a 21st-century reincarnation of the Carthaginian General Hannibal, will lead our MSMA elephant charge up and over the mountain.

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1. www.bbcearth.com/news/teenage-elephants-need-a-father-gure **MM**

166th House of Delegates Resolution Actions & Decisions

Below are the resolutions and actions taken at MSMA's 166th (2024) House of Delegates. For more information, email advocacy@msma.org.

Resolution 1 - Bylaws Change - Committees

Action: Amended Resolution Adopted

Resolution 2 - Bylaws Change - AMA Delegation

Action: Amended Resolution Adopted

Resolution 3 - Bylaws Change - Retired Membership Status

Action: Resolution Adopted

Visit MSMA's website at www.msma.org/governance to view the complete updated Bylaws.

Resolution 4 - Cannabis Marketing Guardrails

Action: Amended Resolution Adopted

RESOLVED, that MSMA supports guardrails for marketing cannabis and cannabinoid products to children and pregnant women in Missouri; and be it further

RESOLVED, that MSMA supports the creation of a physician-led state task force within the Missouri Department of Health and Senior Services to review the marketing practices of cannabis and cannabinoid products to children and pregnant women in Missouri.

Resolution 5 - Waiver of Due Process Clauses

Action: Amended Resolution Adopted

RESOLVED, that MSMA advocates that "Waiver of Due Process" clauses must be eliminated from all employment agreements between employed physicians and their non-physician employers, and be declared null and void in physicians' previously-executed employment agreements between physicians and their non-physician employers that currently exist; and be it further

RESOLVED, that this resolution be forwarded to the AMA House of Delegates, to similarly call for federal legislation on this matter.

Resolution 6 - Co-Sponsoring of Resolutions

Action: Referred to Council

RESOLVED, that resolutions brought to the House of Delegates by residents and medical students be cosponsored by an active member or a local component medical society.



MSMA thanks the members of the Reference Committee who provided the final report to the House of Delegates. Front row from left: James Wolfe, MD, Springfield; George Hruza, MD, Chesterfield – Chair; standing from left: Basia Michalski-McNeely, MD, Young Physician Section; George Mansour, MD, St. Louis; and Keith Ratcliff, MD, Washington.



Physicians stand in line to testify on the resolutions during the Reference Committee.

Resolution 7 - Unmatched Graduating Physicians

Action: Referred to Council

RESOLVED, that the AMA works with State societies to support these unmatched graduate physicians through their legislators and regulators to allow these physicians to work in underserved areas, in primary care, only in collaboration with licensed physicians; and be it further

RESOLVED, that the AMA works with appropriate parties and CMS to reimburse for services rendered by these graduating physicians working in their collaborative practices

MSMA House of Delegates Votes on New Policies

The policies below were developed out of resolutions submitted by MSMA members to the House of Delegates.

For the complete list of policies and the year adopted, please visit the MSMA member-only area at msma.org/governance. Log-in is required.

Cannabis Marketing

The MSMA supports guardrails for marketing cannabis and cannabinoid products to children and pregnant women in Missouri. (2024)

Clinical Education

The MSMA encourages the legislature to further incentivize physicians, medical schools, and hospitals to prioritize the clinical education of medical students. (2024)

Due Process Waivers in Employment Contracts

The MSMA opposes the use of Waiver of Due Process provisions in physician employment contracts. (2022; reaffirmed, 2024)

Third Party Intrusion into Practice of Medicine

The MSMA opposes any further political governmental intrusion into the practice of medicine by government regulation or legislative action at the state and/or federal level, particularly in the form of rules and regulations from federal agencies. (1992; updated 2024)

The MSMA opposes any third-party intrusion into the practice of medicine without a compelling and evidence-based benefit to the patient, a substantial public health justification, or both. (2024)

In-Vitro Fertilization

The MSMA opposes any legislation or ballot measures that could criminalize in-vitro fertilization. (2024)

Opioids, Use During Pregnancy

The MSMA supports the expansion of access to evidence-based treatments, such as buprenorphine, for pregnant individuals with opioid use disorder. (2024)

Surgical Smoke

The MSMA recognizes surgical smoke exposure has adverse effects on the health and well-being of all exposed medical staff, and the MSMA supports legislation to decrease surgical smoke exposure routinely and regularly across medical facilities in Missouri. (2024) **MM**

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as does private insurers and States' Medicaid programs; and be it further

RESOLVED, that the AMA allows these graduating physicians, working in collaboration with a licensed physician, to become members of an AMA subgroup.

Resolution 8 - Continued Ozempic Research

Action: Referred to Council

RESOLVED, the MSMA supports evidence-based medicine and the continuation of research for Ozempic and its off label uses, especially in weight loss, and be it further

RESOLVED, the MSMA advises physicians use their discretion and practice caution for new medications which have not yet been approved for weight loss.

Resolution 9 - Treatment of Family Members

Action: Amended Resolution Adopted

RESOLVED, that the Missouri delegation to the AMA House of Delegates submit a resolution that asks the AMA Council on Ethical and Judicial Affairs to review the current Code of Ethics as it relates to treating family members.

Resolution 10 - Cybersecurity Legislation

Action: Resolution Not Adopted

RESOLVED, that MSMA works to enact comprehensive cyber security legislation that incentivizes and protects businesses that have implemented reasonable and standard security measures to safeguard sensitive digital information; and be it further

RESOLVED, that such legislation should define and promote a baseline of cyber security standards, aligning with industry best practices and adapting to evolving technological advancements; and, be it further,

RESOLVED, that such legislation ensures that businesses diligently implementing and regularly updating their cyber security measures should be shielded from disproportionate liability in the event of a cyberincident; and be it further

RESOLVED, that legal frameworks should incorporate provisions that encourage businesses to adopt robust cyber security measures, offering protection from excessive financial and legal consequences when reasonable precautions have been taken.



Charles Van Way, III, MD, accepts the award for 100 continuous years of publishing *Missouri Medicine* with Walsworth from Tina Trudell, Sales Representative.



George Hruza, MD, (left), and Ravi Johar, MD, right, discuss resolutions during the House of Delegates.

Resolution 11 - Protecting the Practice of Medicine from Third Party Interference

Action: Amended Resolution Adopted

RESOLVED, that MSMA amends existing MSMA policy as follows: The MSMA opposes any further political governmental intrusion into the practice of medicine by government regulation or legislative action at the state and/or federal level particularly in the form of rules and regulations from federal agencies; and be it further

RESOLVED, that MSMA opposes any third-party intrusion into the practice of medicine without a compelling and evidence-based benefit to the patient, a substantial public health justification, or both.

Resolution 12 - Diabetes Telehealth Initiatives

Action: Resolution Not Adopted

RESOLVED, that MSMA expands on prior telehealth policy in reference to increased home broadband internet access and support efforts to expand telehealth services to underserved populations in the treatment of type II diabetes mellitus not only through internet coverage but also engaging with device recycling programs and similar nonprofit initiatives to promote preventative healthcare and ease of access for patients; and be it further

RESOLVED, that MSMA encourages healthcare providers who treat type II diabetes mellitus to identify untreated patients or patients lost-to-follow-up and engage in a "dialing for dollars" approach to provide coverage and improve healthcare productivity; and be it further

RESOLVED, that MSMA prioritizes ongoing services such as CoxHealth at Home telemonitoring and promotes new initiatives to encourage healthcare facilities to create or utilize platforms or technological advancements in diabetes care, such as for recording and monitoring blood glucose levels, with a userfriendly interface along with guidance on the utilization of such systems to optimize prompt healthcare delivery with a patient-centered approach.

Resolution 13 - Surgical Smoke

Action: Amended Resolution Adopted

RESOLVED, that MSMA recognizes surgical smoke exposure has adverse effects on the health and wellbeing of all exposed medical staff, and be it further

RESOLVED, that MSMA supports legislation to decrease surgical smoke exposure routinely and regularly across medical facilities in Missouri.

Resolution 14 - Doula Care Coverage and Reimbursement

Action: Resolution Not Adopted

RESOLVED, that MSMA recognizes the benefit of comprehensive care of pregnant and birthing populations including culturally competent community resources like doula care within the existing obstetric care team; and be it further

RESOLVED, that MSMA supports legislation that creates pathways for health insurance coverage for doula services in Missouri, provided that these pathways include a standardized doula certification process as a prerequisite.

Resolution 15 - Supporting Physician Candidates for Public Office

Action: Referred to Council

RESOLVED, that MSMA and American Medical Association (AMA) create "members-only" pages on their websites that list its physician members that are running for state or federal offices (and wish to have that information



MSMA's Medical Student Section at the Annual Convention.

publicly available), with links to how to volunteer or donate to those campaigns; and be it further

RESOLVED, that MSMA and American Medical Association (AMA) encourage other state and specialty societies to publicize their physician members that are running for state or federal offices (and wish to have that information publicly available); and be it further

RESOLVED, that MSMA and American Medical Association (AMA) encourage AMA sections and caucuses to consider establishing a policy or protocol, to allow (by invitation) AMA members running for state or federal offices to briefly address those groups directly, either virtually or in-person; and, be it further, RESOLVED, that the AMA report back on this issue (including an updated list of physician members who ran for state or federal office in 2024 and wish to have that information publicly available) at A-25; and be it further

RESOLVED, that MSMA forward this resolution to the AMA at A-24.

Resolution 16 - Emergency Medical Services Vehicles

Action: Resolution Not Adopted

RESOLVED, that MSMA will submit to the House of Delegates (HOD) of the American Medical Association (AMA), for consideration at the AMA HOD Annual Meeting in Chicago in June of 2024, a proposed resolution that the AMA's Council on Science and Public Health be directed to study the potential feasibility of and GHG impact that could be achieved from transitioning America's current urban EMS vehicle fleet from petroleum power to electrical power, as vehicles currently in service are retired (Directive to Take Action); and be it further

RESOLVED, that the American Medical Association will forward the results of this study by the Council on Science and Public Health to health care journalists, hospital regulators, EMS system leaders, and other relevant parties, toward the eventual implementation of the findings and recommendations that are anticipated to be reached (Directive to Take Action).

