CHUCK WICHGERS

STATE REPRESENTATIVE • 83rd ASSEMBLY DISTRICT

Assembly Committee on Health
Public Hearing, April 26, 2017
Assembly Bill 260
State Representative Chuck Wichgers

Thank you Chairman Sanfelippo, and members of the Health committee for the opportunity to testify on Assembly Bill 260 - the chiropractic clinical tools package. I have been working closely with the Wisconsin Chiropractic Association to develop this legislation which has consensus support within the chiropractic community.

I am a big advocate for chiropractic care. My Grandfather, Uncle, and my cousins have practiced, or are currently practicing chiropractors in the Milwaukee area for over 50 years. I am a big believer that Wisconsin residents should have access to chiropractic care and benefit from it the way my whole family has benefited. My children, through grade school and middle school, have had their sports physicals performed by a chiropractor. I have a great relationship with my family practice physician who is an MD, sister in law, and friends who are PA's and NP's, respectively, and my family has benefitted from their medical treatment and advice. I think all Wisconsin parents and students should have the option to utilize their **(DC), (MD's),** or mid-level providers.

My intention in authoring this bill is to give chiropractors additional clinical tools to better care for their patients and provide them with effective alternatives including treatment of addictive opioids relevant to today's current challenges. We all know the threat that invasive treatments and systemic care such as opioids can present to patients in chronic pain. Chiropractic care has proven to be an effective treatment for back pain[1] and an effective alternative to opioids and long term prescription drug use[2].

All of the clinical tools included in this legislation are well within the educational and clinical capabilities of properly trained chiropractors.

This bill gives those chiropractors who want to take additional training the opportunity to perform sports physicals on student athletes in Wisconsin, perform chiropractic acupuncture and dry needling, and delegate appropriate services to other licensed health care professionals.

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[1] Spinal Manipulation Can Ease Your Aching Back - Consumer Reports, April 11, 2017
[2] Chiropractic Care Reduces Opioid Abuse, Dr. James Whedon, 2017.

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The key with extending any of these clinical tools to chiropractors is proper training and enforcement of standards. The training standards outlined in the bill reflect the best modern educational practices from around the country. Chiropractors obtain over 4200 hours of education to obtain their doctoral level education as a **(DC)** Doctor of Chiropractic.

The bill requires additional training in the key clinical areas important to safely perform **(PPE's)** pre participation examinations. The **(CEB)** Chiropractic Examining Board will be tasked with developing the specific training program for **DC's** (Doctors of Chiropractic) to perform **PPE's** (sports physicals) based on input from clinical experts here in Wisconsin and around the country. This process will allow other interested stakeholders - namely the Wisconsin State Medical Society, the Wisconsin Academy of Family Physicians and the **(WIAA)** Wisconsin Interscholastic Athletic Association - to have input on the PPE training program for chiropractors. This is how many other states have approached the **PPE** and I believe that the Chiropractic Examining Board, the Wisconsin Chiropractic Association and all interested stakeholders can come to an agreement on the training standards.

The bill also requires an additional 200 hours of training in chiropractic acupuncture for **DC's** to perform acupuncture, and 50 hours of training to perform dry needling. The 200 hour requirement is based on the World Health Organization recommended training standard for **MD's, DO's and DC's**. The dry needling standard of 50 hours is based on some of the best practices around the country.

The training requirement for **DC's** to perform **US DOT** driver examinations (which Chiropractors have been doing for many years) is spelled out in federal law - passage of the Federal Motor Carrier Safety Administration exam and registering on their database of approved health care providers. This bill codifies these requirements in state law.

Finally, allowing chiropractors to delegate appropriate services to other licensed health care providers is part of the evolution of health care in Wisconsin. A chiropractor should be able to hire a nurse or a medical assistant to work within their clinic without that provider having to take redundant training as a chiropractic technician (as the current law requires).

Health care in Wisconsin is changing - an aging population, a pending primary care physician shortage and an opioid epidemic that is taking lives daily. According to the 2016 Wisconsin Health Care Workforce Report on page 14: "Coupled with the existing physician shortage in Wisconsin, hospitals will need to make both short as well as long-term staffing decisions based on this shortage. The number of new PAs graduating from Wisconsin schools is not projected to keep pace with demand."[3] The number of Statewide Vacancy Rates among Physician Assistants,

[3] Wisconsin Health Care Workforce 2016 Report. *Wisconsin Hospital Association Inc. 14*

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from 2014 to 2015 has increased 150%.[4] The shortage is not exclusive to Physician Assistants, however. According to the same report, "Slightly more than 40% of nurses indicate that they plan to leave nursing in less than 10 years."[5]

If we are serious about addressing these challenges - particularly the opioid issue - we need to give chiropractors the additional clinical tools they need to serve the public health needs of Wisconsin. This bill offers patients **additional options** of quality treatment and care and effective alternatives to the use of opioids and surgeries.

Thank you for your time today.

Rep. Wichgers

[4] Ibid.
[5] Ibid. 6

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April 26, 2017

Wisconsin Assembly Committee on Health

Rep. Joe Sanfelippo, Chair

AB260 and Pre-Participation Examinations (PPE)

As physician organizations, other healthcare providers and other interested parties with a vested interest in the health and well-being of Wisconsin's student athletes, we stand in strong opposition to bill **AB260**, which would expand the scope of practice for chiropractors to perform pre-participation examinations before being cleared to participate in a sport.

There are several key issues with the PPE portion of the bill:

1. While annual physical examinations are recommended for children ages birth - 21, the rate drops dramatically as children progress through school. Therefore, securing the pre-participation evaluation is frequently the child's only encounter with a physician or other qualified medical practitioner.

   Ideally this examination would take place in the medical home - the clinic where the patient receives their routine medical care by a provider who is qualified in providing all aspects of routine medical care, including the PPE.

2. During that visit, clearance to play is just one part of the appointment, not a comprehensive medical examination for the PPE and other screening as would be the case in the primary care provider's office.

3. Conducting a full annual exam with the athlete's primary care provider ensures a comprehensive evaluation for, among other things:

    a. Cardiovascular conditions
    b. Appropriate immunizations
    c. Growth and development
    d. Mental and behavioral health
    e. Laboratory tests
    f. Hearing and vision screening
    g. Anticipatory guidance related to adolescent risk-taking behaviors
    h. Health education

4. Capturing the details of this annual visit, when conducted in the primary care provider's office, ensures full recording of the encounter in the patient's detailed electronic medical record. In addition, it allows the provider to have access to the patient's medical record, leaving less room for error, less risk for missed or intentionally omitted medical information, compared to examinations performed outside the primary care office.

5. Chiropractors do not have the training necessary to provide the comprehensive examination provided in the primary care provider's office. Such evaluations clearly fall outside the established definition of chiropractic practice as described in the Chiropractic Administrative Code (see CHIR 4.03, attached).

6. One of the key purposes of the screening exam is to screen for conditions that may be life threatening or disabling. Cardiac conditions which can lead to sudden death are rare and often difficult to detect. A comprehensive cardiovascular history and examination performed by a practitioner with thorough training in these conditions is best qualified to perform the PPE.

As physicians, other healthcare providers and other interested parties with a vested interest in the health and well being of children, adolescents and young adults in Wisconsin, we urge the committee to remove sections of AB260 that allow chiropractors to perform PPEs or other comprehensive assessments of a patient's overall health.

Sincerely,

- American Medical Society for Sports Medicine (AMSSM)
- Children's Hospital of Wisconsin
- Marshfield Clinic Health System
- Sixteenth Street Community Health Centers (SSCHC)
- UW Health
- UW Health American Family Children's Hospital (AFCH)
- Wisconsin Academy of Family Physicians (WAFP)
- Wisconsin Academy of Physician Assistants (WAPA)
- Wisconsin Athletic Trainers Association (WATA)
- Wisconsin Chapter of the American Academy of Pediatrics (WIAAP)
- Wisconsin Interscholastic Athletic Association (WIAA)
- Wisconsin Medical Society (WMS)
- Wisconsin Neurological Society (WNS)
- Wisconsin Primary Health Care Association (WPHCA)
- Wisconsin Psychiatric Association (WPA)

Good morning. My name is Franciska Anderson, and I have owned Pivotal Point Acupuncture & Wellness Center in downtown Oregon since 2008. I am going to talk about well-established educational requirements of Western medical doctors in the practice of acupuncture. I would like to give some perspective on the standards other health care providers are held to in order to legally and safely practice acupuncture here in Wisconsin and around the country.

The American Academy of Medical Acupuncture represents more than 1,300 medical acupuncture physicians and embodies all disciplines of Western medicine. As stated on their website, the Academy "is the leading proponent of the highest standards of

training, continuing education and practice of medical acupuncture....The training and practice requirements for membership in the AAMA are based on international standards and serve as a model for state oversight of medical acupuncture physicians, hospital practice privileges, liability coverage and third party reimbursement. The AAMA has helped establish the American Board of Medical Acupuncture to offer an examination and other standards for Board Certification of medical acupuncturists."

With all of this said, what do they consider the amount of education needed to practice entry level acupuncture safely? 300 hours of medical acupuncture training, a board examination, and two or more years

of clinical acupuncture experience. All this, of course, with the presumption that the physician has extensive training in invasive procedures, exhaustive bloodborne pathogen and biohazard training with respect to needle use and disposal, and advanced understanding of human physiology and anatomy, knowing where those underlying structures are in context to needle insertion.

To that point, my colleague Susan Padberg who is a medical doctor and acupuncturist submitted a very short letter that I will now read, if I may?

Dear Legislators,

I want to express some of my concerns about an upcoming bill, which will expand the scope of

chiropractic practice to include acupuncture treatments – with only 200 hours of additional training.

I have been practicing medical acupuncture full-time for more than 17 years. I am a former family physician who also did additional training – in my case 300 hours of continuing education. Even with the 300 hours of excellent training, I still found that the learning curve to provide consistently safe and effective acupuncture treatments to be very steep. In fact, even with full-time practice of acupuncture, additional acupuncture training and self-study, it took me 3 to 4 years before I really felt competent.

Many other physicians have taken the 300-hour course and tried to incorporate acupuncture into a busy medical practice and are often have been unsuccessful.

While I have deep respect for the amount of training that chiropractors have for the chiropractic scope of practice, I do not feel that 200 hours of additional training in acupuncture is adequate, or is in the best interest of our citizens.

[I think that the current law provides excellent standards for the scope of acupuncture practice for the state of Wisconsin, and] I encourage you to support keeping the law as it is. [EDIT OUT BRACKETED COPY?]

Thank you in advance. Please feel free to contact me, if you have questions or comments.

Sincerely,

Susan Padberg, MD, FAAMA

In closing, when qualified Western medical personnel need 300 hours to practice acupuncture, it follows that other professions with little or no basic training in invasive procedures should be held to at least 300 hours or more as well. Thank you.

WISCONSIN ACADEMY OF
FAMILY PHYSICIANS
STRONG MEDICINE FOR WISCONSIN

April 26, 2017

Dear Chairman Sanfelippo and Committee Members,

My name is Ken Schellhase, MD MPH. I am the current President of the Wisconsin Academy of Family Physicians, the largest medical specialty organization in the state with nearly 3000 members. I am a practicing family physician and a faculty member at the Medical College of Wisconsin since 2001. Like most family physicians, sports participation physicals are a service I provide frequently to my patients.

I will get straight to the point: I strongly urge you to not support AB-260. Here's why: General physical exams like sports participation physicals are important because they are a golden opportunity to detect subtle signs of potentially serious, life-threatening health problems in a child who probably seems, to an untrained observer, to be healthy.

What does it take to be competent to reliably find these subtle signs of potentially serious conditions? Physicians undertake 4 years of medical school and a minimum of 3 years of specialty training to become primary care doctors like family physicians and pediatricians. Along the way, we spend countless hours learning normal and abnormal human physiology, pharmacology, physical exam skills, and approaches to diagnosis and treatment—all supervised by more experienced physicians at every step. In our clinical training years (usually the 2nd two years of medical school plus 3 years of residency) we perform hundreds, if not thousands of repetitions of the heart and lung exam alone—all under supervision. This is what it takes to become a doctor who is ready and qualified to discern even the most subtle abnormalities of a child's heart when doing a physical exam to qualify them to play sports.

Beyond just the physical exam skills, to do a good job in screening a child for sports participation, we must have in-depth knowledge of pharmacology. Increasing numbers of children are on chronic medications, and these may have important implications for how the human body reacts under the stress of exertion. Here again, we spend years learning these things in the classroom, and then have thousands of supervised encounters with patients to finely hone this knowledge.

Just as my medical training does not prepare me to safely and competently perform chiropractic manipulations, a chiropractor's training does not prepare him or her to competently and safely perform a comprehensive physical examination. They are not prepared to detect the sound of wheezing in a child that may represent heretofore undiagnosed asthma; they are not prepared to hear a subtle murmur which may be the only clue that a child is a risk of sudden cardiac death; they are not prepared to make medical judgments about a further testing for a child who may have early signs or symptoms of diabetes.

If chiropractors want to be able to perform these exams competently, they need to have the same training that medical doctors are required to have. Accept anything short of that, and you are choosing to lower our long-held standards of medical training. Given their lack of training and expertise, I can't see any reason to lower these standards other than to allow chiropractors to grow their businesses. Don't risk the health of children just so chiropractors can grow their businesses. Don't fool yourself that you would be doing anything less.

Sincerely,

Ken Schellhase, MD MPH
President, Wisconsin Academy of Family Physicians

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Wisconsin Physical Therapy Association
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Telephone 608/221-9191 • Fax 608/221-9697 • wpta@wpta.org • www.wpta.org

To: The Honorable Representatives of the Assembly Committee on Health

Date: April 26, 2017

Re: AB-260 – Chiropractic Bill

The Wisconsin Physical Therapy Association is working with the author of this bill as well as the Chair of the Assembly Health Committee and the Wisconsin Chiropractic Association to ensure that the language contained in this bill related to the practice of dry needling does not restrict physical therapists' ability to perform trigger point dry needling. From our initial discussions, we are confident that we can amend the language to accomplish this.

Thank you for the opportunity to submit comments.

Sincerely,

Connie Kittleson

Connie Kittleson, PT, DPT
President, Wisconsin Physical Therapy Association
Phone: 262-389-1055
E-mail: jkittleson@wi.rr.com

PART 1

Thank you to Chairman Sanfelippo and Assembly members for convening this hearing. I appreciate the opportunity to speak.

My name is Kelly Hora. I am the president of the Wisconsin Society of Certified Acupuncturists and am here to speak in opposition of Assembly Bill 260.

I have owned my own acupuncture business for 15 years. This is my 12th year practicing in Madison, WI, where I run a full-time private practice and have worked as a contracted provider with UW Health Integrative Medicine at the Carbone Cancer Center at UW Hospital.

Growing research demonstrating the effectiveness of acupuncture has bolstered the utilization of acupuncture and many top medical institutions in the US include acupuncture as part of integrative medicine services. Today an estimated 1 in 10 adults in the US have received acupuncture. Acupuncture is recommended for treating 107 diseases, based on levels of evidence by the World Health Organization. The Centers for Disease Control recommends acupuncture as a non pharmacological treatment for pain as an alternative to opioids.

The bad news is that acupuncture's popularity and market potential has led to more and more non-certified health care providers seeking to practice acupuncture, in a manner that circumvents established legislated guidelines and with grossly inadequate training. Specifically, I would like to draw your attention to a disturbing trend: the unregulated and unlicensed practice of acupuncture rebranded as something called Dry Needling.

We are strongly opposed to chiropractors being able to practice acupuncture with only 200 hours of training. We also strongly oppose to the section that creates the practice of chiropractic dry needling **because it is misleading, especially for the public, as it**

represents the illegal and unregulated practice of acupuncture. "Dry needling" is a pseudonym for acupuncture that has been adopted by health providers who lack the legal ability to practice acupuncture within their scope of practice. This strategy allows groups to skirt safety, testing, and certification standards put into place for the practice of acupuncture.

1. Acupuncture is the use of a filiform needle for therapeutic purpose.

2. Dry Needling also defines itself as the use of a filiform needle for therapeutic purpose.

"Dry needling" is a style of needling treatment within the greater field of acupuncture. The practice of acupuncture includes any insertion of an acupuncture needle for a therapeutic purpose. Anatomically, "trigger points" and "acupuncture points" are synonymous, and acupuncture has targeted trigger points for over 2,000 years. Two large-scales studies comparing location of trigger points with location of acupuncture points verified that 71-93% of the time they were the same.

3. Acupuncture and Dry Needling as terms are frequently used interchangeably by medical doctors, acupuncturists, physical therapists, and others. Dry Needling is often called "Biomedical Acupuncture" and "Dry Needling Acupuncture"

"Dry needling" is indistinguishable from acupuncture since it uses the same Class II Medical Device *FDA-regulated medical device specifically defined as an "acupuncture needle," treats the same anatomical points, and is intended to achieve the same therapeutic purposes as acupuncture. There are no* commercially available FDA-approved "dry needles."

4. Our interest is in assuring that those who insert needles and use this invasive procedure are properly trained in vetted academic programs with properly determined curricula, supervised by qualified instructors, and certified via

psychometrically sound testing by a third party national organization to use this tool.

5. There are currently no independently vetted training programs for Dry Needling, no established and validated Dry Needling curricula, no means of assessing the competence of teachers in the field. There are no standards for clinical supervision nor any 3rd party standardized psychometric testing.

6. The American Medical Association recently stated plainly that no dry needling standards exist, and when and if they are set, recognizes dry needling as an invasive procedure that should only be performed by practitioners with standard training and familiarity with routine use of needles in their practice, such as licensed medical physicians and licensed acupuncturists.

7. *As a measure of perspective, the industry standard for medical doctors to practice acupuncture is 300 hours of training and passing a national board certification exam.* Wisconsin Acupuncturists certified under Chapter 451 have a minimum of three years of training, 1905 hours, of which 600 are clinical and pass a national board exam.

8. Acupuncture and Dry Needling are indistinguishable from each other from a regulatory and legislative standpoint as well. Hence, attempting to confine scope to a specific set of techniques and indications is difficult to impossible once this practice is added to a profession's scope.

PART 2

IN SUMMARY,

The terminology DRY NEEDLING is inaccurate and misleading, especially for the public. It represents the illegal and unrelated practice of acupuncture. Acupuncturists have used techniques indistinguishable from what is being now termed "Dry Needling" for thousands of years.

Decisions made about the legislation we are meeting about today have the potential to set a precedent and we should take that very seriously. We oppose the inclusion of DRY NEEDLING out of concern for objectively verified, minimal competency standards that protect the public from substandard and dangerous invasive medical procedures.

The inclusion of DRY NEEDLING in this bill could lead to scope of practice changes - not just for acupuncturists and chiropractors - but for oncoming waves of providers who may decide they want to insert needles into patients, circumvent the requirements to become a certified acupuncture, and instead say that are performing Dry Needling, which is the rebranding of acupuncture.

With this bill, you are in essence being asked to approve legislation that allows a chiropractor to do acupuncture by completing only 50 hours of study. This would create a loophole to practice acupuncture without following the guidelines established by the legislature to protect patients.

Furthermore, according to this bill, the content of those 50 hours would be determined by the Chiropractic Examining Board, who has no experience of expertise to do set such standards. There are currently no independently vetted training programs for Dry Needling, no established and validated Dry Needling curricula, no means of assessing the competence of teachers in the field. There are no standards for clinical supervision nor any 3rd party standardized psychometric testing.

With all due respect to chiropractors and the Chiropractic Examining Board under acupuncturists' educational and licensing organizations, not chiropractors, are the skilled and proper parties to determine whether anyone—chiropractor, physical

therapist, acupuncturist—has the training, experience and qualifications to perform acupuncture, including so called "chiropractic acupuncture," and including so called "dry needling" governed by federal law.

So we are being asked to consider a proposal that would allow a chiropractor to use an invasive procedure, and insert needles into patients, by completing 50 hours of whatever the chiropractic board decides is appropriate, even though we already have established, accredited, legislative standards for performing the acupuncture. Standards that were created to ensure the safety of patients. And we are being asked to give this privilege to chiropractors without training to do invasive procedures in its scope and without legislative intent to do so.

TO: Members, Assembly Committee on Health

FROM: Jeffrey Marcus, MD, President

DATE: April 26, 2017

RE: Opposition to Assembly Bill 260

WISCONSIN PSYCHIATRIC ASSOCIATION

On behalf of the over 400 psychiatrist members of our association, we urge your opposition to Assembly Bill 260.

We appreciate the opportunity to provide our testimony in written form, and apologize that with only a few days notice for this hearing we were unable to provide a child psychiatrist specialist to testify live and engage in a meaningful dialog with the Committee. We are more than happy to try and answer any questions committee members may wish to send our way.

No doubt not the purpose intended by its authors, if passed AB 260 would represent a substantial and unprecedented expansion of the scope of practice for chiropractors in Wisconsin into psychiatry – the medical specialty devoted to illness and disorders affecting mental, behavioral and cognitive function. We believe this expansion would put Wisconsin student-athletes at significant and unnecessary risk.

With alarming regularity, the media reports on athletes suffering from debilitating post-concussion disorders. The positive benefit of these reports is that our youth, school and collegiate athletic programs are increasingly attuned to concussions and post-concussion disorders. But make no mistake, the signs and symptoms of concussion or post-concussion disorders are often very subtle, manifesting themselves within symptoms of depression or anxiety or ADHD.

Our understanding of concussion and its impact on present or future cognitive function, behavior and mental state is growing, but is still far from complete. An athletic participation certification examination conducted by a physician or physician assistant or nurse practitioner is more than an examination to determine whether a student-athlete's muscles and bones are capable of safe participation in school or collegiate athletics. Whether it is specifically noted in a patient's record or on an athletic certification form, a complete, medical and physical exam of a patient *always includes questioning, observation and assessment of the patient's mental state and fitness* – a "clean bill of health" for student athletic participation must include such an evaluation to ensure as best we can that a student-athlete is not at unreasonable risk of harm to her/his cognitive, behavioral or mental abilities.

Regardless of their precise specialty (Family Physicians, Internists, Pediatricians or specialists in Adolescent Medicine), *all primary care physicians receive education and physician-supervised training in mental and behavioral health*. Though differing in scope, physician assistants and nurse practitioners do as well. *Chiropractors do not receive medical training in mental and behavioral health*. Thus intended or otherwise, the effect of AB 260 is either an expansion of the chiropractic scope of practice into psychiatry, or the elimination from student athletic certification examinations conducted by chiropractors of any qualified mental and behavioral health assessment.

Wisconsin is not lacking in qualified primary care physicians, physician assistants or nurse practitioners available to provide student-athlete certification exams. Distinct from chiropractors, all receive some level of mental and behavioral health education and training, and all are trained to seek specialty psychiatric consultation when presented with a case that is beyond their expertise. Given the necessity of such evaluation, AB 260 would put prospective student athletes at unnecessary risk.

Hello my name is John Burns.

I am speaking today to represent my personal views on why I am in opposition to AB260 as it relates to chiropractors being allowed to practice acupuncture and dry needling in the state of Wisconsin.

I feel I am in a unique position to support my views to oppose this bill in that:

- I hold a doctorate degree in physical therapy and a Master of Science degree in Oriental Medicine.
- I have been practicing physical therapy and acupuncture for over 17 years.
- I have been published in peer-reviewed journals on the benefits of acupuncture and Traditional Chinese Medicine for treating chronic pain and stress - non-pharmacologically
- I have been granted a U.S. patent for a rehabilitation tool I invented for treating pain and discomfort nonpharmacologically that was based on Oriental Medicine concepts.
- I teach at Marquette University and the Midwest College of Oriental Medicine.
- I am also the Clinical Coordinator of Acupuncture Services at Aurora Health Care
- In this role I oversee the hiring, onboarding, and quality oversight of acupuncturists who provide acupuncture within a variety of clinical settings including orthopedics, oncology, and most recently the emergency department.
- To this end, to be hired as an Aurora acupuncturist, applicants have to graduate from an accredited college, pass a national board exam, become certified by both the state of Wisconsin and the National Certification Commission on Acupuncture and Oriental Medicine.
- This process is available for anyone who would like to practice acupuncture in Wisconsin.

With my education and experience I feel compelled to speak today on behalf of my chosen profession, my fellow acupuncturists, and for patients who are seeking the benefits of acupuncture as it is currently defined and regulated by the state of Wisconsin to protect the interests of the public.

With this in mind I would like to state my reasons why I oppose this bill.

1. Programs that teach acupuncture or Dry Needling in 200 hours, or less, are programs that **marginalize acupuncture** as just another physical modality to be used alongside other types of biomedical adjunctive interventions like ice packs and therapeutic ultrasound.

2. From my experience these modalities are generally performed on a patient in a cookie-cutter type fashion that is provided simply to increase the cost of care.

3. In my opinion **Acupuncture** should not be regulated to **another adjuctive modality**

4. **Acupuncture** is and should remain a **"specialty" of medicine** - like chiropractic care is considered a specialty of medicine.

5. When performed by a **certified acupuncturist**, acupuncture is an **evidence-based specialty of medicine** that is utilized after a very comprehensive "whole-systems", or biopsychosocial, assessment of a patient's physical, mental, and emotional state of being.

6. To practice this evidence-based specialty of medicine requires extensive education and clinical internship experience to become an accomplished acupuncturist consisting of completing 1900 hours of course work; which includes 660 clinical hours, to ensure the integrity and safety of this specialty.

7. There are no obstacles to this process and therefore no need to circumvent this process. It is available for anyone who would like to practice acupuncture in Wisconsin.

8. If this bill passes and chiropractors are allowed to use acupuncture as another musculoskeletal modality:
    - The patients seeking acupuncture treatments will be put at risk physically and financially by being misinformed and misguided by the marginalized use of "chiropractic acupuncture" (as well as dry needling) by practitioners with only 200 hours of education or less.
    - The certified acupuncturists in the state of Wisconsin will be put at a competitive disadvantage because Chiropractors are mandated insurance benefits.
    - The public, and the health care system as a whole, will continue to suffer the consequences of relying solely on biomedical modalities, such as dry needling, that is used to treat only the musculoskeletal system with no regard to the relationship between the physical, mental, and emotional elements of a patient's condition as recognized in the specialty of acupuncture.

To include: I would like to invite any chiropractor or other health care provider that is interested in practicing acupuncture in the state of Wisconsin to attend an accredited Oriental Medicine College to learn how you to can become a certified acupuncturist in the state of Wisconsin, as I did, to fulfill your desire to provide this specialty of medicine.

And to reiterate: this process is already available for anyone who would like to practice acupuncture in Wisconsin. There is no need to circumvent this process.

Thank you for this opportunity to express my concerns and voice my opposition to AB260.

Dear Committee Members,

As a national board and Wisconsin state-certified acupuncturist I am writing to request your opposition of AB260 that would create the practice of "chiropractic dry needling" with only 50 hours of training and would also allow a chiropractor to practice acupuncture with only 200 hours of training. It puts the public in harms way and creates a competitive disadvantage between acupuncturists and chiropractors.