Resolution 17 - Promoting Sustainable Practices in Operating Rooms

Action: Resolution Adopted

RESOLVED, that MSMA communicates with the Missouri Hospital Association, encouraging messages to their member hospitals about the importance of more sustainable practices to reduce waste, such as using more reusable instead of disposable equipment in operating rooms (and also including a copy of the AMA Council on Science and Public Health's report on this issue); and be it further

RESOLVED, that MSMA communicates with all physicians, hospitals, and independent surgical centers in Missouri, emphasizing the importance of more sustainable practices to reduce waste, such as using more reusable instead of disposable equipment in operating rooms (and also including a copy of the AMA Council on Science and Public Health's report on this issue); and, be it further, RESOLVED, that MSMA continues to monitor AMA action on climate change.

Resolution 18 - Endometriosis Disparities and Research

Action: Amended Resolution Adopted

RESOLVED, that MSMA encourages DHSS to include endometriosis on its list of chronic conditions.

Resolution 19 - Promoting Physician Wellness

Action: Referred to Council

RESOLVED, that MSMA works with the Missouri Physician Health Program to compile and publish on both of their websites a list of mental health services and substance use disorder treatments available for physicians; and, be it further,

RESOLVED, that MSMA encourages the Missouri Board of Healing Arts to amend their initial medical license application and their medical re-licensing application to:

- include supportive language normalizing physician wellness
- limit mental health questions to current diagnoses that could impair a physician's ability to perform duties
- allow for "safe haven" nonreporting for physicians who are receiving treatment and monitoring in either the Missouri Physicians Health Program or the Physician and Health Professional Wellness Program

- allow for "safe haven" nonreporting for physicians who have successfully completed a treatment program
- encourage nonpunitive 100% confidential mental health care; and be it further

RESOLVED, that MSMA encourages the Missouri Board of Narcotics and Dangerous Drugs (BNDD) to amend their initial physician licensing application and physician re-licensing application to:

- include supportive language normalizing physician wellness
- limit mental health questions to current diagnoses that could impair a physician's ability to perform duties
- allow for "safe haven" nonreporting for physicians who are receiving treatment and monitoring in either the Missouri Physicians Health Program or the Physician and Health Professional Wellness Program
- allow for "safe haven" nonreporting for physicians who have successfully completed a treatment program
- encourage nonpunitive 100% confidential mental health care; and be it further

RESOLVED, that MSMA encourages hospitals in Missouri to amend their initial physician privilege application and their physician reappointment privilege application to:

- include supportive language normalizing physician wellness
- limit mental health questions to current diagnoses that could impair a physician's ability to perform duties
- allow for "safe haven" nonreporting for physicians who are receiving treatment and monitoring in either the Missouri Physicians Health Program or the Physician and Health Professional Wellness Program
- allow for "safe haven" nonreporting for physicians who have successfully completed a treatment program
- encourage nonpunitive 100% confidential mental health care
- remove peer reference questions regarding mental health and substance use disorders of physician colleagues

Resolution 20 - Medical Student Clinical Education

Action: Amended Resolution Adopted

RESOLVED, that MSMA encourages Missouri physician preceptors to prioritize the clinical education of medical students; and be it further

RESOLVED, that MSMA encourages medical schools to offer competitive reimbursement to precepting physicians; and be it further

RESOLVED, that MSMA encourages Missouri hospitals to develop and implement policies to prioritize the clinical education of medical students; and be it further

RESOLVED, that MSMA encourages the Missouri General Assembly to further incentivize physicians, medical schools and hospitals to prioritize the clinical education of medical students for the wellbeing of the citizenry of Missouri.

Resolution 21 - Physician Licensure Question

Action: Referred to Council

RESOLVED, that MSMA will work cooperatively with the Missouri State Board of Healing Arts to modify the current language of licensure/re-licensure question #13, such that it becomes clear that the State of Missouri and its Board of Healing Arts does not consider the mere receipt of mental health services by physicians to signify the presence of a mental, emotional or nervous impairment to safely practice medicine; and be it further

RESOLVED, that MSMA will work to bring Missouri State Board of Healing Arts questions for re-licensure in compliance with American Medical Association Policy D 275.946, "Protecting Physician Wellbeing on Applications for Board Certification", American Medical Association Policy H-275.945, "Self-Incriminating Questions on Applications for Licensure and Specialty Boards", and American Medical Association Policy H-275.970, "Licensure Confidentiality."

Resolution 22 - Medicare Reimbursement for Telemedicine

Action: Amended Resolution Adopted

RESOLVED, that MSMA will submit a resolution to the AMA House of Delegates supporting removal of the December 31, 2024 "sunset" date currently set for Medicare to cease reimbursement for services provided via telemedicine, such that reimbursement of medical services provided by telemedicine be continued indefinitely into the future, consistent with what would be determined by the Relative Value Update Committee ("RUC").

Resolution 23 - Opioid Use Disorders During Pregnancy

Action: Amended Resolution Adopted

RESOLVED, that MSMA supports the expansion of access to evidence-based treatments, such as buprenorphine, for pregnant individuals with opioid use disorder, and be it further

RESOLVED, that MSMA encourages improved medical education on the knowledge and management of opioid use disorders during pregnancy and the perinatal period.

Resolution 24 - Protecting Access to IVF Treatment

Action: Amended Resolution Adopted

RESOLVED, that MSMA opposes any legislation or ballot measures that could criminalize in-vitro fertilization; and be it further

RESOLVED, that MSMA works with other interested organizations to oppose any legislation or ballot measures that equate gametes (oocytes and sperm) or in-vitro embryos with children; and, be it further, RESOLVED, that MSMA forwards this resolution to the AMA. **MM**

Presidential Inauguration Address

by David L. Pohl, MD, 2024-2025 MSMA President

Welcome to the Annual Meeting of the Missouri State Medical Association. As many of you know, this is one of the oldest sections of organized Medicine in the state of Missouri, founded in 1850; and is nearly as old as the American Medical Association, founded in Philadelphia in 1847.

Our thanks go to the staff of the MSMA who have worked throughout the year, and especially over the past few weeks and months, to ensure the success of this meeting. A very well deserved thank you!

I would also like to thank several individuals for their support. First, my wife Kathy, and our daughters, Megan and Lindsey, who have endured my absence on multiple occasions, as well as the shifting of the timing of many of our evening meals over the years. I would also like to thank Dr. Nick Verde and Dr. Ed O'Brien, both of whom encouraged my attendance and participation in organized Medicine during the early years of my career; to Dr. Karen Goodhope, who kept up always lively and energetic discussions as we shared rides to various meetings in Kansas City, the Lake, and elsewhere; and to Mr. David Nowak, who was always there with friendship, a discerning ear, and a fresh perspective.



Outgoing President Dr. Gates (left) and incoming President Dr. Pohl (right).

I once had a teacher in high school who was going over the upcoming year with me. He opened the front of my borrowed textbook, took an ink pen, and wrote on the inside front cover. I was aghast, "you aren't supposed to write in the books". But then he explained, always ask yourself, "WHY?", which is what he had written. That has been a guiding principle in my life ever since, along with a corollary "always consider the source".

I would now like to address why we are here tonight. For some, the camaraderie of meeting old friends is a draw. For many, the reason is to improve our knowledge and skills in assisting those members of society that we are privileged to call "our patients". After all, the "physician-patient" relationship is at the core of practicing Medicine, since we are there for them in their times of need and vulnerability. Early on, as physicians, we learn that we unfortunately "cure" relatively few individuals, but instead try to keep things from becoming even worse than if we were not there at all. So, we attend meetings to learn new ideas, new approaches, and new advances to help our patients.

A humbling fact is that many of the most significant medical advances are made by those who are not necessarily involved in direct

Recipients of the 50-Year Physician Pin

Nineteen physicians were recognized with their 50- Year Physician pin award during MSMA's Presidential Inauguration. Congratulations to all our 50-Year Pin recipients!



Nineteen physicians received their 50-year pins from MSMA. With President Gates is Linda Milholen, MD, of Mountain Grove.

- David K. Bean, DO – Chesterfield
- James R. Blaine, MD – Springfield
- J. Thomas Critchlow, MD – Cape Girardeau
- Robert B. Cusworth, MD – St. Charles
- Ralph G. Dacey, MD – St. Louis
- Lewis C. Fischbein, MD – St. Louis
- Jhonson E. Flores, MD – Gilbert, AZ
- Richard K. Gutknecht, MD – Lee's Summit
- David S. Martin, MD – Chesterfield
- Linda S. Milholen, MD – Mountain Grove
- Carl M. Myers, MD – Weatherby Lake
- Nuzhat Nisar, MD – St. Charles
- K. T. Papreck, MD – Olathe, KS
- Frederick L. Thompson, MD – Nevada
- Paul B. Vatterott, MD – Des Peres
- Kirk M. Wanless, MD – Moberly
- Paul D. Wheeler, MD – Overland Park, KS
- John W. Williams, MD – Springfield
- John D. Yeast, MD – Prairie Village, KS

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patient care. These are the people who develop the drugs, the vaccines, and the technology that we use to help our individual patients; thus doing more for health care, in general, than we can do as individual physicians.

However, we all can do something which will have a tremendous impact upon our patients' lives, and that of the larger population; and that is ADVOCACY. By that engagement, we can educate and influence those people, organizations, and legislative bodies who make decisions that affect the lives of ourselves and our communities; and which, in turn, will impact everyone's ability to lead successful, healthy, and rewarding lives.

As we come together at our annual meeting, we strive to recognize those things that we wish to improve; then work to inform, educate, and convince others that our goals are not only laudable, but do-able. Out of this meeting will come a series of resolutions that summarize our positions. But it can't stop there. We also need to invest our time and money to make our goals known. Support through membership is critical to the success of organized Medicine. Perhaps more importantly, however, is the investment of our time, and the involvement of ourselves, to effect a change. The reward and satisfaction achieved when others recognize and support our position is priceless.

To paraphrase a famous presidential quote, "Ask not what Medicine can do for you, but what you can do for Medicine", which should be followed by the questions, "if not me, who?" and "if not now, when?".

I realize that nothing I've said this evening will directly result in any of these observations being immediately accomplished. However, if one person is inspired to become more involved in our Advocacy efforts, then this evening will have been successful. If this will inspire several more people to do so, then we, as a Society, can and will be a formidable and unstoppable force. **MM**

Credentials and Appointments

The 166th Annual Convention of the Missouri State Medical Association was held April 5-7, 2024, at the Renaissance St. Louis Airport Hotel, St. Louis, Missouri. Timothy Swearengin, DO, Springfield, presided as Speaker of the House of Delegates. Parliamentarian was Jo-Ellyn Ryall, MD, St. Louis.

The Committee on Credentials announced that there were 9 Officers, 17 Councilors, and 52 Delegates in attendance for the Opening Session of the House of Delegates.

This report and the minutes of the 165th Annual Convention as published in the May/June 2023 issue of *Missouri Medicine* were approved.

At the Second Session of the MSMA House of Delegates, the Committee on Credentials reported that there were 9 Officers, 17 Councilors, and 60 Delegates in attendance.

Reference Committee members were: George Hruza, MD, Chesterfield – Chair; George Mansour, MD, St. Louis; Basia Michalski-McNeely, MD, Young Physician Section; Keith Ratcliff, MD, Washington; and James Wolfe, MD, Springfield.

The MSMA Nominating Committee members were: Matthew Atwood, Medical Student Section – Chair; Robert Weigand, MD, 1st District; Stephen Halpin, MD, 2nd District; Edmond Cabbabe, MD, 3rd District; Martin Willman, MD, 4th District; Albert Hsu, MD, 5th District; David Barbe, MD, 6th District; Lancer Gates, DO, 7th District; Warren Lovinger, Jr., MD, 8th District; Peggy Barjenbruch, MD, Organized Medical Staff Section; Sara Hawatmeh, MD, Young Physician Section; Deepu Sudhakaran, MD, International Medical Graduate Section; Ngozi Wilkins, MD, Women Physicians Section; and Kelly Schmidt, MD, Resident and Fellow Section. **MM**



Charles Van Way, III, MD, presents the *Missouri Medicine* Distinguished Editorial Service Award to Managing Editor Lizabeth Fleenor during the House of Delegates.



The Alliance turned 100 years old in 2024! Celebrating the Centennial from left are incoming President Donna Corrado, President Gates, AMA Alliance President Racheal Kunesh, and outgoing Alliance President Sana Saleh.



The General Session on Artificial Intelligence in Health was well received. Speaker Carl Dirks, MD (left), was introduced by MSMA's Brian Biggers, MD.



Lisa Thomas MD, (left), and Amy Zguta, MD, are with Jennifer McNay with Mizzou School of Medicine Alumni Relations.



Louis DelCampo, MD, testifies on a resolution during the Second House of Delegates.



Jo-Ellyn Ryall, MD, and David Barbe, MD, are both local, state, national, international, and medical specialty representatives.



Saint Louis University School of Medicine alumni enjoy hospitality during the receptions Saturday evening.

MSMA Elects Leadership: 2024-2025

OFFICERS

President
David Pohl, MD, St. Louis

President Elect
Brian Biggers, MD, Springfield

Secretary
Ellen Nichols, MD, Joplin

Treasurer
Elie Azrak, MD, St. Louis

Immediate Past President
Lancer Gates, DO, Kansas City

1st Vice President
Carlin Ridpath, MD, Springfield

Honorary Vice President
John Krautmann, MD, Jefferson City

Honorary Vice President
John Rollo, MD, Des Peres

Speaker
M. Laurin Council, MD, St. Louis

Vice Speaker
George Mansour, MD, St. Louis

COUNCILORS

Council Chair (3rd District)
Kevin Weikart, MD, Lake St. Louis

Council Vice Chair, (7th District)
Joanne Loethen, MD, Kansas City

1st District
Chakshu Gupta, MD, St. Joseph

2nd District
Hossein Behniaye, MD, Hannibal

3rd District
Erin Gardner, MD, St. Louis
Jenny Page, MD, St. Louis
Inderjit Singh, MD, St. Louis
Christopher Swingle, DO, St. Louis

5th District
Lisa Thomas, MD, Lake Ozark
Amy Zguta, MD, Columbia

6th District
Dorothy Munch, DO, Poplar Bluff
Lirong Zhu, MD, Clayton

7th District
Amy Patel, MD, Kansas City
Fariha Shafi, MD, Overland Park, KS

8th District
David Kuhlmann, MD, Sedalia
Timothy Swearengin, DO, Springfield

Organized Medical Staff Section
Peggy Barjenbruch, MD, Mexico

International Medical Graduate Section
Louis DelCampo, MD, Springfield

Young Physician Section
Rachel Kyllo, MD, Arnold

Women Physicians Section
Adriana Canas-Polesel, MD, St. Louis

Resident & Fellow Section
Rachana Raghupathy, MD, St. Louis

Medical Student Section
Lacey Raper
University of Missouri - Columbia

VICE COUNCILORS

2nd District
Barbara White, DO, Hannibal

3rd District
Ramona Behshad, MD, St. Louis

4th District
Keith Ratcliff, MD, Washington

5th District
Jennifer Powell, MD, Osage Beach

7th District
Sarah Florio, MD, Lee's Summit

International Medical Graduate Section
Deepu Sudhakaran, MD, Chesterfield

Young Physician Section
Sara Hawatmeh, MD, Ballwin

Women Physicians Section
Kelly Schmidt, MD, Columbia

Resident & Fellow Section
Julia Dmowska, MD, Columbia

Medical Student Section
Bethany Baumgartner
Kansas City University

AMA DELEGATES & *ALTERNATE DELEGATES

Elie Azrak, MD, St. Louis
Edmond Cabbabe, MD, St. Louis
Joseph Corrado, MD, Mexico
Betty Drees, MD, Kansas City
Charles Van Way, III, MD, Kansas City

* Peggy Barjenbruch, MD, Mexico
* George Hruza, MD, Chesterfield
*Ravi Johar, MD, Chesterfield
*Joanne Loethen, MD, Kansas City
*Charlie Adams, Kansas City University

AMA PAST PRESIDENT

David Barbe, MD, Mountain Grove

ALLIANCE

President
Donna Corrado, Mexico

President Elect
Gill Waltman, St. Louis

MM

Summary of Council Actions: 2023-2024

Meeting of April 2, 2024 – Westin Kansas City at Crown Center

Brian Biggers, MD, Springfield, was elected Chair of Council; Kevin Weikart, MD, was elected Vice Chair of Council; M. Ellen Nichols, MD, was elected Secretary; Elie Azrak, MD, St. Louis, was elected Treasurer.

Meeting of July 16, 2023 – Courtyard by Marriott, Jefferson City, Missouri

For the first time in over a decade, MSMA will be increasing its dues for active members for the 2024 membership year. At its July meeting in Jefferson City, the MSMA Council approved the increase of $51 dollars per member for an annum total of $450.

In the past 22 years, active dues have increased by only $20. That represents an increase of 6%. During that same time, cumulative inflation rose 63%. The Council concluded an adjustment was needed to account for increases in expenses over that time. Even with the increase, MSMA remains $40 below the average state medical society dues. The move takes MSMA from having the 48th least expensive dues among the state societies to the 40th least expensive. No changes were made to the retired, resident/fellow, or medical student categories.

In other membership news, MSMA announced a new texting service available through our member management software will allow members to sign up for text alerts. See related article in this newsletter on how to opt-in for the alerts.

Lancer Gates, DO, MSMA President, asked that everyone utilize the many services and benefits offered by MSMA: discounted DEA MATE training, the Physician Wellness Seminar at the Lake of the Ozarks in October, and Physician Advocacy Day on March 5, 2024, to name a few. He challenged everyone to help recruit new members by promoting the Summer Special; MSMA has already surpassed the membership number for 2022. MSMA also has wallet/business-sized cards with a QR code to join MSMA. Members can request the business cards to hand out to nonmembers by emailing communications@msma.org.

MSMA staff are also attending student organization fairs at the medical schools to sign up new members.

MSMA is pursuing several avenues for non-dues revenue including securing sponsors for the 2024 Annual Convention and for *eProgress Notes*. A Physician Wellness Conference will be held in October in collaboration with MAOPS and the Missouri Academy of Family Physicians. The Virtual Osteopathic Conference will be offered again next year, also held in conjunction with MAOPS. MATE training, discounted for MSMA members, is another non-dues revenue stream. Our member management software offers a Job Board feature, so please consider utilizing this if you are looking for a job or looking to hire a new employee.

Advocacy

Dr. Gates reported that he and MSMA EVP Jeff Howell met with Heidi Miller, MD, the new Chief Medical Officer of the State of Missouri and discussed graduate medical education and Missouri's funding of GME positions. They also discussed the recent change in hospital physician re-credentialing from two years to three years, and asked Dr. Miller if BNDD licensing could likewise be changed to every three years; it is currently required each year.

The Legislative Committee reviewed Resolutions 8, 12 and 14 from the 2023 Annual Convention and made recommendations, motions and duly seconded:

Resolution 8 – Firearms Safety and Violence Prevention was referred to the Committee on Public Health;

Resolution 14 – Support for Interstate Medical Licensure Compact was approved;

Resolution 12 – Pelvic Exams for Anesthetized Patients – due to law having been passed in Missouri, this resolution was not adopted.

MSMA has hired two new lobbyists, Rachel Bauer and Jacob Scott, who bring a combined 30 years of experience. He encouraged everyone to use the *Legislative Review* as a recruitment tool and reported that the lobbyists will be traveling throughout the state to visit physicians in their home districts. You can find the *Legislative Review* online at msma.org/advocacy, MMPAC is hosting several fundraisers this summer and Dr. Gates encouraged members to attend any of three campaign fundraisers for Tony Luetkemeyer that are being held throughout the state.