Passage of this bill would circumvent the minimum certification requirements to practice acupuncture that were crafted to protect the public. Current statutory requirements to become a certified acupuncturist include 1900 hours of coursework, 660 of which are clinical, and pass a national examination given by the National Commission for Certification of Acupuncture and Oriental Medicine (NCCAOM). In contrast, the proposed bill would allow chiropractors to practice acupuncture with only 200 hours of training and no requirement of supervised clinical hours.

The bill also creates the practice of "chiropractic dry needling." ***"Dry needling" is a pseudonym for acupuncture*** that has been adopted by physical therapists, chiropractors, and other health providers who lack the legal ability to practice acupuncture within their scope of practice. This strategy allows these groups to skirt safety, testing, and certification standards put into place for the practice of acupuncture. "Dry needling" is a style of needling treatment within the greater field of acupuncture. The practice of acupuncture includes any insertion of an acupuncture needle for a therapeutic purpose. Anatomically, "trigger points" and "acupuncture points" are synonymous, and acupuncture has targeted trigger points for over 2,000 years. "Dry needling" is indistinguishable from acupuncture since it uses the same FDA-regulated medical device specifically defined as an "acupuncture needle," treats the same anatomical points, and is intended to achieve the same therapeutic purposes as acupuncture. The American Medical Association (AMA) recognizes dry needling as an invasive procedure and maintains that dry needling should only be performed by practitioners with standard training and familiarity with routine use of needles in their practice, such as licensed medical physicians and licensed acupuncturists.

Another problem with this proposal is that chiropractors may have an advantage over certified acupuncturists for insurance reimbursement because chiropractic services are mandated insurance benefits. The proposal would create an incentive for chiropractors to bill for unnecessary services by blurring the line on insurance coverage and promoting fee splitting. This proposal hurts Wisconsin acupuncturists as small business owners and is a risk for healthcare consumers.

Please oppose AB260. Two hundred hours is not sufficient training to safely practice acupuncture, which is an invasive treatment. Further, the term "dry needling", the unregulated and unlicensed practice of acupuncture, is misleading. "Dry needling" is indistinguishable from acupuncture. There are currently no independently vetted training programs for dry needling, no established and validated dry needling curricula, no means of assessing the competence of teachers in the field. There are no standards for clinical supervision nor any 3rd party standardized psychometric testing. This bill would require only 50 hours of training to practice dry needling, as determined by the Chiropractic Examining Board, which is not qualified to set standards, based on no existing model, to certify chiropractors to use an invasive therapy. This would create a loophole to practice acupuncture without following the guidelines established by the legislature to protect patients.

Thank you,

Phillip Stamos L.Ac.

Phillip Stamos

Wisconsin Society of Certified Acupuncturists' Testimony on AB260
Elissa Gonda, C.Ac., MSOM, Chair of the Legislative Committee
Assembly Committee on Health
April 26th, 2017

Chairman Sanfelippo and members of the committee,

Thank you for the opportunity to share my perspective. My name is Elissa Gonda, and I am opposed to AB260. I am a state certified Acupuncturist, and I serve as the Chair of the Legislative Committee for the Wisconsin Society of Certified Acupuncturists. I hold a Master of Science degree in Oriental Medicine, and I completed an advanced internship at the Guangzhou Institute for Traditional Chinese Medicine in Guangzhou, China. I live in Madison, and my clinic, Dane County Family Acupuncture, is located in Monona.

For more than 25 years, Acupuncture has been practiced only by acupuncturists licensed under Chapter 451 of Wisconsin statutes. AB260 would radically change this, by allowing chiropractors to act as acupuncturists regulated exclusively by the Chiropractic Examining Board under Chapter 446. The Bill expands the methods of chiropractic practice under Chapter 446 to include "Chiropractic acupuncture" and "Chiropractic dry needling", but it does not amend or expand the definition of the "Practice of Chiropractic" to include either method. Acupuncture is a serious and rigorous profession, not a method or technique that can be employed on an occasional basis by another health care professional.

AB260 seeks to differentiate "Chiropractic Acupuncture" by removing the phrase "traditional Oriental medical concepts" from the definition of Acupuncture.

Chapter 451 states that:

- "Acupuncture" means promoting, maintaining or restoring health or diagnosing, preventing or treating disease **based on traditional Oriental medical concepts of treating specific areas of the human body, known as acupuncture points or meridians**."

- "Chiropractic acupuncture" means to promote, maintain, or restore health or to diagnose, prevent, or treat disease by treating specific areas of the human body, known as acupuncture points or meridians.

The definition of "Chiropractic Acupuncture" is problematic for several reasons. If Oriental medical concepts will not be used, how will medical decisions be made? As the bill stands "Chiropractic Acupuncturists" will diagnose disease by treating acupuncture points or meridians. How is that possible? A plain reading of Chapter 451 confirms that **"traditional Oriental medical concepts"** are defined as **"treating specific areas of the human body, known as acupuncture points or meridians".** As a result of removing the phrase "traditional Oriental medical concepts", the definition of "Chiropractic Acupuncture" does not make sense. What the omission represents is an effort on behalf of the Chiropractic profession to distance itself from language that it unilaterally deems inconsequential to the practice of Acupuncture, as exemplified by the Restriction on Advertising, which states, "may not advertise or hold himself or herself out as employing traditional Oriental medical concepts in the practice of chiropractic acupuncture." Based on my review of the statutes, the application of acupuncture needles to acupuncture points and meridians IS ITSELF the employment of "traditional

Oriental medical concepts" as already defined under Chapter 451.01, thus "Chiropractic Acupuncture" is no different from "Acupuncture".

The same can be said for "Chiropractic Dry Needling", which is defined as "puncturing the skin of the human body with needles at trigger points to treat neuromusculoskeletal pain and performance." This is no different than Acupuncture.

AB260 would effectively create three tiers of legislative regulations where previously there had only been one - Acupuncture. Respectfully, I ask that you consider whether or not these additional regulations are necessary. Rather than create new laws, there should be an effort to update the existing practice of Acupuncture so it is current with the biomedical advancements that have been made by the Acupuncture profession on a national level over the past 25 years.

There is a growing need for updated statutory definitions that would allow acupuncturists to better communicate about Acupuncture with Physicians, legislators, and with the public. For example, the updated definition of Acupuncture that can be found on the official website of the National Center for Complementary and Integrative Health states:

- "The term "acupuncture" describes a family of procedures involving the stimulation of points on the body using a variety of techniques. The acupuncture technique that has been most often studied scientifically involves penetrating the skin with thin, solid, metallic needles that are manipulated by the hands or by electrical stimulation. Practiced in China and other Asian countries for thousands of years, acupuncture is one of the key components of traditional Chinese medicine.

The definition of Acupuncture in Chapter 451 should not be considered to be obsolete; rather, there should be clarification that the phrase "traditional Oriental medical concepts of treating specific areas of the human body, known as acupuncture points or meridians" in no way excludes a biomedical understanding of the human body.

If AB260 passes, what safety standards will be enacted to protect the public? Many public health and patient-safety provisions exist in Chapter SPS 72 of Wisconsin Administrative Code that apply to Acupuncture, but not to "Chiropractic dry needling," or "Chiropractic acupuncture", including the use of nondisposable needles, the use of topical disinfectants, and how to handle exposure to blood or body fluids.

AB260 should not be enacted. If a chiropractor wants to perform acupuncture, he or she should comply with existing Chapter 451 and become a licensed acupuncturist. Public health and safety is more important than chiropractic professional "advancement."

Thank you for your time and consideration,
Elissa Gonda, C.Ac., MCOM
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opposed

CURRENT DEFINITION OF ACUPUNCTURE

Wis. Stat. §451.01(1) defines Acupuncture as promoting, maintaining or restoring health or diagnosing, preventing or treating disease based on traditional Oriental medical concepts **of** treating specific areas of the human body, known as acupuncture points or meridians, and by performing any of the following practices:

(a) Inserting acupuncture needles.
(b) Moxibustion.
(c) Applying manual, thermal or electrical stimulation or any other secondary therapeutic technique.

PROPOSED BILL DEFINITION OF "CHIROPRACTIC ACUPUNCTURE"

17446.01 **(1f)** "Chiropractic acupuncture" means to promote, maintain, or restore health or to diagnose, prevent, or treat disease **by** treating specific areas of the human body, known as acupuncture points or meridians, by the insertion of needles or by the application of manual, thermal, or electrical stimulation or any other secondary therapeutic technique.

- This is verbatim the same definition, but manipulated in small but important ways, for its own interests.
- Chiros argue that they're not practicing Traditional Oriental Medicine. Just acupuncture. But look at how similar these two definitions are.
- Are chiros saying that they're basically *doing* the same thing, but theirs somehow isn't based in OM?
- New bill simply removed both yellow highlighted sections in an attempt to literally redefine "acupuncture." Removed the clarification of what "acupuncture" is based upon. – Trad. Oriental Med Concept
- The first definition even goes on to *clarify* the "Concept of treating specific areas of the human body, known as acupuncture points and meridians"
- In fact, the new definition keeps: "Acupuncture points and meridians," as the very areas you treat. It just conveniently omits what those two things are based upon.
- The State of WI determined by its own definition, that acupuncture is based on Oriental Medical Concepts.
- What then, is chiro acupuncture "based on" if not traditional OM concepts? How is it different from acupuncture?
- There are also NO limitations on techniques, aside from 1 (moxa), and NO restricting the practice to musculoskeletal or nerve treatment.
- So this bill gives chiropractors the *exact* scope of practice as current acupuncturists for ANY ailment.
- This undermines the vast regulations that are currently in place for licensed acupuncturists.
- What then, is the actual difference between the two practices?

American Academy of Pediatrics
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Wisconsin Chapter

American Academy of Pediatrics, Wisconsin Chapter

Position Statement

Pre-Participation Physical Exams (PPEs) for Student Athletes

Author: David Bernhardt, MD, FAAP

Revised April 24, 2017

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Background:

- The American Academy of Pediatrics recommends annual health maintenance exams for children ages Birth - 21. The number of children who actually receive annual exams drops rapidly once children reach school age and continues to fall as children move into adolescence.

- For many student athletes, a pre-participation physical examination (PPE) may be their only encounter with a health provider throughout the entire year, and as such, offers the opportunity to provide health maintenance for teens.

- A complete health maintenance exam includes a comprehensive health and developmental history, comprehensive physical exam, appropriate immunizations, laboratory tests, hearing and vision screening, and health education. The anticipatory guidance provided during annual checkups has been shown to be effective in changing a number of health-related behaviors of patients and their parents. This is especially important for adolescents, who may engage in numerous risk-taking behaviors that threaten their health and well-being. Research indicates that many adolescents want information on topics such as exercise, stress, depression, sexually transmitted infections, and weight control.

- The examination performed in the medical home allows for access to an ongoing medical record, leaving less room for error, less risk for missed or intentionally omitted medical information compared to examinations performed outside the medical home.

- Reports in the literature show that adolescent athletes often substitute the PPE for their annual exam. While the PPE is appropriate for clearing a child for sports participation, it is **not** a replacement for a complete checkup.

- Parents and student athletes may not understand that when a provider performs a PPE, they are not performing all the other components of the annual checkup.

· This is not unique to Wisconsin. Nationally, older children and adolescents are much less likely to get an annual checkup as compared to their younger counterparts. This is true regardless of insurance status.

· Regularly scheduled well-child checkups within the medical home promote healthy development and enable early identification and treatment of diseases, often before they become chronic or debilitating.

· Qualifications of the examiners: The PPE monograph 4th edition published by the AAP and written jointly by experts from these entities, and endorsed by same:

- American Academy of Family Physicians
- American Academy of Pediatrics
- American College of Sports Medicine
- American Medical Society for Sports Medicine
- American Orthopaedic Society for Sports Medicine
- American Osteopathic Academy of Sports Medicine

This monograph suggests:

· Physicians with an MD or DO degree have the clinical training and unrestricted medical license that allows them to deal with a broad range of problems encountered during the PPE. Regardless of their training, practitioners performing the PPE should competently screen athletes that would affect sport participation or place the athlete at undue risk.

· One of the key purposes of the screening exam is to screen for conditions that may be life threatening or disabling. Cardiac conditions which can lead to sudden death are rare, often have subtle findings on exam and are difficult to detect. A comprehensive cardiovascular history and examination performed by a practitioner with thorough training in these conditions is best qualified to perform the PPE.

· Although chiropractors may have the training to screen for orthopedic conditions, they do not have the training related to screening for cardiovascular conditions, they do not routinely provide growth and developmental screening, immunizations or anticipatory guidance related to adolescent risk taking behavior.

· Most chiropractors locate near primary care physicians. Granting chiropractors the ability to conduct PPEs therefore would not alleviate any access to care issues children may encounter.

Position: The Wisconsin Chapter of the American Academy of Pediatrics (WIAAP) opposes any policy that would permit chiropractors to be allowed to clear a student athlete for participation via a PPE. This expansion of the scope of practice would endanger the health of Wisconsin's students.

Sources:

American Academy of Pediatrics (AAP) State Advocacy Infographic - Pediatric Education and Training - http://bit.ly/2pe2COY

American Medical Association (AMA) Issue Brief: Chiropractic - http://bit.ly/2pe3Rhb
Advocacy Resource Center Copyright ©2012 by the American Medical Association

American Medical Association (AMA) Geomap: Wisconsin Primary Physicians to Chiropractors
http://bit.ly/2oE8b5v

National Collegiate Athletic Association (NCAA) Sports Medicine Handbook -
http://on.ncaa.com/2oEfOsq
Page 11, Guideline 1C: "Medical Evaluations, Immunizations and Records."