Registration is now open for Physician Advocacy Day, March 5, 2024, in Jefferson City. MSMA is once again teaming up with MAOPS to host this event.

Education

The Committee discussed the 2024 Annual Convention, which will be held April 5-7 at the Renaissance St. Louis Airport Hotel. Future conventions dates are: 2025 - University Plaza Hotel in Springfield; 2026 - St. Louis, and 2027 in Kansas City.

Topics for the 2024 Annual Convention include artificial intelligence in healthcare, DEA-MATE training, healthcare trends post-pandemic including telehealth, shortages of health care workers, and clinic closures, and weight loss management, treatment of diabetes, and medications.

The Commission approved Esse Health's progress report and accepted the expired accreditation term of Lake Regional Health System. MSMA currently accredits 18 providers.

Medical Economics

The Commission on Medical Economics, Third Party Medicine, and Government Relations recommended that Council adopt the following substitute for Resolution #11 – Waiver of Network Considerations in Emergencies:

RESOLVED, that the American Medical Association work with hospitals and insurers to waive network considerations for patients who are transferred to an out-of-network facility during a state of emergency declared by either the federal or a state government; and be it further,

RESOLVED, that this resolution be submitted to the American Medical Association House of Delegates.

AMA Report

The report of the AMA Delegation is published in the July/August *Missouri Medicine*. It highlighted the 2024 Annual Meeting and its many topics of discussion. Several physicians from Missouri serve in leadership roles. David Barbe, MD, is Past President of the AMA and the World Medical Association. Edmond Cabbabe, MD, serves as Chair of the Council for Long Range Planning and Development. Elie Azrak, MD, serves on the Board of AMPAC, the AMA Political Action Committee. Jerry Kennett, MD, Jerry Kennett, MD, serves on the Board of the AMA Foundation. Deepu Sudhakaran, MD, is on the Governing Council of the International Medical Graduate Section. Marc Mendelsohn, MD, was elected to the Council on Science and Public Health. Charles Van Way, III, MD, was elected Secretary of OSMAP.

Physicians Health Program

The Missouri Physicians Health Program reported that has a total of 69 participants going through recovery or mental health/recovery. The MPHP is available to all Missouri physicians, physicians-in-training, and medical students and all communications are kept strictly confidential. If you struggle with substance abuse, mental health complications, or any other difficulties, or you know someone in the medical field who does, please contact us at 800-958-7124 or visit www.themphp.org.

Alliance

Sana Saleh, Alliance President and Donna Corrado, President Elect, ceremonially presented a check to the Missouri State Medical Foundation for $8,850, representing funds raised by the Alliance in the past year. This was an increase of $780 over the previous year's fundraising.

Commissions & Committee Appointments

- Medical Economics – David Kuhlmann, MD
- Continuing Education – Louis DelCampo, MD
- Public Health – Lirong Zhu, MD
- Physicians Health Committee – Lisa Thomas, MD

Districts and Sections Report (selected)

Districts 1 & 2

Chakshu Gupta, MD, (District 1) and Hossein Behniaye, MD, (District 2) both reported that the Buchanan County and Hannibal areas, respectively, are encouraging younger members to join, and the societies are offering medical scholarships.

District 3

Inderjit Singh, MD, announced that the St. Louis Metropolitan Medical Society SLMMS is offering two educational opportunities in September: September 12, Kanika Cunningham, MD, Director of the St. Louis County Department of Public Health, and Mati Davis, MD, Director of Health for the City of St. Louis, will present an update on "Public Health Needs in the St. Louis Region." On September 27, MSMA staff will present a virtual Legislative Update via Zoom.

District 6

Dorothy Munch, DO, reported that Cape Girardeau met with good attendance from students and residents. She reported that Mercy is buying Southeast Hospital in Cape Girardeau.

District 7

Joanne Loethen, MD, reported the Kansas City Medical Society has a new Executive Director, Micah Flint. KCMS is hosting a networking and learn event on how physicians can engage in advocacy on October 26. Fariha Shafi, MD, reported that the KCMS Wellness and Prevention Committee is partnering with the Foundation on a project focusing on opioid prevention and education in schools. This will include public service announcements about fentanyl poisoning and how to administer Narcan.

District 8

David Kuhlmann, MD, reported that the Sedalia area is now combined with the Springfield area in District 8. Dr. Biggers reported that the Greene County Medical Society has been having social activities, including an upcoming trip to Breckenridge that will include CME.

Organized Medical Staff Section

Albert Hsu, MD, offered the report. Dr. Gates and Amy Patel, MD, (OMSS Councilor) have been researching CMS reappointment practices. Following CMS' move to a three-year reappointment cycle in November 2022, Dr. Patel considers this an opportune time for Missouri to move from its current 2-year recredentialing to 3-year recredentialing.

International Medical Graduate Section

Chakshu Gupta, MD, reported that they had met and discussed the Conrad-30 visa waiver program for international medical school graduates. There are 20-30 positions per state that IMGs are eligible for and there is talk of increasing the number of positions, especially in underserved areas.

Women Physicians Section

Adriana Canas-Polesel, MD, reported that the WPS is working on recruiting and networking with more women members. They are considering in-person meet-ups in key areas, and possibly opening those events up to women physicians who are not currently members to help with MSMA membership.

Medical Student Section

Jay Devineni, University of Missouri-Columbia, stated that this is the season for student fairs and they appreciate having Jeff Howell and the lobbyists attend those events to help with recruitment. Free student dues make it very easy to sign students up for membership. They are promoting the MSMA advocacy workshop and are also planning their own internal workshop to help students understand the resolution process. Goals of the workshop include making sure that resolutions are well-researched and do not overlap with current MSMA policy. They are also planning to offer education to students on the legislative process at the Capitol.

Meeting of October 15, 2023 – Courtyard by Marriott, Jefferson City, Missouri

During its October Council Meeting on October 15 in Jefferson City, leadership previewed the upcoming legislative session, discussed membership, and future events.

Lancer Gates, DO, MSMA President, continues hosting Fireside Chats this Autumn, which have included speakers from the Board of Healing Arts, the Missouri Prescription Drug Monitoring Database, and Show-Me Health Information Network. He attended a meeting at North Kansas City Hospital with Missouri Physicians Health Program in response to recent physician suicides. His recent article in *Missouri Medicine*, "MSMA – Your Oxygen Mask," addressed the issue of physician burnout. Other visits and meetings included attending the Physician Wellness Seminar, a networking event hosted by the Kansas City Medical Society.

Dr. Gates reminded the group that MSMA is offering MATE training to satisfy the requirements for DEA licensure, as well as CME provided through the VOC program which is being offered in collaboration with the Missouri Association of Osteopathic Physicians and Surgeons (MAOPS). He also reported that the Executive Committee discussed ways to involve MSMA's retired physicians more in the organization. The Organized Medical Staff Section discussed the benefits of Safe Haven, a group that ensures physicians can seek support for burnout, career fatigue, and mental health reasons without the fear of undue repercussions to their medical license.

Advocacy

MSMA lobbyists have been traveling throughout the state to visit legislators in their home districts. The Doctor of the Day program will be reinstated at the Capitol beginning in January. Physicians can sign up at msma.org/DoctorDay. This program will offer

volunteers the opportunity to visit with legislators in an advocacy capacity, without the medical service aspect of the former program. Physician Advocacy Day will be held on March 5, 2024. MSMA will form a committee with members of MAOPS to discuss strategic partnerships, with an emphasis on advocacy.

Jeff Howell, MSMA EVP, thanked everyone who attended the MMPAC fundraiser dinner for Senator Karla Eslinger. Ravi Johar, MD, reported that the Legislative Committee discussed upcoming strategies and issues and heard a presentation on the results of the 2024 legislative survey.

The Committee discussed two resolutions that were referred out of the House of Delegates. The first, Resolution 8 – Firearms Safety was adopted by the Council.

RESOLVED, that our Missouri State Medical Association support legislation for a universal background check requirement to purchase firearms and support firearms safety education.

The second, after much discussion, Resolution 2 - Access to Puberty-Suppressing Hormone Blockers for Transgender and Gender Diverse Youth, was not adopted.

Annual Convention

Preliminary topics for the 2024 Annual Convention include artificial intelligence, medical/legal issues, weight loss management (medical or surgery), and mental health issues/crisis. Registration is open at msma.org/Convention. MSMA staff has secured sponsorships for several Convention programs and physicians are encouraged to reach out to bstennis@msma.org with any information on potential sponsors. The site for the 2026 and 2028 Conventions is the DoubleTree Chesterfield. A Committee on Governance, which was called for at the 2023 House of Delegates, will convene in late November to explore ways to modernize MSMA's governance structure, streamlining the sections, committees, and the House of Delegates to increase member engagement in MSMA.

Education

MSMA's Commission on Continuing Education reported that Capital Region Medical Center was granted full accreditation for four years. Commission members reviewed the progress report for St. Francis Medical Center and approved it with an addendum of Criterion 11. Boone Hospital has relinquished its accreditation as of August 2023. MSMA now accredits 17 providers.

Physicians Health Program

The Missouri Physicians Health Program reported that it currently is helping 69 physicians in 26 different medical specialties in recovery and mental health. MPHP runs entirely on contributions. If you would like to support the program, visit www.themphp.org/donate.

Reports of Councilors (Selected)

District 1

Chakshu Gupta, MD, reported that the Buchanan County Medical Society has been meeting monthly with lectures on medical topics and has continued medical scholarships. BCMS has provided its Alliance with a donation to support anti-bullying activities for school children. Dr. Gupta informed the group of a text resource for physicians who are experiencing burnout and need help: Text "SCRUBS" to 741741.

District 2

Hossein Behniaye, MD, reported that District 2 continues with its scholarship program. He announced that Hannibal will be offering internal medicine residencies. Long time MSMA Michael Bukstein, MD, has retired and was honored recently.

District 3

Inderjit Singh, MD, thanked Dr. Gates, Rachel Bauer, and Jacob Scott for joining the St. Louis Metropolitan Medical Society's annual Legislative Update in September. SLMMS hosted a virtual Public Health Forum the Director of the St. Louis County Health Department and the Director of Health for the City of St. Louis.

District 5

Amy Zguta, MD, reported that Audrain County will be re-opening its hospital in December. Boone Hospital has a new CEO, who will start in November. MU has formed a new strategic relationship with Northeast Medical Center in Kirksville and Moberly. Boone County Medical Society held a roundtable legislative presentation in October. Lisa Thomas, MD, added her appreciation for being included in the BCMS roundtable.

District 7

Betty Drees, MD, reported that the Wellness Committee continues to work on the opioid crisis, partnering with an organized student group associated with the Northland on educational materials on fentanyl and Narcan use. There has been state funding to break ground on a new psychiatric facility in Kansas City to address mental health needs.

District 8

David Kuhlmann, MD, reported that District 8 had joined an accountable care organization and has received its first shared savings this year from Medicare. Dr. Biggers reported that Greene County Medical Society has been very active with CME activity and discussions on medical school expansion. Cox Hospital has increased physician leadership.

Women Physicians Section

Adriana Canas-Polesel, MD, reported the Section has met and is working on a newsletter. A survey will identify topics that members would like to see the WPS address, and everyone is encouraged to join in the virtual meeting later this month.

Resident and Fellow Section

Rachana Raghupathy, MD, reported that the RFS has been working on recruitment of members, as well as retention and engagement. Leadership members have been designated to spearhead various endeavors, including newsletters. They are also coordinating with the Medical Student Section to have an in-person mixer for networking.

Medical Student Section

Jay Devineni, University of Missouri-Columbia, reported the section is planning a combination resolution-writing/advocacy direct testimony workshop next year to encourage strong, robust resolutions. They are also pairing students with physicians for the vetting of resolutions.

AMA Report

Elie Azrak, MD, reported that the AMA Delegation is preparing to attend the Interim Meeting in Maryland this month. Charles Van Way, MD, will compile and edit the report of the AMA's proceedings for our members. Dr. Azrak, who also serves on the AMA Political Action Committee, commended the quality of MSMA's Advocacy Workshop and emphasized the importance of financial support for political action. He encouraged everyone to contribute to the Missouri Medical PAC. The AMA PAC supports federal congressional campaigns of physician-friendly members of Congress. He called on current AMA members to support the PAC and encouraged non-members to join.

Edmond Cabbabe, MD, outlined the representation and positions held by members of Missouri's Delegation to the AMA. He reported that he has presented a resolution twice to have the AMA Board study the Assistant Physician issue and guide us toward a solution, but the proposition was not adopted. He shared his concerns about the effects of legislation being considered in other states that would allow international medical graduates to work with a licensed physician for two years as an alternative to residency. Missouri law currently limits the number of years an assistant physician can collaborate with a licensed physician, and this could result in assistant physicians moving to other states where they can obtain full licensure without residency.

Alliance

MSMA Alliance President Sana Saleh offered highlights from summer and fall events and announced that the Alliance would be celebrating its 100th anniversary in April 2024. The MSMA Alliance continues to support Cape Girardeau in its efforts to re-establish its area Alliance. The Executive Board voted unanimously to rename an annual award from the "Jean E. Duensing Literary Award" to the "Lizabeth Starnes Fleenor Literary Award" to honor Mrs. Lizabeth Fleenor who has been the MSMA Director of Communications for 30 years and also the MSMA Alliance Liaison for 24 years.

Meeting January 27, 2024 – Via Videoconference

MSMA President Lancer Gates, DO, has been representing organized medicine around the state, at activities that include the October 2023 Physician Wellness Seminar hosted jointly by MSMA, MAOPS and MAFP. He attended an October Kansas City Medical Society networking event and the KCMS Annual Meeting in November. He participated in the MSMA/MAOPS Collaboration Task Force in November and again in January. He met with

Jefferson City physicians at the Cole County Social in November. In December, Dr. Gates attended the meetings of the St. Charles-Lincoln County Medical Society and the Buchanan County Medical Society; he also participated in the MSMA/MAOPS Legislative Summit via Zoom.

Fireside Chats continue as February will feature Heidi Miller, MD, the Missouri Department of Health and Senior Services Director, and March will feature MAOPS President Victoria Damba, DO. They will take questions and have discussion about the collaborative task force, and everyone is welcome to attend. Also in February, Kansas City Medical Society and MSMA will combine to host a collegiality event for physicians to field questions about local hospital mergers (St. Luke's-Kansas City merging with BJC-St. Louis, and Liberty Hospital merging with University of Kansas Hospital system), as well as discuss legislative issues being addressed in Jefferson City.

Advocacy

Ravi Johar, MD, reported the many advocacy opportunities for members including Physician of the Day, Physician Advocacy Day, and testifying at committee hearings as legislation arises. These testimonies will be needed on Tuesdays and Thursdays. Physician response is critical when committee hearings occur.

The Doctor of the Day program is back in place, and volunteers are needed on Tuesdays and Wednesdays. Physician Advocacy Day is scheduled for March 5. After guest speaker Lt. Governor Mike Kehoe makes opening remarks, physicians will proceed to the Capitol and be recognized in the House of Representatives.

MSMA along with MAOPS and MAFP will host a Zoom meeting on, February 4 to discuss collaborative practice – where we are, what physicians need to know, and how these statutory changes will affect what collaborative practice looks like.

The Committee discussed several of the legislative bills currently being considered. Scope-of-practice bills were discussed, notably optometry, CRNAs and APRNs. A bill on adaptive questionnaires has resurfaced and is being opposed. MSMA is supporting bills for truth-in-advertising and prior authorization. MSMA remains constant in its lobbying efforts with the executive branch and will be weighing in on the rule-making that follows the legislative process. The Board of Healing Arts recently voted to rescind the 75-mile proximity rule for collaborative practice, although the concept of geographic proximity is still a requirement.

David Barbe, MD, offered the Committee a federal update and discussed the new CMS rules regarding prior authorization. The Committee recommended that Senator Tony Luetkemeyer receive the MSMA Legislator of the Year award at Physician Advocacy Day.

Committee on Publication

Forty-eight physicians representing 44 medical specialties and four MSMA medical sections and nine physicians representing the Committee on Publication were approved to the 2024 Missouri Medicine Editorial Board.

John Hagan, III, MD, thanked the Council which approved the recommendations.

Education

The MSMA's 2024 Annual Convention will be held at the Renaissance St. Louis Airport Hotel, April 5-7, 2024. The General Sessions include: Injections vs. Scalpels or Continuum of Care? Updates in Obesity Treatment; Managing Mental Health Disorders; Artificial Intelligence; and Physician Employment Issues.

As of January 1, 2024, the MSMA will have sixteen accredited providers. MSMA accredited providers received the Annual Report/Annual Maintenance Fee notification letter the first week of October and MSMA staff worked with the ACCME who directly invoiced and collected their Annual Maintenance fee (based on its tiered fee structure) from MSMA accredited providers.

The Commission began hosting virtual accreditation interviews in 2023. Commission members reviewed the evaluation summary of the virtual accreditation interviews for 2023. The reviews were favorable for the virtual format and surveyors were commended for being familiar with the accreditation materials and displaying professionalism.

The ACCME SMS Meeting was held November 30-December 1, 2023, in Chicago, IL. MSMA staff and Douglas Wallace, DO, attended the meeting. Attendees participated in professional development activities, discussed enhancing provider support and education, received updates regarding maintaining provider data in PARS, and reviewed data as it related

to equivalency in decision-making and compliance with the markers of equivalency. MSMA encourages members to take advantage of upcoming CME offerings: the VOC and the MATE training. MSMA receives a royalty payment for everyone that signs up.

AMA Report

The MSMA Delegation to the American Medical Association participated in the AMA's Interim Meeting in November. The summary of the meeting can be found in the November/December *Missouri Medicine*.

MSMA Insurance Agency

The MSMA Insurance Agency has now merged with Acrisure and Wallstreet Insurance and can offer a much wider range of products and services to help MSMA members. Complete integration of the old Insurance Agency database and policies over to Wallstreet should be completed soon. Ronnie Staggs is still available to discuss your needs and will now have a much bigger portfolio of products.

Alliance

Sana Saleh, MSMA Alliance President, reported that preparations are underway for Match Day on March 15 at both KCU campuses in Kansas City and Joplin and at Saint Louis University. University of Missouri-Columbia will hold its Match Day party later this summer. The MSMA Alliance, in conjunction with physicians in Cape Girardeau and Quad County will host a SEMO Social on March 22 with the goal of increasing membership in both the society and its Alliance.

The MSMA Annual Meeting will feature a celebration of the Alliance's Centennial (1924-2024). Mrs. Saleh thanked everyone for welcoming her during her presidency and for the help she received from the MSMA staff.

Reports of Councilors (selected)

District 1

Chakshu Gupta, MD, reported that the Buchanan County Medical held an annual meeting in December that included spouses and the Alliance, and was attended by Dr. Gates, Mrs. Saleh, and Jacob Scott. Monthly meetings will begin in March, with a focus on medical affairs and medical education.

District 2

Hossein Behniaye, MD, reported that Hannibal Regional Hospital now has an electrocardiology program, in addition to the established open-heart surgery, thoracic, and bariatric surgery programs. The local society is trying to get more members after a significant decrease in members due to retirement and trying to revitalize the in-person meetings.

District 3

The St. Louis Metropolitan Medical Society's Annual Meeting and officer installation dinner will be on February 3., at the Living World at the Saint Louis Zoo, and Kirsten Dunn, MD, will be installed as the 2024 SLMMS president. Ravi Johar, MD, will receive the Schlueter Leadership Award. The SLMMS Award of Merit will be presented to Daniel Holt, MD, of Saint Louis University School of Medicine. Also recognized will be David Nowak, who is retiring after eleven years of service as SLMMS executive vice president.