Preparticipation Physical Evaluation, 4th Edition
ISBN-13: 978-1-58110-376-2, May 1, 2010
American Academy of Family Physicians, American Academy of Pediatrics, American College of Sports Medicine, American Medical Society for Sports Medicine, American Orthopaedic Society for Sports Medicine, American Osteopathic Academy of Sports Medicine

Scope of Practice Issues in the Delivery of Pediatric Care - http://bit.ly/2oDUNhM
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PEDIATRICIANS

Pediatric Generalists | Pediatric Medical Subspecialists | Pediatric Surgical Specialists

are the clinicians most educated in pediatric health care and have the depth and breadth of knowledge, skills, and experience to diagnose and deliver optimal care to children

4 YEARS

Undergraduate School

PREMEDICAL COURSES

- Biology
- General Chemistry
- Organic Chemistry
- Physics
- Calculus
- Statistics

4 YEARS

Medical School

COURSEWORK

- Anatomy
- Biochemistry
- Histology
- Microbiology
- Physiology
- Pharmacology
- Pathology
- Neurobiology
- Neuroscience

CLINICAL ROTATION

- Pediatrics
- Emergency Medicine
- Family Medicine
- Internal Medicine
- Neurology
- Obstetrics-Gynecology
- Psychiatry
- Radiology
- Surgery

3 YEARS

Residency Training

CLINICAL TRAINING

- Newborns
- Newborn Intensive Care
- Inpatient General Pediatrics
- Inpatient Subspecialty Pediatrics
- Primary Care Emergency Department
- Critical Care
- Community Pediatrics
- Developmental-Behavioral Pediatrics

CORE COMPETENCIES

- Patient Care
- Medical Knowledge
- Practice-based Learning and Improvement
- Systems-based Practice
- Interpersonal and Communication Skills
- Professionalism

2–6 YEARS

Medical Subspecialty and Surgical Specialty Fellowship Training and Certifications

- Academic Medicine
- Adolescent Medicine
- Allergy and Immunology
- Anesthesiology
- Cardiology
- Child Abuse
- Child and Adolescent Psychiatry
- Critical Care
- Dermatology
- Developmental-Behavioral
- Emergency Medicine
- Endocrinology
- Gastroenterology
- Genetics
- Hematology-Oncology
- Hospice and Palliative Medicine
- Hospital Medicine
- Infectious Diseases
- Medical Toxicology
- Neonatal-Perinatal Medicine
- Nephrology
- Neurodevelopmental Disabilities
- Neurology
- Ophthalmology
- Orthopaedic Surgery
- Otolaryngology
- Pediatric Surgery
- Plastic Surgery
- Pulmonology
- Radiology
- Rheumatology
- Sleep Medicine
- Sports Medicine
- Transplant Hepatology
- Transport Medicine
- Urology

At least

12,000-14,000

patient care hours required during training

MEDICAL HOMES provide family centered, coordinated, high quality care delivered by a physician-led team.

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Issue brief: Chiropractic[1]

The American Medical Association (AMA) strongly supports the team approach to patient care, with each member of the team playing a clearly defined role in patient care, as determined by his or her education and training. This issue brief is intended to help clarify the education and training of chiropractors as compared to physicians (medical doctors and doctors of osteopathic medicine).

The AMA believes that America's patients benefit when they know the education and training of the health care professionals who provide their care. A recent survey found that more than 30 percent of patients incorrectly identified chiropractors as medical doctors. This confusion can lead to patients having misconceptions and false expectations regarding the care they receive.

Chiropractic and medical education and training compared

Medical and osteopathic school students "must cover all organ systems, and include the important aspects of preventive, acute, chronic, continuing, rehabilitative, and end-of-life care."[2] Medical students' education must prepare them "to enter any field of graduate medical education and include content and clinical experiences related to each phase of the human life cycle; and assist patients in addressing health-related issues involving all organ systems."[3] All colleges of osteopathic medicine also feature these same requirements.[4]

Chiropractic students must enter a four year Doctor of Chiropractic (DC) program with 24 semester hours of life and physical science courses.[5,6] Generally, chiropractic programs require a minimum of 4,200 hours[7] of combined classroom, laboratory, and clinical experience. Curriculum in DC programs must include course work in the following subjects, though not necessarily in individual courses for each subject: anatomy; biochemistry; physiology; microbiology, pathology; public health; physical, clinical and laboratory diagnosis; gynecology; obstetrics; pediatrics; geriatrics; dermatology; otolaryngology; diagnostic imaging procedures; psychology; nutrition/dietetics; biomechanics; orthopedics; neurology; first aid and emergency procedures; spinal analysis; principles and practice of chiropractic; clinical decision making; adjustive techniques; research methods and procedures; and professional practice ethics."[8] Standards for chiropractic education do not require individual courses for each subject.

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[1] Disclaimer: This issue brief is intended for informational purposes only, may not be used in credentialing decisions of individual practitioners, and does not constitute a limitation or expansion of the lawful scope of practice applicable to practitioners in any state.
[2] Liaison Committee on Medical Education (LCME). Functions and Structure of a Medical School. Standards for Accreditation of Medical Education Programs Leading to the M.D. Degree. May 2012.
[3] *Id.*
[4] Commission on Osteopathic College Accreditation (COCA). Accreditation of Colleges of Osteopathic Medicine: COM Accreditation and Procedures. July 2012.
[5] Council on Chiropractic Education (CCE). CCE Accreditation Standards. January 2012.
[6] Bureau of Labor Statistics. U.S. Department of Labor, Occupational Outlook Handbook, 2012-13 Edition, Chiropractors.
[7] *Supra* note 4.
[8] CCE. Standards for Doctor of Chiropractic Programs and Requirements for Institutional Status. January 2007.

Chiropractic students' clinical training includes the following[9]:

- History taking – 20 different patients (16 of whom must be non-student patients);
- Physical examination, including:
  - 20 different patients (16 of whom must be non-student patients), and
  - 15 different case types:
    - Which may be included among the 20 different patients, or
    - In which the student may assist, observe, or participate in live, paper-based, computer-based, distance-learning, or other reasonable alternative;
- Interpretations of clinical laboratory tests, including:
  - 25 urinalysis
  - 20 hematology procedures such as blood counts
  - 10 clinical chemistry, microbiology or immunology procedures or profiles on human blood and/or other body fluids;
- Interpretation of radiographic studies
  - 20 radiographic studies, and
  - 15 different case types:
    - which may be included among the 20 radiographic studies, or
    - in which the student may assist, observe, or participate in live, paper-based, computer-based, distance-learning, or other reasonable alternative;
- Diagnosis, including:
  - 20 different patients (16 of whom must be non-student patients), each with defined case management plans, and
  - 15 different case types:
    - which may be included among the 20 different patients, or
    - in which the student may assist, observe, or participate in live, paper-based, computer-based, distance-learning, or other reasonable alternative;
- Chiropractic adjustments or manipulations:
  - Including 250 chiropractic adjustments or manipulations, at least 200 of which must be spinal adjustments; and
  - Provided during 250 separate encounters (200 of whom must be non-student patients), of which at least 75 must be assessed through direct observation;
- Evaluating and case management – At least 35 cases which, due to their complexity, require a higher order of clinical thinking and integration of data[10], including:
  - At least 10 live-patient cases (8 of whom must be non-student patients);
  - In the remaining cases, the student may assist, observe, or participate in live, paper-based, computer-based, distance learning, or other reasonable alternative.

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[9] *Id.*

[10] That is, cases which demand the application of imaging, lab procedures or other ancillary studies in determining a course of care, and cases in which multiple conditions, risk factors, or psychosocial factors have to be considered.

Chiropractors must also demonstrate clinical competencies in the following areas[11]:

- History taking
- Physical examination
- Neuromusculoskeletal examination
- Psychosocial assessment
- Diagnostic Studies[12]
- Diagnosis
- Case management
- Chiropractic adjustment or manipulation[13]
- Emergency care
- Case follow-up and review
- Record keeping
- The doctor-patient relationship
- Professional issues
- Wellness
- Ethics and integrity

Chiropractic students are not required to complete a residency and do not undergo the level of subsequent training that medical and osteopathic medical students receive.

Most states require chiropractic students to pass the National Board of Chiropractic Examiners examination in order to practice. This exam includes both written portions[14] (Parts I[15], II[16], and III[17]) which and a practical portion (Part IV[18]). While Part IV is used by states to substitute for a state specific practical exam, DC candidates may not sit for the Part IV examination until after passing Part I and will not receive official transcripts from the NBCE until completing all parts.[19]

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[11] *Supra* note 7.
[12] Those elements of patient evaluation in which objective data regarding the patient's clinical status are elicited, and which include the use of diagnostic imaging, clinical laboratory, and specialized testing procedures.
[13] The chiropractic adjustment is a precise procedure that uses controlled force, leverage, direction, amplitude, and velocity directed at specific articulations. Doctors of chiropractic employ adjustive and/or manipulative procedures to influence joint and neurophysiologic function. Other manual procedures may be used in the care of patients.
[14] National Board of Chiropractic Examiners (NBCE). Written Examination: Overview. Last accessed July 24, 2012.
[15] Addresses six clinical areas: general anatomy, spinal anatomy, physiology, chemistry, pathology, and microbiology
[16] Addresses six clinical areas: general diagnosis, neuromusculoskeletal diagnosis, diagnostic imaging, principles of chiropractic, chiropractic practice, and associated clinical sciences
[17] Addresses nine clinical areas: case history, physical examination, neuromusculoskeletal examination, diagnostic imaging, clinical laboratory and special studies, diagnosis or clinical impression, chiropractic techniques, supportive interventions, and case management
[18] Tests x-ray interpretation and diagnosis, chiropractic technique, and case management
[19] NBCE. NBCE Examinee Information for the Part IV National Practical Examination.

Medical doctors / Doctors of osteopathic medicine

- 4 years undergraduate education
- 10,000+ clinical patient care hours
- 4 years medical or osteopathic medical education
- 3-7 years residency/fellowship education and training

Chiropractors

- 90 credit hours undergraduate education
- 4,200 instructional hours (combined classroom, laboratory, and clinical experience)
- 4 years chiropractic school
- No residency requirement

Physicians' and chiropractors' orthopedic education and training compared

After four years of medical school or osteopathic medical school, an orthopedic surgery residency includes five years of graduate medical education. This prepares the physician to "[d]evelop the knowledge, attitudes, and skills needed to formulate principles and assess, plan, and initiate treatment of adult and pediatric patients with surgical and/or medical problems." The physician's training emphasizes "surgical and medical emergencies, multiple organ system trauma, soft tissue wounds, nervous system injuries and diseases, peripheral vascular injuries and diseases, and rheumatologic and other medical diseases" for preventive, acute and chronic care.[20]

Physicians practicing in sports medicine are not required to complete an orthopedic surgery residency but are required to complete a 3 year non-surgery residency*[21], followed by a 1-2 year fellowship in sports medicine.[22] This residency and fellowship training does not require sports medicine doctors to become surgeons but does require orthopedic training, as well as providing additional medical and musculoskeletal training necessary to practice sports medicine.[23] A physician cannot be certified in sports medicine without completion of a fellowship.

In contrast, chiropractic education consists of two-to-four years of undergraduate education and four years of chiropractic college.[24] The training focuses primarily on spinal manipulation, with a minimum of 4,200 hours of combined classroom, laboratory and clinical experience.[25] During the first two years, most chiropractic programs include basic sciences, including anatomy, physiology, public health, microbiology, pathology, and biochemistry. The last two years focus on courses in manipulation and spinal adjustment and provide clinical experience in physical and laboratory diagnosis, neurology, orthopedics, geriatrics, physiotherapy and nutrition. While some programs include courses in sports injuries in addition to orthopedic adjustment, these

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[20] ACGME. ACGME Program Requirements for Graduate Medical Education in Orthopaedic Surgery.

* Emergency Medicine, Family Medicine, Internal Medicine, Pediatrics, Physical Medicine and Rehabilitation

[21] American Board of Medical Specialties (ABMS). Recognized Physician Specialty and Subspecialty Certificates.

[22] American Osteopathic Academy of Sports Medicine. Sports Medicine FAQ.

[23] *Supra* note 21.

[24] *Supra* note 5.

[25] *Id.*

courses are only offered as electives.[26] There is no national standard for orthopaedic course work beyond have a "curriculum [that is] structured and integrated in a manner that enables the graduate to demonstrate attainment of all required competencies necessary to function as a primary care chiropractic physician."[27]

Orthopedic surgeons' education and training

- Four years of medical or osteopathic medical education
- Five years of graduate medical education
- Covers all organ and other systems in the human body
- Differential diagnostic and pharmacologic applications integrated into every level of training

Sports medicine physicians' education and training

- Four years of medical or osteopathic medical education
- Four to five years of graduate medical education
- Covers all organ and other systems in the human body
- Differential diagnostic and pharmacologic applications integrated into every level of training

Chiropractors' education and training

- Four years of chiropractic college
- Basic sciences
- Focus on spinal manipulation
- Does not include pharmaceuticals, surgical or other invasive procedures

Physicians' and chiropractors' pharmacologic training compared

Throughout a medical or osteopathic medical student's education and training, pharmacology is integrated into the comprehensive content of biomedical sciences. The Liaison Committee on Medical Education requires all accredited medical schools to include pharmacologic study as part of disciplines including anatomy, biochemistry, genetics, immunology, microbiology, pathology, physiology, and public health sciences.[28] The Commission on Osteopathic College Education also requires all accredited colleges of osteopathic medicine to include courses in pharmacology, along with, human anatomy, biochemistry, genetics, physiology, pathology, microbiology, physical and differential diagnosis, and preventive medicine and public health.[29]

Following medical or osteopathic medical school, all physician residency programs continue to emphasize how pharmacology and pharmacotherapy may play a role in the evaluation, diagnosis and treatment of patients. The Accreditation Council for Graduate Medical Education[30] requires internal medicine residents, for example, to demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and

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[26] Information on chiropractic course work is on file with the AMA Advocacy Resource Center (ARC) and available upon request.
[27] *Supra* note 4.
[28] *Supra* note 2.
[29] COCA, Accreditation of Colleges of Osteopathic Medicine: COM Accreditation Standards and Procedures
[30] ACGME, ACGME Program Requirements for Graduate Medical Education in Internal Medicine.

social and behavioral sciences, as well as the application of this knowledge to patient care. The American Osteopathic Association places similar training and education on internal medicine residencies.[31]

Most importantly, resident physicians must demonstrate the ability to apply their knowledge of pharmacology in the care of actual patients, under the supervision of senior physicians, as they gain increasing independence in patient management.