The SLMMS has entered into a three-year association management agreement with MSMA, who will provide executive oversight and operations management, with Patrick Mills (former MSMA Executive Vice President) to serve as Executive Director. The SLMMS office in St. Louis will remain open, staffed by business manager Chris Sorth.

District 4

Kevin Weikart, MD, reported that the St. Charles-Lincoln County Medical Society will meet on January 30 and prepare resolutions for the MSMA Annual Convention.

District 5

Albert Hsu, MD, reported that the Boone County Medical Society had an excellent legislative roundtable in October, hosted by MSMA and featuring speaker Lisa Thomas, MD.

District 7

Betty Drees, MD, reported that the Kansas City Medical Society has a new president, Greg Unruh, MD, who replaces Carole Freiberger, DO. KCMS and its Foundation have a joint wellness committee which continues working on the opioid crisis, particularly trying to get Narcan into schools. They are also working on physician burn-out, reaching out to regional chief medical officers, and asking them to share what the

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hospitals and medical staff are doing to address the issue. Dr. Mark Steele, the CMO at University Health of Kansas City, will be one of the first speakers. Amy Patel, MD, shared information on a recent cyber-attack at Liberty Hospital.

District 8

Dr. Biggers reported that Jim Rogers, MD, was recently installed as Greene County Medical Society president. Society is getting re-invigorated, with a summer CME event being planning in Colorado. At Cox, they are in a growth phase with expansion planned and several new physicians coming in.

Young Physician Section

Rachel Kyllo, MD, reported that the YPS is planning a mixer with the WPS at the upcoming Annual Convention with Women Physicians and International Medical Graduate Sections.

Resident and Fellow Section

Rachana Raghupathy, MD, reported that they had an Intro to Advocacy session for trainees in conjunction with some of their recruitment efforts, which was well-received and well-attended. Future events include a financial literacy event, an insurance event, and a coaching and mentoring session.

Medical Student Section

Lacey Raper reported a Zoom workshop on February 13 will take place regarding resolution-writing and testimony. **MM**

Reports of the Delegate Handbook: 2023-2024

Report of the Secretary

The Missouri State Medical Association had 4,562 members at the end of the 2023 dues year (August 31, 2023). This was a net gain of 463 members from our membership of 4,099 as of August 31, 2022. Following is a breakdown according to classification.

Year	Students	Residents	Active	Honor	Total
2022	1,578	387	1,859	275	4,099
2023	1,776	762	1,744	280	4,562

The number of member deaths reported during 2023 totaled 10.

The Committee on Nominations, which is appointed by the President, from the House of Delegates, must submit nominations for the following offices:

Three Vice Presidents to fill the expired terms of James A. DiRenna, Jr., DO, Kansas City; Jeff Copeland, MD, St. Peters; and Alexander Hover, MD, Ozark.

Speaker and Vice Speaker to fill the expired terms of Timothy Swearengin, DO, Springfield; and Laurin Council, MD, St. Louis.

Two Delegates and Five Alternate Delegates to the AMA to fill the vacancies created by the expiration at the conclusion of the 2024 Annual Convention of the terms of Delegates: Edmond Cabbabe, MD, St. Louis; and Joseph Corrado, MD, Mexico; and Alternate Delegates: Peggy Barjenbruch, MD, Mexico; George Hruza, MD, Chesterfield; Ravi Johar, MD, Chesterfield, Joanne Loethen, MD, Kansas City; and Charlie Adams, Kansas City University (one-year term). The new two-year terms will begin at the conclusion of the 2024 MSMA Annual Convention and end at the conclusion of the 2026 MSMA Annual Convention.

The terms of the following Councilors will expire in 2024: 3rd District – Inderjit Singh, MD, St. Louis; Christopher Swingle, DO, St. Louis; 5th District – Lisa Thomas, MD, Lake Ozark; Amy Zguta, MD, Columbia; 6th District – Lirong Zhu, MD, Clayton; 7th District – Fariha Shafi, MD, Overland Park, KS; Joanne Loethen, MD, Kansas City; Organized Medical Staff Section – Amy Patel, MD, Kansas City; International Medical Graduate Section – Louis DelCampo, MD, Springfield; Resident and Fellow Section – Rachana Raghupathy, MD, St. Louis; Medical Student Section – Jay Devineni, University of Missouri-Columbia.

The terms of the following Vice Councilors will expire in 2024: 3rd District – Ramona Behshad, MD, St. Louis; 5th District – Jennifer Powell, MD, Osage Beach; 6th District – Nathaniel Barbe, DO, Mountain Grove; 7th District – Sarah Florio, MD, Lee's Summit; Organized Medical Staff Section – Albert Hsu, MD, Columbia; International Medical Graduate Section – Raghuveer Kura, MD, Poplar Bluff; Resident and Fellow Section – Julia Dmowska, MD, Columbia; Medical Student Section – Lacey Raper, University of Missouri-Columbia.

Members shall meet virtually or by email prior to the Annual Convention to elect the Councilors and Vice-Councilors for their respective districts and sections. The election shall be certified to the House of Delegates on the prescribed form which will be furnished.

The House of Delegates will hold its first session on Saturday, April 6, at 8:30 a.m., and its second session on Sunday, April 7, at 8:15 a.m.

Registration will take place online at https://www.msma.org/event-5263036, and in-person at the Annual Convention from 3:00-6:00 p.m. on Friday, April 5, and 6:30 a.m.-5:00 p.m. on Saturday, April 6.

Report of the Treasurer

The report of the Treasurer which includes the Financial Statements will be published in a future edition of *Missouri Medicine.*

Report of the Executive Vice President

You should be proud that your Missouri State Medical Association is widely recognized as the voice of medicine in Missouri. Be it the Missouri General Assembly, the countless governmental bureaus and agencies, the business community, the insurance industry, hospitals, advocacy groups, or the media, MSMA is considered the leading advocate for your profession and your patients. Following is just a sample of the many things your MSMA did for you in 2023.

State Legislative Activities

Your MSMA lobbyist team enjoyed a very good year in the state Capitol in 2023. They are quick to credit you and your MSMA colleagues with much of that success, not only for your active involvement in the political process, but also for the respect you command in your community. MSMA's four lobbyists and two consultants are involved in more legislative healthcare issues than any other organization in the state; everything from scope of practice to tobacco, and tort reform to licensure. Your lobbyists are among the first to arrive at the Capitol every morning, and among the last to leave at night. Their diligence and effectiveness is unsurpassed. Rather than overwhelm you with details on the myriad bills and issues they work on, I'll refer you to our weekly *Legislative Report* and *5 Things You Need to Know*, which members receive during the legislative session. If you are not reading these e-publications, you're missing out.

Other Notable Activities

Despite only having the resources and numbers of a smaller-sized state medical association, your MSMA is one of the most diverse and active state organizations in the nation. Here are just a few of the activities undertaken on your behalf over the last year.

Your President and MSMA staff were able to attend a number of local society meetings across the state. From Cape Girardeau to Washington, and from St. Joseph to St. Charles, your leadership and staff continue to make themselves available to every local society, no matter how large or small.

MSMA boasts an outstanding group of member physicians who give the better part of a week twice a year to represent you and your patients in the AMA House of Delegates. It is thankless work at times, but there is not a better AMA delegation than yours. Please thank them.

In addition to its regular duties, your MSMA staff also provides top-rate administrative services for other medical societies, and serves on or maintains liaisons with a large number of external governmental and private-sector committees, task forces, boards and commissions. In 2024, MSMA is providing administrative services to the Missouri State Orthopedic Association, the Missouri Society of Gastroenterology, and the St. Louis Metropolitan Medical Society.

Membership Services and Benefits

Your MSMA staff and leadership are constantly striving to bring even more value to your membership. One constant priority is to improve communications with our members and respond more quickly to answer questions and resolve issues. We encourage you to visit the MSMA website often. More content is constantly being added, with more timely information to help you and your office staff. Three years ago, MSMA migrated to a new and improved website, and a new user-friendly membership database. Also, you can now pay membership dues online and access our membership database to search for your physician colleagues. You can also make donations to MMPAC and MSMF.

Missouri Medicine, MSMA's outstanding award-winning scientific journal, is free to you with your membership. It is published in digital format as well as the traditional paper copy. The journal's scientific content is accessible in the renowned PubMed database. You can find current and archived electronic editions on our website.

Progress Notes, our quarterly newsletter (free to members), is chock-full of timely news items, tips, and information. An electronic version, e-Progress Notes, is distributed monthly by email.

MSMA also offers you free CME credits at the Annual Convention every year, and numerous other opportunities to earn CME through our statewide CME recognition program. MSMA accredits 16 entities to offer CME, many of which participate in joint providership across the state. Yet another membership benefit. MSMA has partnered with MAOPS to offer live CME through the VOC. The VOC is held live during President's Day weekend, but enduring materials can be accessed through the spring. Enrollment fees for the VOC benefit MSMA.

I would ask you to also be mindful of the more direct benefits your MSMA membership offers. For example, we are partners with Moneta, an outstanding financial services firm that provides MSMA members with expert financial planning and investment services. SHINE is a health information exchange (HIE) which facilitates electronic medical records software sharing clinical information with other EMRs in addition to providing assistance with MIPS compliance.

MSMA's Affiliate Organizations

Your Missouri State Medical Foundation has loaned more than $11.8 million to Missouri medical

students since its inception more than fifty years ago. The Foundation board made the decision in 2017 to cease its loan program due to the number of private lenders in the market. The focus is now on scholarships for Missouri medical students. In 2023, MSMF awarded $300,000 in scholarships to 60 medical students at all six of the allopathic and osteopathic medical schools in the state. And the Foundation offers $5,000 matching funds to local medical societies to create scholarships for medical students. Physicians can donate to the Foundation on the MSMA website.