The level of education and training of chiropractors with respect to pharmacology is quite different than that received by physicians. Chiropractic pharmacology education is typically didactic and not clinical. There is no residency component.

Legal limitations on chiropractic prescribing and administration of drugs

The lack of pharmacologic education in chiropractic training has led to differing views within the chiropractic community about chiropractic prescribing of pharmaceuticals or other substances. Some chiropractic organizations advocate for authority to prescribe pharmaceuticals, however, it is this official policy of the American Chiropractic Association that "[c]hiropractic is a drug-free, non-surgical science and, as such, does not include pharmaceuticals or incisive surgery."[32] Similarly, the International Chiropractic Association "considers the therapeutic use of drugs and surgery to be the practice of medicine."[33]

More than 40 states currently prohibit chiropractors from prescribing or dispensing medicine or drugs in some fashion. The prohibitions may be qualified in several ways. For example, Colorado[34] broadly prohibits the right to prescribe, compound, or administer drugs, or to administer anesthetics. California[35] and North Dakota[36] prohibit to any substance not in the "materia medica." Connecticut[37] allows an exception for vitamins. Florida[38] prohibits the prescription and administration of "legend" drugs. New Jersey[39] prohibits prescribing and dispensing of medicine or drugs "for any purpose whatsoever." Virginia's prohibition[40] extends to any drugs, medicines, serums or vaccines. Still other states prohibit chiropractors from dispensing drugs using certain methods.[41]

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[31] AOA. Basic Standards for Residency Training in Internal Medicine. August 2012.
[32] American Chiropractic Association.
[33] International Chiropractic Association.
[34] C.R.S. §12-33-102; C.R.S. §12-33-118. While chiropractors may claim that they only want to prescribe vitamins and extracts and enzymes, if given inappropriately, these can cause adverse consequences. Here are just a few examples. (1) Vitamin A, as found in Retinol and Accutane, is used to treat acne conditions; both can severely harm the skin if used inappropriately; pregnant women are discouraged from using either, particularly Accutane which causes birth defects. (2) Vitamin K is used to treat coagulation disorders (blood clotting or lack thereof). Used inappropriately or in the wrong dose, it can disrupt blood cell counts and cause jaundice. (3) Lipase is used to treat acute and chronic pancreatitis (inflammation of the pancreas). Used inappropriately, Lipase can cause the need to be hospitalized and/or gout, a painful joint condition that must be diagnosed early in order to be treated successfully. Appropriate treatment for any of these conditions requires an appropriate medical diagnosis and treatment plan from a practitioner with appropriate education and training. Information taken from Colorado Medical Society Fact Sheet, 2010.
[35] Cal. Bus. and Prof. Code Appendix §1000-7; 16 CCR 302.
[36] N.D. Cent. Code 43-06-01.
[37] Conn. Gen. Stat. §20-28.
[38] Fla. Stat. 460.403.
[39] N.J. Stat. §45:9-14.5.
[40] Va. Code Ann. §54.1-2900.
[41] Indiana does not permit penetration of the skin with a needle or other instrument for any reason except for blood analysis. Ind. Code Ann. §25-10-1-1; 846 IAC §1-3-1. Similarly, Mississippi prohibits chiropractors from using

Physicians' pharmacologic education and training

- Begins in medical or osteopathic medical school; continues through residency
- Emphasis on clinical application of pharmacologic interventions
- Covers all organ and other systems in the human body
- Differential diagnostic and pharmacologic applications integrated into every level of training

Chiropractors' pharmacologic education and training

- Limited to didactic overview during chiropractic education
- No residency requirement of clinical application

Physicians' and chiropractors' neurologic training compared

Neurologists

A neurologist is a medical doctor or doctor of osteopathic medicine with specialized training in diagnosing, treating, and managing disorders of the brain, spinal cord, peripheral nerves, muscles, autonomic nervous system, and blood vessels related to these structures. Pediatric neurologists specialize in the diagnosis and treatment of neurologic disorders in children from the neonatal period through adolescence. After completing medical or osteopathic medical school, a neurologist's training includes a one-year internship in internal medicine (or two years of pediatrics for pediatric neurologists), and at least three years of specialized residency training in neurology.[42, 43] Most neurologists then invest a further one to two additional years of training in a subspecialty such as epilepsy, movement disorders, or neuromuscular disease. Training and education requirements for neurology residencies are set by the Accreditation Council for Graduate Medical Education (ACGME). Fellowship and subspecialty training and education requirements are set by the ACGME, the American Osteopathic Association Board of Neurology & Psychiatry, or the United Council for Neurologic Subspecialties (UCNS). Once a neurologist passes a written examination administered by the American Board of Psychiatry and Neurology (ABPN), he or she is granted board-certified status in neurology.

As concern about concussions in youth sports has grown, the American Academy of Neurology has focused on continuing to educate neurologists how to best treat head injuries and reduce the risk of permanent injury as part of its best practices programs.[44]

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venipuncture, capillary puncture or any other invasive technique that penetrates the skin or any body orifice. Miss. Code Ann. §73-6-1. Arkansas prohibits puncturing the skin for the purpose of introducing any substance into the body. A.C.A. §17-81-102; A.C.A. §§17-81-305, 307. New Mexico does not allow invasive procedures – except as provided by the chiropractic board by rule and regulation. N.M. Stat. §61-4-2. Tennessee and Washington extend their prohibition to venipuncture. Tenn. Code. Ann. §63-4-101; ARCW 18.25.005. Texas chiropractors may only employ non-surgical, non-incisive procedures. Tex. Occ. Code §201.002. Oklahoma prohibits prescribing drugs, but allows chiropractors to possess, prescribe and administer, by needle, vitamins, minerals or nutritional supplements. 59 Okla. Stat. § 161.2. Utah also prohibits prescriptions, but allows topical administration of several agents, including steroids and anesthetics. Utah Code 58-73-102.

[42] American Association of Medical Colleges (AAMC). Careers in Medicine, Specialty Information: Neurology.

[43] American Osteopathic Association Board Certification, American Osteopathic Board of Neurology & Psychiatry.

[44] American Academy of Neurology (AAN). Sports Medicine Toolkit.

Physical medicine and rehabilitation physicians

Physical medicine and rehabilitation (PM&R) physicians (also known as physiatrists) also undergo extensive training in the treatment of neurologic conditions. Using skills developed in ACGME-accredited residency training programs and in some cases fellowship training, physiatrists diagnose and treat inpatients and outpatients with medical, musculoskeletal, neurological and neuromuscular disorders, emphasizing function, rehabilitation and quality of life. PM&R specialists treat patients of all ages with function limiting and/or painful conditions involving: central and peripheral nervous system, cardiopulmonary and musculoskeletal systems.[45] This includes but is not limited to disorders of the spine, peripheral joints, soft tissues, bone injuries, sprains/strains, disc herniations, and athletic injuries. PM&R specialists also diagnose and treat degenerative, developmental, acquired, and traumatic conditions of the upper and lower limbs, spinal cord, and brain.[46] This unique blend of education, training and experience prepares physiatrists to diagnose and treat sports-related neuromuscular injuries, including rehabilitative care of brain disorders.[47]

To become a PM&R specialist, a physician must complete four years of postdoctoral training in a physical medicine and rehabilitation residency.[48] This includes one year developing fundamental clinical skills and three additional years of training in the full scope of the specialty. Many physiatrists complete fellowship training in a specific area of the specialty. Fellowships are available for specialized study in such areas as musculoskeletal rehabilitation, pediatrics, traumatic brain injury, spinal cord injury, and sports medicine. To become board certified in physical medicine and rehabilitation, PM&R specialists must pass both a written and oral examination administered by the American Board of Physical Medicine and Rehabilitation (ABPM&R), an ABMS member board.[49] The ABPMR also has agreements with each of the boards of pediatrics, internal medicine, and neurology to allow special training programs leading to certification in both specialties.

Chiropractors

By contrast, chiropractic education consists of a shorter training program prior to chiropractic college with no additional post chiropractic college training.[50] During the first two years, most chiropractic programs include basic sciences, including anatomy, physiology, public health, microbiology, pathology, and biochemistry. The last two years include neurology among other clinical subjects with most schools requiring two to three courses in neurology/neuroscience for graduation. If the program offers additional courses, they are taken as electives, or as components of larger subjects.[51] While neurology is a tested subject on the NBCE written exam, it comprises only a small portion of the written section.[52]

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[45] American Academy of Physical Medicine and Rehabilitation (AAPM&R). Physiatric Scope of Practice. October 2009.
[46] *Id.*
[47] *Id.*
[48] www.lcme.org/
[49] www.abpmr.org/index.html
[50] *Supra* note 5.
[51] Information on chiropractic electives is on file with the AMA ARC and available upon request.
[52] NBCE. Part II: Test Plan, Neuromusculoskeletal Diagnosis.

Neurologists' education and training

- Four years of medical or osteopathic medical education
- Five to seven years of graduate medical education
- Covers all organ and other systems in the human body
- Differential diagnostic and neurologic applications integrated into every level of training

Physiatrists' education and training

- Four years of medical or osteopathic medical education
- Four years of graduate medical education
- Covers all organ and other systems in the human body
- Differential diagnostic and neurologic applications integrated into every level of training

Chiropractors' education and training

- Four years of chiropractic college
- Basic sciences with neurology included in clinical sciences program
- Focus on spinal manipulation

Physicians' and chiropractors' radiologic training compared

Radiologists must go through an extensive five year residency following medical or osteopathic medical school, consisting of a one year internship and a four year training program in diagnostic radiology.[53] A diagnostic radiology residency encompasses a variety of diagnostic and image guided therapeutic techniques, including all aspects of image-based diagnosis, (radiography, nuclear radiology, diagnostic ultrasound, magnetic resonance, computed tomography, interventional procedures, and molecular imaging).[54,55] The residency program in diagnostic radiology offers graduate medical educational experience in all of these associated disciplines.[56] Additional training is required for a subspecialty within the practice of radiology.[57]

By contrast, chiropractic education consists of a shorter training program prior to chiropractic college with no additional post chiropractic college training.[58] During the first two years, most chiropractic programs include basic sciences. The last two years include imaging among other clinical subjects. According to the Council on Chiropractic Education's standards for DC programs, a chiropractic student is required to interpret only 20 radiographic studies of 15 different case types over the course of the student's curriculum.[59] Included in this tally are cases in which the chiropractic student merely observes, or in which the student participates in distance learning; the student may "assist, observe, or participate in live, paper-based, computer-based, distance-learning, or other reasonable alternative."[60]

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[53] AAMC. Careers in Medicine, Specialty Information: Radiology. Last accessed July 25, 2012.
[54] ACGME. AGCME Program Requirements in Diagnostic Radiology. July 2008.
[55] AOA. Basic Standards for Residency Training in Diagnostic Radiology. July 2012.
[56] *Supra* note 54.
[57] *Id.*
[58] *Supra* note 5.
[59] CCE. Standards for Doctor of Chiropractic Programs and Requirements for Institutional Status. January 2007.
[60] *Supra* note 7.

A survey of chiropractic educational programs found that the majority contain multiple courses in radiology and imaging, with a mix of introductory and more advanced courses.[61] Some programs recommend extensive training that lasts throughout the chiropractor's education but there is no national standard.

With regard to certification, both a written and a practical component to the National Board of Chiropractic Examiners examination tests knowledge of radiology. On the written component, candidates must demonstrate proficiency in x-ray technology, radiographic positioning and normal anatomy, imaging diagnosis, methods of interpretation and the clinical applications of special imaging techniques.[62] On the practical component, candidates must demonstrate competency in cases that are commonly encountered in practice, those that present cautions or contraindications to chiropractic case management, and those that require early detection to preserve life/health of the patient.[63]

Radiologists' education and training

- Four years of medical or osteopathic medical education
- At least five years of graduate medical education
- Covers all organ and other systems in the human body

Chiropractors' education and training

- Four years of chiropractic college
- Basic sciences with imaging included in clinical sciences program
- Focus on spinal manipulation

Conclusion

The AMA strongly supports the team approach to patient care, with each member of the team playing a clearly defined role in patient care, as determined by his or her education and training. The AMA encourages legislators to closely examine the education and training of chiropractors – and all other non-physician health care providers who seek to expand their scope of practice – to ensure that patients' best interests are served.

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[61] Information on chiropractic course work is on file with the AMA ARC and available upon request.
[62] NBCE. Part II: Test Plan, Diagnostic Imaging. Last accessed July 25, 2012.
[63] NBCE. Practical Examination. Last accessed July 25, 2012.

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FROM THE AMERICAN ACADEMY OF PEDIATRICS

Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of all Children

POLICY STATEMENT

Scope of Practice Issues in the Delivery of Pediatric Health Care

COMMITTEE ON PEDIATRIC WORKFORCE

KEY WORDS
delegate, family physician, independent practice, medical home, pediatric nurse practitioner, pediatrician, physician assistant, nonphysician clinician, team-based care

ABBREVIATIONS
AAP—American Academy of Pediatrics
NP—nurse practitioner
PA—physician assistant

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abstract

FREE

The American Academy of Pediatrics (AAP) believes that optimal pediatric health care depends on a team-based approach with supervision by a physician leader, preferably a pediatrician. The pediatrician, here defined to include not only pediatric generalists but all pediatric medical subspecialists, all surgical specialists, and internal medicine/pediatric physicians, is uniquely qualified to manage, coordinate, and supervise the entire spectrum of pediatric care, from diagnosis through all stages of treatment, in all practice settings. The AAP recognizes the valuable contributions of nonphysician clinicians, including nurse practitioners and physician assistants, in delivering optimal pediatric care. However, the expansion of the scope of practice of nonphysician pediatric clinicians raises critical public policy and child health advocacy concerns. Pediatricians should serve as advocates for optimal pediatric care in state legislatures, public policy forums, and the media and should pursue opportunities to resolve scope of practice conflicts outside state legislatures. The AAP affirms the importance of appropriate documentation and standards in pediatric education, training, skills, clinical competencies, examination, regulation, and patient care to ensure safety and quality health care for all infants, children, adolescents, and young adults. *Pediatrics* 2013;131:1211–1216

INTRODUCTION

The American Academy of Pediatrics (AAP) advocates that every child receive high-quality, accessible, family-centered, continuous, coordinated, comprehensive care in a medical home. To this end, optimal pediatric care is best delivered in a team-based approach that is led by a primary physician, ideally a pediatrician, who assumes responsibility for managing the patient's care. All professionals who provide pediatric care must hold to the highest standards of education and training and continually demonstrate their skills and competencies.

COMPREHENSIVE TEAM-BASED CARE WITH PHYSICIAN LEADERSHIP

The provision of optimal pediatric care depends on a team-based approach to health care that is ideally led by a pediatrician. In this team-based model of pediatric care, the physician assumes overall responsibility for the care of the patient. As leader of the pediatric

health care team, the physician oversees the delivery of care and, when appropriate, delegates patient care responsibilities to nurse practitioners (NPs), physician assistants (PAs), and other valued members of the heath care team. The pediatrician who leads the health care team also determines when referral to other physicians is warranted. When patient care responsibilities must be shared by multiple providers, the pediatrician should assume primary responsibility for managing the full range of health care services to ensure continuity of care within the child's medical home.[1] For some children, a general pediatrician and a pediatric medical subspecialist or surgical specialist may decide to comanage care. The medical home's team-based model of pediatric care provides high-quality, cost-effective care by minimizing duplication of clinical effort, promoting the appropriate and timely use of all health care providers on the team, and ensuring that the care provided is accessible, continuous, comprehensive, family-centered, coordinated, compassionate, and culturally effective.[2]

UNIQUE QUALIFICATIONS OF PEDIATRICIANS

As a direct result of their extensive training and experience, pediatricians possess the broad range of competencies required to best assess and manage health issues in children. Pediatric illness runs the gamut from basic to complex, from common behavioral disorders to rare metabolic and genetic diseases. In addition, diseases that present initially as a common condition such as a cold may sometimes progress to a severe and complex illness such as pneumonia or respiratory failure. The pediatrician is the clinician most extensively educated in pediatric health care and has the depth and breadth of knowledge, skills, and experience to deliver optimal care to children.

PROFESSIONAL STANDARDS TO ENSURE SAFETY AND QUALITY CARE

The AAP supports safe, quality care for all children and their families and believes that any health care professional who wishes to actively participate in the care of children must demonstrate appropriate education, training, skills, and ongoing competencies in pediatric health within his or her scope of practice to ensure the highest standards of care. All members of the health care team should provide care consistent with their education, training, and licensure.

In recent years, the health care market has seen a significant increase in the number of nonphysician clinicians who seek to care for children. Professional associations for psychologists, pharmacists, massage therapists, physical therapists, occupational therapists, optometrists, acupuncturists, naturopaths, homeopaths, and chiropractors have actively sought expanded scopes of practice in the care of children. In an evergrowing and more complicated health care delivery system, patients and families need to know what services these clinicians are licensed and trained to provide and understand the differences in education and skills among them.

Support for such transparency is increasing and resulting in requirements that medical and health professionals be required to display or advertise their degrees, credential(s), or licenses according to a standard that is easier for consumers to understand. In addition, truth-in-advertising laws help patients distinguish between medical doctors and other health professions with doctoral degrees who are licensed to provide care.

KEY MEMBERS OF THE PEDIATRIC HEALTH CARE TEAM

For many years, pediatricians have worked closely with physicians in disciplines across the field of medicine to optimize the care of children. The AAP specifically acknowledges the key role that family physicians have played in providing care to children and the importance of their continuing collaboration with pediatricians. Pediatricians need to collaborate closely with family physicians in practice to provide pediatric support and consultation.

Nonphysician clinicians play an invaluable role in the provision of health care to infants, children, adolescents, and young adults as part of the physician-led team that provides pediatric health care. Learning to work in teams should begin in pediatric residency training, where collaborative learning with nonphysician clinicians can expose future pediatricians to the benefits of team-based care. In particular, the AAP also affirms that these nonphysician clinicians have been important participants in the care of children in the United States for many years.

PAs are educated in the medical model to provide medical care specifically under the direction and supervision of a physician. PAs must graduate from an accredited master's-level educational program that includes didactic education and clinical rotations in pediatrics and must also pass the national certifying examination administered by the National Commission on Certification of Physician Assistants. The AAP is involved in the development of educational standards and national certification for PAs through appointed representatives on the boards of the Accreditation Review Commission on Education for the Physician Assistant and the National Commission on Certification of Physician Assistants. PAs support the

concept of physician-directed, team-based care.

NPs are educated in graduate-level training programs, and the majority of NPs are certified by either the American Nurses Credentialing Center or the American Academy of Nurse Practitioners. In 7 states, national board certification is not required for licensing. The care provided by NPs can vary considerably on the basis of the laws in the state in which they practice. States may limit or deny NPs the authority to prescribe medications, to admit patients to the hospital, or to practice independently. As of 2012, more than half of the states required physician involvement (eg, collaborative practice agreement, physician delegation and supervision) for NPs to practice diagnosis and treatment and for prescriptive authority (for information on current state laws, please contact the AAP Division of State Government Affairs at stgov@aap.org).[3] Full admitting privileges for NPs would allow them to admit, provide care for, and discharge patients without physician supervision. Although NPs are rarely granted full admitting privileges, it is not uncommon for them to obtain associate privileges that permit them to admit a patient to a supervising physician. NPs can play an important role in the inpatient setting, but the AAP believes that a pediatrician should lead the health care team that is providing pediatric inpatient care.

In states that do not allow independent practice, a structured agreement with a physician is required. Recent studies have shown that even in states which allow independent practice for NPs, fewer than 15% of pediatric NPs actually choose to practice independently.[4] Regardless of the state in which they practice, the vast majority of pediatric NPs choose to practice under the supervision of general pediatricians, pediatric medical subspecialists, or pediatric surgical specialists. The AAP endorses this collaborative and structured relationship and believes this choice reflects both a shared commitment to patient safety and the positive nature of current pediatrician–NP relationships in US health care.

Of note, some reports have called for changes in the education of NPs so that they might spend additional time in clinical training and increase their likelihood of independent practice. These reports have also called for changes in the scope of practice for NPs in efforts to meet a workforce demand in areas with physician shortages.[5–7]

Considering the educational aspect, NPs generally receive a master's degree or postmaster's certificate. These NP training programs provide 500 to 720 hours of clinical training.[8] However, in 2004, the American Association of Colleges of Nursing endorsed a position statement calling for NP training programs to move the current level of preparation necessary for advanced nursing practice from a master's-level to a doctorate-level degree (eg, Doctor of Nursing Practice [DNP] or Doctor of Philosophy [PhD] in Nursing) by 2015.[9] The American Association of Colleges of Nursing's *The Essentials of Doctoral Education for Advanced Nursing Practice* (2006) recommends that programs—designed for individuals who have already acquired the competencies in *The Essentials of Baccalaureate Education for Professional Nursing Practice* (1998)—be "three calendar years, or 36 months of full-time study (including summers) or four years on a traditional academic calendar."[10] This requirement is equivalent to the currently required 3 years of graduate training for the master's degree program. Subsequently, the number of doctorate-level nursing programs in the United States has grown from 20 in 2006 to 182 in 2011.[9]

Increases in the duration of education or the final degree (eg, a DNP or PhD in Nursing) will not achieve educational parity with physicians. In comparison, with 4 years of medical school and 3 years of pediatric residency at a minimum, the pediatrician has invested between 12 000 and 14 000 clinical hours at the completion of basic pediatric training alone. Therefore, the AAP believes that pediatricians and NPs are not interchangeable in the delivery of pediatric health care.

A recent study of the geographic distribution of pediatric NPs found that the majority of states have fewer than 25 pediatric NPs per 100 000 children and that a state's independent practice laws are not related to its density of pediatric NPs.[11] In 2010, almost 85% of all NPs reported practicing in urban areas.[12] Furthermore, a recent study from the University of Washington Rural Health Research Center found no statistically significant link between states that allow NPs greater practice autonomy and higher rates of NP practice in rural areas.

Because a greater supply of NPs in a state does not necessarily lead to an equitable distribution to areas that are underserved, the AAP does not support changes in scope of practice for NPs in these areas and believes it is ill-advised to create a system of care based on independent practice without any supervision or oversight by a physician. Rather, the AAP recommends incentives for physician relocation, including loan forgiveness, payment reform, and expanded health insurance coverage for children.[13]

Some have called for an expansion of retail-based clinics as a means to increase the provision of care for children in underserved areas. However, retail-based clinics are not staffed by

physicians, and the nonphysician clinicians that are staffing these clinics often work without supervision or oversight by a physician (ie, independent practice). Also, a recent study of more than 900 retail clinics throughout the United States found that "retail clinics are currently located in more advantaged neighborhoods, which may make them less accessible for those most in need."[14] In light of its commitment to comprehensive team-based care, the AAP does not support the use of retail-based clinics for the medical care of infants, children, and adolescents.[15] Because retail-based clinics are not founded on a medical home model, use of these clinics as a source of care for children poses a significant risk for fragmentation of care, limited follow-up, missed diagnoses, and decreased quality of care overall.

SCOPE OF PRACTICE LEGISLATION

Scope of practice legislation falls under the jurisdiction of individual states. State legislatures are therefore the loci of deliberations on these issues. The competing political agendas and perspectives expressed during these deliberations often generate highly charged debates. To bring a uniformity of approach and an essential level of civility to this discourse, the AAP endorses the 2005 recommendations of the Federation of State Medical Boards regarding the approach to scope of practice legislation.[16] A portion of the Federation of State Medical Boards statement follows:

> "Changing or creating a new scope of practice for a health profession necessitates establishment of a legitimate need for the change, along with a systematic review of the impact of the proposed change on public health, safety, and welfare. Patient safety and public protection must be the primary objectives in making decisions on scope of practice. It is important for boards and legislatures to recognize that there are often significant differences in the prerequisites, the scope, and the duration of education provided to other health care practitioners when compared with that provided to physicians. Policy makers must ensure that all practitioners are prepared, by virtue of education and training, to provide the services authorized in their scope of practice in a safe, effective, and economical manner."

LIABILITY

The expansion of the scope of practice of NPs, PAs, and other nonphysician clinicians has created new challenges for physicians in all specialties in addressing professional and medical liability issues. Specific areas of risk for physicians when supervising nonphysician clinicians include improper delegation of authority, vicarious liability for medical care provided by nonphysician clinicians, and liability for nonmedical acts committed by nonphysician clinicians in which the physician is responsible for the negligent hiring, training, supervising, or retaining of the nonphysician clinicians. When delegating authority to nonphysician clinicians, physicians should consider the proper method of delegation and their oversight responsibilities for the delegated duties.

It is important that lawmakers and regulators remain attentive to the fact that a physician's ability to delegate authority is often governed by contractual limitations as well as by statutes that govern health care facilities. Moreover, health care entities, such as hospitals or managed care organizations, may not authorize the delegation of more authority than is permitted by state statutes or regulations, but they may impose limitations on the delegation of authority that are more restrictive than state laws. These policies may also be admissible in a medical liability lawsuit as evidence of the standard of care. Physicians violating such policies may risk loss of employment or revocation of privileges. Physicians and health care entities must therefore be knowledgeable about the terms of these state statutes and regulations, as well as health care entity policies, and should seek advice from a qualified attorney.

For nonphysician clinicians who practice independently of a physician, public policy should require both exclusive professional responsibility for the care they provide and adequate liability insurance to allow for appropriate financial remedy for adverse settlements or decisions. States that license nonphysician clinicians should therefore require that these nonphysician clinicians abide by the same rules regarding liability insurance as do physicians. Because physicians can be held accountable for clinicians acting under their supervision, a pediatrician should consider potential professional or medical liability issues before establishing a supervisory relationship.

CONCLUSIONS

The AAP believes that optimal pediatric care is best rendered by using a team-based approach led by a pediatrician. As the clinician most extensively educated in pediatric health care, the pediatrician has the depth and breadth of knowledge, skills, and experience to assume this role and should be held to the highest standards. Collaboration with family physicians is an important component of pediatric health care delivery, as are partnerships with nonphysician clinicians in an effort to provide safe and effective quality health care for all infants, children, adolescents, and young adults in the United States. The AAP recognizes the importance of team-based education and training. Furthermore, the AAP maintains that to ensure safe and effective care, all members of the health care team must be required to demonstrate

adequate education, training, skills, and competencies in pediatric health within their scope of practice, and all members of the health care team must provide care that is consistent with their education, training, and licensure. Patient safety and public protection must be the primary benchmarks in making any decision on changes involving the scope of practice of those who care for children.