Your Missouri Physicians Health Program is widely considered one of the most successful of its kind in the nation. Last year the program served 73 physicians who are dealing with chemical, emotional, or behavioral issues. You can assist your colleagues by asking your hospital medical staff and administration to contribute funds to this exceptional and vitally important program. In 2024, MPHP will begin assisting other health professionals as well.

Your Missouri Medical Political Action Committee is one of the most respected and effective association PACs in the state. In the last election cycle, MMPAC contributed close to $100,000 to support physician-friendly candidates across the state. Membership begins at the $100 Sustaining Member level, but you can demonstrate your political savvy by upgrading to one of the Super levels: Silver ($250), Gold ($500), or Diamond ($1,000). Of course, any amount is appreciated. You can now donate to MMPAC through PayPal or the MSMA website. Your participation is essential to our political effectiveness.

Your MSMA Insurance Agency was formed by MSMA and is directed by physicians to serve you and your practice. In 2024, the Agency entered a co-marketing agreement with Wallstreet/Acrisure to expand its insurance products and services portfolio. This agreement provides some financial support for MSMA. Please contact rstaggs@wallstreetins.com for more information.

The MSMA Alliance has dedicated and enthusiastic physician spouses who work tirelessly to promote health education and support health-related charitable activities, all toward improving the health and welfare of all Missourians. And they are a force to be reckoned with when they march on the Capitol every year to advance medicine's legislative causes. They are also a great group of fundraisers for the MSMF.

Your Organization

It is nearly impossible to list all of the duties and services MSMA provides for the physicians of Missouri. The advocacy and representation, the publications, the CME, the Foundation, the Physicians Health Program, the Alliance, and your AMA Delegation all cumulate in an organization deeply rooted in service to its members and the patients they serve. The MSMA is YOUR organization, and your officers and staff welcome your thoughts on how best to serve you and your fellow members. Feel free to seek them out – at this convention or at any time – and share your ideas.

Heartfelt Thanks

On behalf of the staff and the entire MSMA membership, I want to express undying gratitude for your officers, councilors, committee members, and other leaders who give so much of their time and resources for the betterment of the Association and patient care in Missouri. They are nothing short of extraordinary.

I also want to express my appreciation for allowing me to work with talented and dedicated MSMA employees whose creativity and diligence are unmatched anywhere. Liz Fleenor, the Director of Communications, is the managing editor of your award-winning Missouri Medicine and Progress Notes, designs all the MSMA pamphlets and logos you see, and oversees MSMA's website. Benita Stennis, the Director of Operations and Education, does all of our meeting planning – including the Herculean task of organizing the Annual Convention – and also directs all aspects of CME programming. Rachel Bauer, your Director of Government Relations, spends her springs in the Capitol advocating for your best interests. She also manages two sections and the MSMA Legislative Committee. Our Executive Services Specialist, Cheri Martin, keeps the office running like a well-oiled machine, day in and day out. She also manages MMPAC's day-to-day activities, as well as MSMF and MSOA, and she serves as liaison to the Women Physicians Section. Cassie Williams, the Membership Data & IT Specialist, tends to our complicated member database and coordinates all the membership billing and mailing for MSMA. She's the one you want if you need to know if someone has paid their dues. Jacob Scott is the Director of Legislative Affairs and manages the International Medical Graduate section. He is an advocate for you in the Capitol and

a well-regarded healthcare policy guru. Carol Meyer, the Administrative Assistant, is that invaluable team member who can play any position. She spends a lot of time helping with the meeting planning and CME activities, but she's the go-to person when anybody on staff needs a little extra help.

And finally, please allow me to thank you, the physicians of Missouri, for the opportunity to serve you in this outstanding organization.

Report of the Alliance

As my two-year term as Alliance President comes to an end, I would like to highlight the importance of the relationship between the MSMA and the Alliance. We have worked closely in the past years on many levels.

Whether it be advocacy, drug overdose prevention, Stop the Bleed, Physician Family Day, Doctors' Day, or plain social networking, the physician family is the core of why we are the Alliance and the community to which we serve. I am proud of the achievements and strides we have crossed, and yet despite the challenges we face as physician families, today we celebrate our Centennial 1924-2024 celebrating 100 years of partnership.

Our Fall conference this past October focused on Artificial Intelligence and Cybercrime. We continue to provide our members with education and keep them with up-to-date information on current issues that face us and our communities.

The Alliance in Missouri trains young students on Stop the Bleed as our team in St. Louis did with the Loyola Middle School students last April. The St. Louis Metropolitan Medical Society Alliance with its Hungry Heroes project is in its third consecutive year. They initiated a physician Family Day outing in August for the first time and hope to grow their event in the future.

In Greene County, there a significant and strong participation in the annual Physician Family Day at the Dickerson Zoo with more than 300 in attendance, followed by the Discovery Center Family Event in February.

I had the pleasure of attending the Buchanan County Medical Society's holiday luncheon in December with the joint attendance of Alliance and medical society members. The event had an engaging historical presentation by Robert Corder, MD, followed by a synopsis of MSMA's President Lancer Gates' perspective on medicine in Missouri and the challenges it faces.

Buchanan Alliance members support bullying prevention in schools by providing "Hand Are Not for Hitting" and other skill building books for elementary school aged students.

The Kansas City Medical Society Alliance provides up to three scholarships annually through the Truman Medical Foundation to nursing students in need of financial assistance. Their health project of the pillowcase dresses is in its ninth year to prevent girls from trafficking.

The MSMA Alliance supports Match Day events at Kansas City University, both Kansas City and Joplin campuses, University of Missouri, both Kansas City and Columbia campuses; in St. Louis a luncheon is held at the Ritz Carlton for students from Saint Louis University. It is always a joy to watch young medical students being matched and the look of joy on their faces! Our volunteers, with the help of the U.S. Army, provide pizzas to the KCU events which cheer them on.

The MSMA Alliance advocates for Missouri medical students whether through our annual MSMA Foundation fundraisers taking place twice a year through our Holiday Sharing Card and this weekend's Foundation Fundraiser to support our medical student scholarship programs. If you have not contributed to the MSMA Foundation already at last night's reception there will be QR code cards available during this convention or you can reach out to any of the MSMA staff.

Another joint effort between the MSMA and Alliance was the Cape Girardeau Social/Dinner that took place in March. Along with my presence, our President Elect, Donna Corrado, and MSMA's President and his spouse, Lancer and Stacey Gates, as well as Jeff Howell, MSMA's Executive Vice President made presentations to invigorate active participation and membership in the Cape Girardeau County Medical Society and Alliance.

We are so excited for this year as the MSMA Alliance turns 100 years old! It was created two years after our national AMA Auxiliary in 1922.

You are all invited to visit our Centennial Room display on the 12th floor in Boardrooms I & II and take a tour of our archives, projects, awards, and photos we have collected from our county Alliances across Missouri.

I would like to welcome Racheal Kunesh, our AMA Alliance President, who joins us from North Carolina for this special occasion. Please take a moment to greet Racheal personally whose motto this year has been "Be A Catalyst" since Racheal comes from a chemical engineering background.

Finally, I would like to thank everyone from the MSMA office to all members of the Council and physicians who welcomed me and my colleagues and have shown support for our projects. My successor, Donna Corrado, will be an excellent leader to take over the helm of the Alliance.

Commission on Continuing Education

The Missouri State Medical Association currently accredits 16 entities statewide.

The Commission reviewed and approved MSMA Provider Reaccreditations for the Institute for International Medicine-Kansas City, MO, Capital Region Medical Center-Jefferson City, MO, and Mercy Hospital St. Louis-St. Louis, MO.

Providers withdrawn from accreditation include Capital Region Medical Center-Jefferson City, MO, Lake Regional Health System-Osage Beach, MO, and Boone Hospital-Columbia, MO.

MSMA staff attended the ACCME's Spring Meeting in May 2023. Staff participated in educational sessions regarding the Standards for Independence and Integrity in Accredited Continuing Education, State Medical Society Collaborations, Planning and Evaluation Tips for Accredited CME, and Cultivating CME Leadership.

The ACCME held its State Medical Society meeting in late fall of 2023, in Chicago, IL. MSMA staff and Douglas Wallace, MD, attended. Attendees reviewed the Standards for Independence and Integrity in depth, shared tools to market continuing medical education programs to increase the number of accredited providers and continued discussing states with fewer than twenty accredited providers establishing regional recognition bodies as recommended by the ACCME.

Additionally, staff and Commission members completed required education sessions at their leisure via the ACCME's online portal.

Commission on Medical Economics, Third Party Medicine, and Government Relations

The Commission on Medical Economics, Third Party Medicine, and Government Relations met by videoconference on July 6, 2023, to discuss one resolution referred to us by Council. We entertained lively discussion on it, and offered the following recommendation for Council, which was approved on Resolution #11 – Waiver of Network Considerations in Emergencies. The original resolution did not contain a directive for MSMA. Rather, it only made a request of the AMA, and therefore does not establish new MSMA policy. We consolidated some of the repetitive language in the resolution and cleaned it up significantly. The first resolved statement gives direction to AMA and the second calls for submission to the AMA House of Delegates. We do think the issue is proper for AMA consideration; therefore, we recommend Council adopt the following substitute resolution:

RESOLVED, that the American Medical Association work with hospitals and insurers to waive network considerations for patients who are transferred to an out-of-network facility during a state of emergency declared by either the federal or a state government; and be it further,

RESOLVED, that this resolution be submitted to the American Medical Association House of Delegates.

Committee on Membership

The 2023 MSMA membership year closed with 1,747 active members (a 6% decrease from 2022), 656 residents, 1,803 students, and 280 retired members. Active membership has decreased 46% since the end of the 2014 dues year (August 2014). A large increase in resident and student members of the same timeframe results in a 5% gain in membership.

Approximately 101 physicians have joined as new active members so far in the 2024 dues year. In addition to traditional recruiting methods, there was a positive response to MSMA phone calls to non-renewals. Peer-to-peer outreach is the most beneficial way to maintain and grow membership.