The AAP affirms the following policy recommendations:

1. A pediatrician should serve as the leader of the pediatric health care team. This leadership role is based on the pediatrician's ability to manage, coordinate, and supervise the entire spectrum of pediatric care, from diagnosis through all stages of treatment and in all practice settings.
2. Pediatricians must assume responsibility for educating patients, families, health care purchasers, policy makers, the media, and the public about scope of practice issues.
3. Pediatricians should participate in the training and educational experiences of nonphysician pediatric clinicians, using evidenced-based and best-practice sources whenever possible. Similarly, training of pediatricians should include collaborative learning experiences in team care.
4. The AAP supports limitations on the scope of practice of nonphysician clinicians and opposes legislation that expands their scope of practice, including independent practice, hospital admitting privileges, and independent prescriptive authority.
5. Although the AAP opposes independent practice for nonphysician clinicians, in states that do allow independent practice, nonphysician clinicians acting independently of physicians should be held to the equivalent degree of professional and medical liability and abide by the same rules regarding liability insurance as would physicians.
6. To promote the highest standards of care in each state, scope of practice issues should be resolved according to the current guidelines developed by the Federation of State Medical Boards. These guidelines were designed to assist policy makers in ensuring that all practitioners are prepared, by virtue of education, training, and ongoing evaluation of competency, to provide services authorized in their scopes of practice in a safe, effective, and cost-efficient manner.
7. AAP chapters should encourage, recruit, and train their members to serve as advocates of optimal pediatric health care in state-level policy initiatives concerning nonphysician scope of practice. Such activities depend on physicians who are knowledgeable about lawmaking and policy-making processes and who have the skills necessary to be effective advocates in legislative deliberations.
8. AAP chapters and state medical and specialty societies, as well as national medical and specialty societies, should be proactive in scope of practice advocacy and should partner in informing policy makers, health care purchasers, the media, and the public about the differences in the education, skills, and knowledge of various health care professionals.

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Scope of Practice Issues in the Delivery of Pediatric Health Care

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Scope of Practice Issues in the Delivery of Pediatric Health Care

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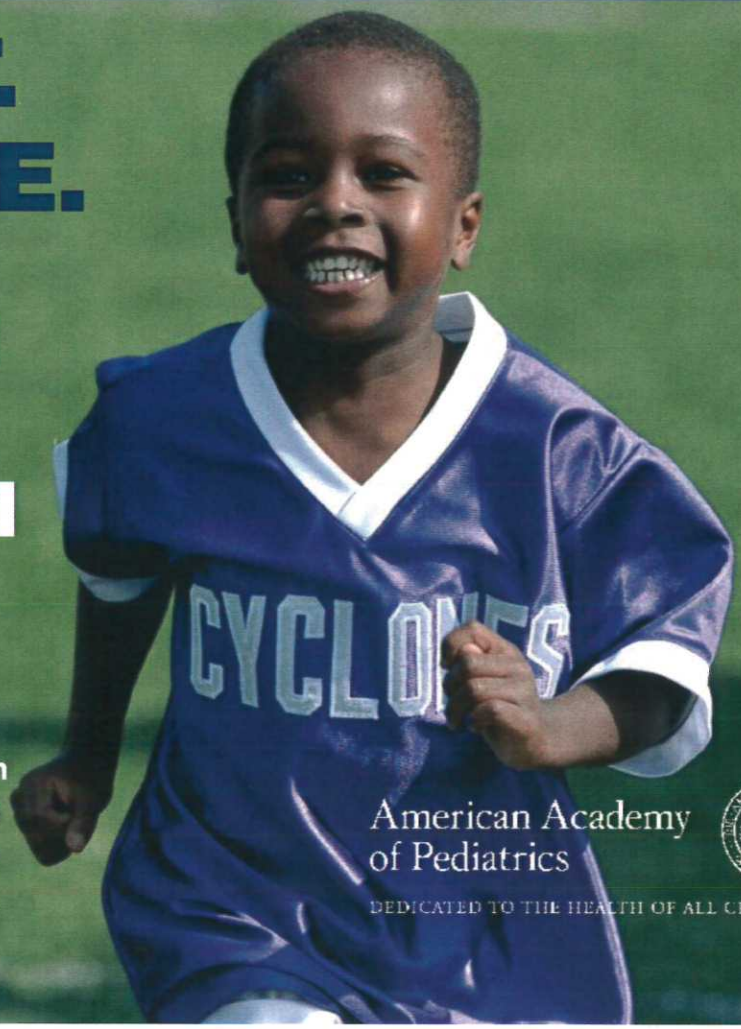
Has your child had a sports physical this year?



The goal of the sports physical, also known as the Preparticipation Physical Evaluation (PPE), is to promote the health and safety of the athlete in training and competition.

American Academy of Pediatrics

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Why should I schedule the PPE with my child's pediatrician?

- Your pediatrician can access your child's medical and family history to determine if there are any conditions that may predispose him/her to unnecessary risk during physical activity.
- Your pediatrician can provide information on injury prevention and other health concerns in the privacy of an exam room.
- The PPE can be incorporated into a routine well-child visit.

How to Prepare for the Office Visit

- Fill out the PPE History Form that is provided by the recreational club, high school or pediatrician's office.
  If you don't have a PPE form visit:
  http://www.aap.org/PPE
- Ideally the PPE should be performed at least 6 weeks before the start of practice.
- Prepare any questions you would like to ask your child's pediatrician.

For further guidance on sports topics visit:
http://www.healthychildren.org

ACSM Information On...

Pre-Participation Physical Examinations

The pre-participation physical examination (PPE) is an important step toward safe participation in organized sports. The purpose of the PPE is not to disqualify or exclude an athlete from competition, but rather to help maintain the health and safety of the athlete in training and competition.

A COMPLETE PHYSICAL ACTIVITY PROGRAM

A well-rounded physical activity program includes aerobic exercise and strength training exercise, but not necessarily in the same session. This blend helps maintain or improve cardiorespiratory and muscular fitness and overall health and function. Regular physical activity will provide more health benefits than sporadic, high intensity workouts, so choose exercises you are likely to enjoy and that you can incorporate into your schedule.

ACSM's physical activity recommendations for healthy adults, updated in 2011, recommend at least 30 minutes of moderate-intensity physical activity (working hard enough to break a sweat, but still able to carry on a conversation) five days per week, or 20 minutes of more vigorous activity three days per week. Combinations of moderate- and vigorous-intensity activity can be performed to meet this recommendation.

Examples of typical aerobic exercises are:

- Walking
- Running
- Stair climbing
- Cycling
- Rowing
- Cross country skiing
- Swimming.

In addition, strength training should be performed a minimum of two days each week, with 8-12 repetitions of 8-10 different exercises that target all major muscle groups. This type of training can be accomplished using body weight, resistance bands, free weights, medicine balls or weight machines.

The pre-participation physical examination (PPE) has the following goals:

- Identify medical and orthopedic problems that may place the athlete at risk for injury or illness;
- Identify correctable problems that may impair the athlete's ability to perform;
- Maintain the health and safety of the athlete;
- Assess fitness level for specific sports;
- Educate athletes and parents concerning sports, exercise, injuries and other health related issues; and
- Meet legal and insurance requirements.

The PPE is generally a formal requirement prior to participation in junior high, high school, college or professional sports, and interim exams are done annually if required or indicated. The qualifications of the health care professionals who perform the PPE are based on practitioner availability, clinical expertise and individual state laws. The PPE is best done in a medical setting to ensure proper equipment and appropriate privacy; however, the large number of athletes involved, limited time for the exam and deadlines for participation often require the PPE to be done in a format of multiple

"stations," with several health care providers each focusing on their areas of expertise. The PPE comprises several parts: past medical history, sport-specific history, family history and physical exam.

PAST MEDICAL HISTORY

History of any of the following should be made available to the health care provider:

- Allergies
- Asthma
- Birth defects
- Chicken pox
- Diabetes
- Eating disorders
- Glasses/contacts
- Heart murmur
- Heart problems
- Heat problems
- Hepatitis
- Hernia
- High blood pressure
- Kidney disease
- Measles
- Medications
- Menstrual history
- Mental disorders
- Mononucleosis
- Pneumonia
- Rheumatic fever
- Seizures
- Sickle cell trait or disease
- Tuberculosis

SPORTS-SPECIFIC HISTORY

History of any of the following should be made available to the health care provider:

- Orthopedic injuries (sprains, fractures, dislocations) or surgeries
- Back or neck injuries
- Dental trauma
- Chest pain with exercise
- Feeling faint or having passed out with exercise
- Excessive shortness of breath or fatigue with exercise
- "Burners" or "stingers" — caused by contact that produces burning pain that moves into the extremity
- Withholdings from participating in a sport for medical reason

FAMILY HISTORY

History of any of the following should be made available to the health care provider:

- Heart disease or high blood pressure
- Diabetes
- Unexpected death before the age of 50

PHYSICAL EXAM

The following should be checked during the physical exam:

- Pulse rate
- Blood pressure rate
- Height
- Weight
- Vision
- Hearing

EXAM BY HEALTH CARE PROVIDER

- **Head** — eyes, ears, throat, teeth, neck
- **Thorax** — heart, lungs, chest wall
- **Abdomen** — liver, spleen, kidney, intestines
- **Genitalia** — sexual maturity, testicles, hernias
- **Neurological** — reflexes, strength, coordination
- **Orthopedic** — joints, spine, ligaments, tendons, bones (pain, range of motion, strength)
- **Other exams (laboratory, electrocardiogram, x-rays)** may be done at the discretion of the health care provider.

After a thorough history and physical exam, the health care provider will make a participation decision by answering the following questions:

- Is there a problem that places the athlete at increased risk of injury?
- Is any other participant at risk of injury because of this problem?
- Can the athlete safely participate with treatment of the problem?
- Can limited participation be allowed while treatment is indicated?
- If clearance is denied for certain activities, in what activities can they safely participate?
- Is consultation with another healthcare provider necessary to answer the above question?

Restriction from participation must be made based upon the best medically objective evidence on an individual basis, and it is determined with the musculoskeletal, cardiac and aerobic demands of the proposed activity in mind. If clearance is denied, recommendations for correction prior to participation should be communicated and a follow-up evaluation should be scheduled. If acute illnesses or correctable conditions are resolved, clearance should be given. Although the PPE may identify health problems or needs not associated with exercise, it should not be used to replace ongoing medical care or routine check-ups with primary care physicians.

STAYING ACTIVE PAYS OFF!

Those who are physically active tend to live longer, healthier lives. Research shows that moderate physical activity – such as 30 minutes a day of brisk walking – significantly contributes to longevity. Even a person with risk factors like high blood pressure, diabetes or even a smoking habit can gain real benefits from incorporating regular physical activity into their daily life.

As many dieters have found, exercise can help you stay on a diet and lose weight. What's more – regular exercise can help lower blood pressure, control blood sugar, improve cholesterol levels and build stronger, denser bones.

THE FIRST STEP

Before you begin an exercise program, take a fitness test, or substantially increase your level of activity, make sure to answer the following questions. This physical activity readiness questionnaire (PAR-Q) will help determine if you're ready to begin an exercise routine or program.

- Has your doctor ever said that you have a heart condition or that you should participate in physical activity only as recommended by a doctor?
- Do you feel pain in your chest during physical activity?
- In the past month, have you had chest pain when you were not doing physical activity?
- Do you lose your balance from dizziness? Do you ever lose consciousness?
- Do you have a bone or joint problem that could be made worse by a change in your physical activity?
- Is your doctor currently prescribing drugs for your blood pressure or a heart condition?
- Do you know of any reason you should not participate in physical activity?

If you answered yes to one or more questions, if you are over 40 years of age and have recently been inactive, or if you are concerned about your health, consult a physician before taking a fitness test or substantially increasing your physical activity. If you answered no to each question, then it's likely that you can safely begin exercising.

PRIOR TO EXERCISE

Prior to beginning any exercise program, including the activities depicted in this brochure, individuals should seek medical evaluation and clearance to engage in activity. Not all exercise programs are suitable for everyone, and some programs may result in injury. Activities should be carried out at a pace that is comfortable for the user. Users should discontinue participation in any exercise activity that causes pain or discomfort. In such event, medical consultation should be immediately obtained.

AMERICAN COLLEGE of SPORTS MEDICINE
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American Academy of Pediatrics
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POLICY STATEMENT

Pediatric Sudden Cardiac Arrest

abstract

FREE

Pediatric sudden cardiac arrest (SCA), which can cause sudden cardiac death if not treated within minutes, has a profound effect on everyone: children, parents, family members, communities, and health care providers. Preventing the tragedy of pediatric SCA, defined as the abrupt and unexpected loss of heart function, remains a concern to all. The goal of this statement is to increase the knowledge of pediatricians (including primary care providers and specialists) of the incidence of pediatric SCA, the spectrum of causes of pediatric SCA, disease-specific presentations, the role of patient and family screening, the rapidly evolving role of genetic testing, and finally, important aspects of secondary SCA prevention. This statement is not intended to address sudden infant death syndrome or sudden unexplained death syndrome, nor will specific treatment of individual cardiac conditions be discussed. This statement has been endorsed by the American College of Cardiology, the American Heart Association, and the Heart Rhythm Society. *Pediatrics* 2012;129:e1094–e1102

SECTION ON CARDIOLOGY AND CARDIAC SURGERY

KEY WORDS

syncope, cardiovascular disease, long QT, cardiomyopathy, athlete, heart disease

ABBREVIATIONS

AAP—American Academy of Pediatrics
AED—automated external defibrillator
AHA—American Heart Association
CPR—cardiopulmonary resuscitation
CPVT—catecholaminergic polymorphic ventricular tachycardia
ECG—electrocardiography
EMS—emergency medical services
HCM—hypertrophic cardiomyopathy
LQTS—long QT syndrome
PPE—preparticipation evaluation
SCA—sudden cardiac arrest
SIDS—sudden infant death syndrome
VF—ventricular fibrillation

INCIDENCE OF PEDIATRIC SUDDEN CARDIAC ARREST

In the United States, there is no centralized or mandatory registry for pediatric sudden cardiac arrest (SCA). Available data generally are collected through media reports, from lay SCA advocacy groups, or from peer-reviewed publications, often from major referral medical centers. Episodes of resuscitated cardiac arrest (aborted cardiac death) are even more difficult to document retrospectively. The Centers for Disease Control and Prevention has estimated that every year in the United States, approximately 2000 patients younger than 25 years will die of SCA.[1] Other older reports estimate the frequency of SCA in children and adolescents to be between 0.8 and 6.2 per 100 000 per year.[2–6] Two studies suggest that the frequency of SCA in adolescents and young adults actually may be increasing.[7,8] Although SCA occurs even at young ages and at rest, the likelihood of child and young adult SCA for those with underlying cardiovascular disease is increased by athletic participation.[9] Nonetheless, 2 studies from Maron et al[10,11] estimate fewer than 100 cases of SCA in young US competitive athletes each year. An Italian study reported a baseline incidence of SCA in young competitive athletes at 1:25 000 before implementing a national screening program.[12] Corrado et al identified a 2.5 times relative risk for SCA attributable to sports activity in adolescent and young adult athletes versus an age-matched nonathletic population,[13] related to underlying cardiac disorders.