MSMA offered a "Summer Special" discounted membership rate in 2023 that attracted 24 new members. Over the past two summers, 112 physicians have joined at the discounted summer rate.

MSMA staff was able to participate in a number of events across the state in 2023, including medical school recruitment events.

In addition to our social media presence, MSMA hopes to attract more members through additional advocacy publications and events. We encourage all members to follow us on social media and share our posts.

MSMA increased its active membership dues for the 2024 dues year to $450. This was the first dues increase in more than 10 years.

Missouri Physicians Health Program

This has been a busy year as indicated by the number of referrals and the numerous Missouri physicians that were assisted. The MPHP provides a variety of services. This includes consultation, intervention, referral for treatment, monitoring and advocacy. The consultive service is especially active. Hospital administrators, physicians, colleagues and family members call the Program Coordinator or Clinical Coordinator to make a referral, discuss a potential referral or brainstorm about the necessity of making a referral. Information is often requested about how to identify problems, what services are available and how to handle issues of impairment should they occur. Many hours are required to meet their needs.

In this cycle, MPHP saw a total of 73 clients, covering 73 medical specialties, released 23 participants with the main contracts being recovery and mental health. The MPHP provides a safe and knowledgeable venue for any question or concern about physician health.

MSMA Insurance Agency

Your MSMA Insurance Agency underwent significant change at the end of 2023. After more than 20 years as an independent insurance agency owned and directed by MSMA, the Agency entered into a co-marketing agreement with Wallstreet/Acrisure on January 1, 2024. This arrangement allows MSMA members to access a much wider range of insurance products and services. Complete integration with Wallstreet/Acrisure is expected to occur sometime this spring.

MSMA benefits from the relationship with Acrisure and encourages members to engage them for all your insurance needs. Although the employees of the Agency have become full-time employees of Wallstreet/Acrisure, they are still available to discuss your needs and their larger portfolio of products. They can be reached at rstaggs@wallstreetins.com or 573-659-0571.

Missouri State Medical Foundation

The Missouri State Medical Foundation has made more than 3,000 medical school student loans over the past 52 years, totaling nearly $12 million. The loan program has been closed, and the Foundation now funds Missouri State Medical Association scholarships, which have been awarded over the past 17 years.

In 2023, the Foundation awarded $5,000 MSMA scholarships to ten Missouri medical students at each of the six medical schools. This totals $300,000 in scholarships, benefiting 60 Missouri medical school students. The Foundation has provided a cumulative scholarship total of $2.17 million awarded to Missouri natives who are attending a medical school in Missouri.

The Foundation also matches funding up to $5,000 for local medical society scholarships. The MSMA Alliance has been an important partner to the Foundation through generous fund-raising activities, contributing more than $8,000 in 2023.

Committee on Publication

Volume 120 of *Missouri Medicine* published original research, up to date scholarly reviews, and analysis of important individual and public health matters. This volume published five issues featuring "theme" articles (Dermatology, Whole Person Healthcare, Post COVID Pandemic Perspective, Psychiatry, Molecular Medicine), and one issue presenting an informative variety of scientific topics and micro-series. It contained 468 pages and 41 scientific articles. This included one First Literature Report.

Additional Perspectives included continued coverage of poisoned pills, fentanyl, and physician liability for failure to stock naloxone; Missouri requirements regarding APRNs; advertising in the digital age; artificial intelligence; and continuing post-COVID issues. *Missouri Medicine* launched a new series of Perspectives: Inspiring Lives & Careers, highlighting physicians around the state and how they are an inspiration to others. The Journal featured

a two-part series on the History of Medical Illustration. These articles are being linked to the website of the National Association of Medical Illustrators.

In 2023, *Missouri Medicine* received a record number of unsolicited manuscripts. About one in five was accepted for publication. The Journal has an international footprint and manuscripts were submitted from several foreign countries. Our theme issues are fully subscribed through September/October 2025. Theme issues have regular contributions from faculty at the four allopathic and two osteopathic medical schools in Missouri on 8 campuses.

We would like to thank these highly qualified physicians for doing invited peer-review: Douglas W. Scharre, MD; Brandon D. Barthel, MD; Albert Hsu, MD; Fernanda Bellolio, MD; Jesse Pines, MD; Stephen C. Kosa, MD; Anand Chockalingam, MD; David Ingram, MD; Carri Mintz, MD; Blake Cooper, MD; Sandeep Gautam, MD; Munish Goyal, MD; Albert David, MD, PhD; Kumar Rao, MD; Catherine E. Hagan, PhD, DVM; Sean Gratton, MD; Carrie Beth Robertson, MD; and Tyler Chamberlain, PharmD.

Here are the changes in our 2024 editorial board: Amanda M. Kingston, MD, is the new Editorial Board member for Psychiatry. She replaces Jessica A. Gold, MD, who relocated out of state. Stephen T. Keithahn, MD, will move into the vacated position in Physician Wellness and Joanne Loethen, MD, will move into the Internal Medicine/Pediatrics slot. Erik M. Grossmann, MD, is the new Editorial Board member for Colon and Rectal Surgery; he replaces Jose M. Dominguez, MD, who is retiring after nearly a decade in this position. Sherry X. Zhou, MD, PhD, is the new Editorial Board member for Endocrinology. Dr. Zhou replaces Howard M. Rosen, MD, who represented Endocrinology on the board for nearly 15 years and is retiring. Jeffrey F. Scherrer, MA, PhD, an MSMA Affiliate member, is the new Editorial Board member for Statistics and Methodology. He replaces Christopher R. Carpenter, MD, MSc, who moved to the Mayo Clinic. Douglas M. Burgess, MD, is the new Editorial Board member for Toxicology and Addiction Medicine. He replaces Evan S. Schwarz, MD, who coordinated several theme series on addiction medicine and emergency medicine. Dr. Schwarz has joined a medical school in California. Scott W. Kujath, MD, FACS, FSVS, is the new Editorial Board member for Vascular Surgery. He replaces Jonathan M. T. Bath, MD. Kent K. Huston, MD, is the new Editorial Board member for Rheumatology. Dr. Huston replaces Anne Winkler, MD, who is retiring after 15 years in this position.

Our Journal has changed its disclosure statement to include the use of Artificial Intelligence in scientific studies and in manuscript preparation. This follows the lead of most major world medical journals. We will use the JAMA guidelines.

The most significant change in 2023 was a directive from MSMA to reduce our maximum page count by about 10% and in the May/June issue, our largest which reports the proceedings of the MSMA Annual Meeting, to not publish non-theme scientific. These changes were necessitated by the unprecedented inflation in this nation. This has lengthened our publication queue, raised our already high standards for peer-review and necessitated stopping the offer of a Dean's Report for the medical school doing the theme issue. Without these changes the cost of production and postage would be untenable.

Missouri Medicine remains one of the country's foremost state medical journals. Thanks go to MSMA for 120 years of supporting its journal, Walsworth Publishing Company for 100 years of printing and digital production, our highly qualified and experienced Contributing Editors, our specialty board experts, and the chairs and coordinators at Missouri's six outstanding medical schools on eight campuses.

The Committee on Publication Chair and Editor, John C. Hagan, III, MD, and Managing Editor, Lizabeth Fleenor, BJ, MA, appreciate the many contributions of the MSMA, its leadership, Alliance, and Active members and others. The Committee on Publication appreciates the Association's continued support of the *Journal*. By any objective criteria *Missouri Medicine* is among the top three state medical society journals in the United States. **MM**



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2024 Annual Convention Attendance

Delegates	***60***
Members	***50***
Staff	***9***
Guests	***62***
Officers	***9***
Councilors/Vice	***27***
Alliance	***17***
Total	***201***

(Actual numbers will not balance due to overlaps in positions served.)

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Laurin Council, MD
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Ellen Nichols, MD
David Pohl, MD
Tim Swearengin, DO

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Morgan Martin

Saint Louis University
Karen Dale

University of Missouri-Columbia
Matthew Atwood
Sarada Prasad

University of Missouri-Kansas City
Satyanarayanan Sivasankar

Washington University
Miranda Mize

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Deepu Sudhakaran, MD

Resident & Fellow Section
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Kelly Schmidt, MD

Women Physicians Section
Carlin Ridpath, MD

Young Physician Section
Sara Hawatmeh, MD
Basia Michalski-McNeely, MD

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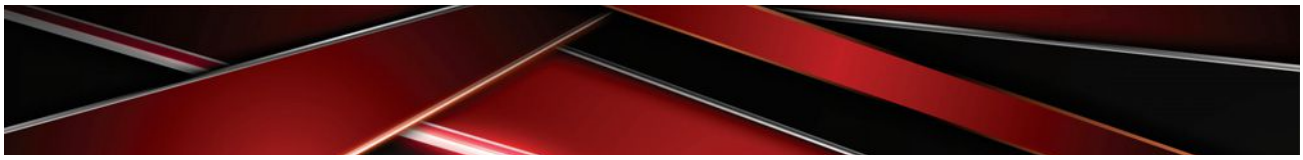
MSMA WHITE COAT



WHITE COATS EMBROIDERED WITH MSMA'S LOGO WERE ALL THE RAGE AT OUR 2024 ANNUAL CONVENTION!

ALSO AVAILABLE EDDIE BAUER QUARTER ZIP FLEECE WITH MSMA'S LOGO!

SCAN CODE TO PURCHASE!

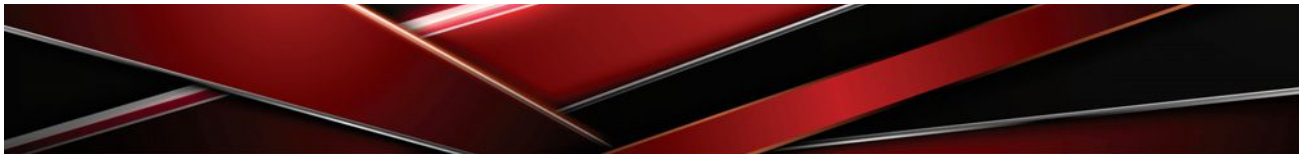




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