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Reporting and referral biases affect our knowledge of SCA incidence. The difficulty in determining cause of death in patients with primary cardiac electrical disorders (so-called "autopsy negative") must be acknowledged. Many of these now recognized electrical disorders have been described only recently, confounding older literature that details the cause of pediatric SCA identified at autopsy.

CARDIAC DISORDERS PREDISPOSING YOUTH TO SCA

Underlying cardiac disorders associated with pediatric and young adult SCA are listed in Table 1. In general, causes can be considered (1) structural or functional (expected to be identified with echocardiography or at autopsy); (2) primary electrical (most commonly associated with structurally and functionally normal hearts); or (3) other, including use of illicit drugs and stimulants (eg, cocaine, ephedra) or prescription medications (eg, erythromycin, ketoconazole, carbamazepine). The reader is directed to reference texts and previous publications for more detail about each of these individual conditions.[14,15]

TABLE 1 Cardiac Disorders Predisposing to Pediatric and Young Adult SCA

Structural/functional
1. Hypertrophic cardiomyopathy[a]
2. Coronary artery anomalies
3. Aortic rupture/Marfan syndrome[a]
4. Dilated cardiomyopathy or restrictive cardiomyopathy[a]
5. Myocarditis
6. Left ventricular outflow tract obstruction
7. Mitral valve prolapse
8. Coronary artery atherosclerotic disease
9. Arrhythmogenic right ventricular cardiomyopathy[a]
10. Postoperative congenital heart disease
Electrical
11. LQTS[a]
12. Wolff-Parkinson-White syndrome
13. Brugada syndrome[a]
14. Catecholaminergic polymorphic ventricular tachycardia[a]
15. Short QT syndrome[a]
16. Complete heart block
Other
17. Drugs and stimulants; some prescription medications
18. Primary pulmonary hypertension[a]
19. Commotio cordis

[a] Familial/genetic.

GENETICS OF PEDIATRIC SCA

The identification of disease-causing genetic mutations is progressing rapidly in all areas of medicine. Evaluation of large cohorts of ostensibly healthy individuals has begun to catalog the common polymorphisms and the background rate of rare genetic variants of uncertain significance within the general population. For cardiac disease, the science of genotypic evaluation has not yet advanced to the point at which genotype alone (isolated from clinical phenotypic description) can routinely and accurately risk stratify for clinical outcome. Many cardiac disorders, including hypertrophic cardiomyopathy (HCM) and the cardiac ion channelopathies, are known to be genetic.[16,17] Several studies have documented the efficacy of genetic testing of first-degree relatives of persons who have died of SCA. A 2003 study[18] reported cardiac symptoms in 27% of surviving relatives, with a 22% incidence of unexpected premature sudden death in addition to the proband in any relative and a 6% incidence of sudden death in a first-degree relative. After evaluating 49 cases of young autopsy-negative SCA, Tester and Ackerman[19] reported 17 cases with genetic/molecular evidence for long QT syndrome (LQTS) or catecholaminergic polymorphic ventricular tachycardia (CPVT) disease–causing mutations; 9 (53%) of these cases had a family history of SCA or syncope documented by the medical examiner. A personal history of syncope, seizure, or previous cardiac arrest was detailed for 7 individuals whose deaths were attributable to SCA. In a 2005 report, genetic testing established a likely cause of death in 17 of 43 autopsy-negative persons (40%). Genetic testing of family members revealed an additional 151 presymptomatic and undiagnosed disease carriers (average of 8.9 per family).[20]

Recognizing the genetic nature of many of the disorders listed in Table 1, the role of a detailed, comprehensive family history (and considering consultation with an expert in cardiac genetics) is readily apparent. The primary goal is prospective identification of any family member, even if asymptomatic, who is genotypically or phenotypically affected by a disease entity predisposing a person to SCA. A 2008 publication discusses the role of family history for evaluating cardiomyopathy and ion channelopathies predisposing people to SCA.[21] A 3-generation pedigree as a family history tool is highly effective for clinical evaluation; a family history template suggested by the US Surgeon General's Family History Initiative is available free at www.hhs.gov/familyhistory.

WARNING SIGNS AND SYMPTOMS

Although SCA may be the sentinel event, symptoms in patients with structural-functional or primary electrical disorders may, in fact, be relatively common before SCA. Often, these warning signs or symptoms may be misinterpreted or disregarded by both family members and medical personnel. These points were emphasized in a 1996 publication[22] that summarized 9 previous studies. Preceding symptoms of dizziness, chest pain, syncope, palpitations, or dyspnea and a family history of premature, unexpected sudden death were noted in 25% to 61% of the study population. Deaths were exertion-related in 8% to 33% of cases. A study of 162 young persons (15–34 years of age)[23] undergoing autopsy evaluation after SCA found 92

cases with a history of syncope/presyncope, chest pain, palpitations, or dyspnea; 26 of these subjects had a family history of SCA. In a study of natural death in people 5 to 35 years of age,[24] the most common cause of sudden death was presumed arrhythmia in those with no or minimal heart disease (29%). Eleven percent of cases were exercise-associated. A history of SCA was reported in 4.5% of first-degree relatives of the descendents. Importantly, symptoms may be nonspecific and confusing in athletes, who may overexert until physical exhaustion.

In most cases, the immediate cause of SCA is a lethal ventricular tachyarrhythmia (ventricular fibrillation [VF] or pulseless ventricular tachycardia) causing cardiac collapse. Some of these arrhythmias (eg, torsades de pointes, the characteristic tachyarrhythmia associated with LQTS) may be short lived and self-terminating, causing episodes of syncope/presyncope or episodes of seizure-like activity.[19,22–25] These neurologic signs and symptoms may direct referral to a neurologist, inadvertently misdirecting the patient away from cardiac evaluation and, thus, delaying correct diagnosis and treatment. These tachyarrhythmia-associated SCA events must be distinguished from the well-recognized but poorly understood entity called sudden unexpected death in epilepsy.[26,27] In the latter, this primary neurologic event may cause a cardiac death, mediated through abnormalities of cardiovascular autonomic function.[28] Chest pain is almost never present in patients with primary electrical disorders but is more likely in patients with cardiomyopathies,[29,30] congenital coronary artery abnormalities,[31] or aortic disease (eg, dissection or rupture associated with Marfan syndrome[32]). Other nontypical cardiac presentations also may misdirect patients to other consulting medical subspecialties. Symptoms suggestive of exercise-induced bronchospasm may be present in patients with HCM and dilated or restrictive cardiomyopathy. Cardiomyopathy-associated wheezing is attributable to decreased left ventricular compliance, mitral insufficiency, or pulmonary venous hypertension with pulmonary edema. Failure of empirical exercise-induced bronchospasm medication or normal pulmonary function testing should prompt cardiovascular evaluation. Drowning or near-drowning has been associated with LQTS and CPVT.[33,34] Approximately 5% to 10% of sudden infant death syndrome (SIDS) cases may stem from channelopathic mutations in genes associated with LQTS, Brugada syndrome, and CPVT.[35–38] Congenital deafness has been noted in some types of LQTS.[39] Patients with congenital deafness should be evaluated for LQTS if the deafness is not otherwise associated with another recognized syndrome or anomaly. Febrile seizures may be a presenting sign of children affected with Brugada syndrome.[40]

SCREENING TECHNIQUES

The role of any screening effort is to identify individuals at risk; unaffected or low-risk individuals should be cleared, and conversely, those affected should be appropriately restricted counseled, and treated. Not all SCAs can be foreseen, even in the best of circumstances. No screening protocol has yet proven to be effective in this role or validated as highly effective.

Sports Preparticipation Evaluation and Cardiovascular Risk Assessment

As noted by aforementioned studies, it is estimated that as many as half of pediatric SCA cases exhibited a personal/familial sudden death warning sign or symptom (such as previous exercise-triggered faint or family history of premature unexplained sudden death). Thus, there is an opportunity to identify individuals at risk for pediatric SCA without technology-based screening programs, such as the 12-lead electrocardiography (ECG) and echocardiography; however, despite the aforementioned data supporting the fact that preceding warning signs and symptoms may be present in many patients and families at risk for SCA, most published studies have not substantiated the efficacy of current athletic preparticipation evaluation (PPE) processes. Only 3% of 158 athletes with SCA were suspected of having cardiovascular disease using a PPE screen, leading the authors of a 1996 study to conclude that "pre-participation screening appeared to be of limited value for identification of underlying cardiovascular abnormalities."[41] The 1996 study was retrospective, and the details of the PPE questionnaire used and the adequacy of PPE were not reported. This report also predated description of some of the disease entities now known to cause pediatric SCA. More recently, an investigation from the United Kingdom concluded that family history and personal symptom questionnaire alone were inadequate for identification of at-risk patients and families.[42] The 2008 UK study used a comprehensive PPE format and trained examiners, with little reported benefit, which reveals the potential failure of a single PPE at 1 point in time.

In contrast to a single PPE initiated only before athletic participation, a more thorough cardiovascular risk-assessment process, applied throughout childhood and adolescence (the continuum of well-child care), can be provided for any patient, of any age, by any care provider (Table 2). Patient and family histories can and do change over time, necessitating an update of information for the care provider. Families should be encouraged to provide complete and

TABLE 2 Pediatric Sudden Cardiac Death Risk Assessment Form

	Yes	No
Patient history questions: Tell me about any of these in your child...		
Has your child fainted or passed out during or after exercise, emotion, or startle?		
Has your child ever had extreme shortness of breath and/or discomfort, pain, or pressure in his or her chest during exercise?		
Has your child had extreme fatigue associated with exercise (different from other children)?		
Has a doctor ever ordered a test for your child's heart?		
Has your child ever been diagnosed with an unexplained seizure disorder? Or exercise-induced asthma not well controlled with medication?		
Family history questions: Tell me about any of these in your family...		
Are there any family members who had a sudden, unexpected, unexplained death before age 50 (including SIDS, car crash, drowning, others) or near-drowning?		
Are there any family members who died suddenly of "heart problems" before age 50?		
Are there any family members who have had unexplained fainting or seizures?		
Are there any relatives with certain conditions, such as:		
Enlarged heart: HCM		
Dilated cardiomyopathy		
Heart rhythm problems: LQTS		
Short QT syndrome		
Brugada syndrome		
Catecholaminergic ventricular tachycardia		
Arrhythmogenic right ventricular cardiomyopathy		
Marfan syndrome (aortic rupture)		
Heart attack, age 50 or younger		
Pacemaker or implanted defibrillator		
Deaf at birth (congenital deafness)		
Please explain more about any "yes" answers here:		
Parent signature:		
Physician signature:		
Date:		

Ask these questions (or have parents complete for your review) at periodic times during well-child visits (neonatal, preschool, before or during middle school, and before or during high school).

accurate responses concerning history. PPE screening of athletes exclusively omits >25 million US schoolchildren who do not participate in sports. Postponing cardiovascular risk assessment until a more formal high school or collegiate athletic PPE screen also will delay detection of patients and families at risk for SCA before high school. For any PPE or cardiovascular risk assessment to succeed, medical providers must be aware of sudden death warning signs and symptoms and respond appropriately with comprehensive cardiovascular evaluation, referral, treatment, and activity restrictions as appropriate. The use of competent and qualified examiners is still a necessity, but recent data reveal that 35% of states allow nonphysicians with little cardiovascular training to perform the screening evaluations.[43]

The American Heart Association (AHA) has documented a 12-element recommendation for preparticipation screening of competitive athletes.[44] Another PPE, sponsored and endorsed by the American Academy of Pediatrics (AAP) and 5 other agencies, is now widely used throughout the United States for childhood and adolescent athletic PPE.[45] This document acknowledges the wide variation in physician competencies and documentation for PPE examinations. Many states have endorsed the use of this PPE to eliminate unnecessary variability and to more effectively screen for cardiovascular risk. The updated fourth edition of this PPE form became available in April 2010.

None of the aforementioned PPEs or cardiovascular risk-assessment tools have been validated but serve as standard templates for more comprehensive screening. Likewise, no true sensitivity or specificity data exist for prediction of risk of SCA by PPE. Among the many warning signs and symptoms, the following 4 appear to represent more ominous positive responses (based on expert opinion):

1. Have you ever fainted, passed out, or had a seizure suddenly and without warning, especially during exercise or in response to auditory triggers such as doorbells, alarm clocks, and ringing telephones?
2. Have you ever had exercise-induced chest pain or shortness of breath?
3. Are you related to anyone with sudden, unexplained, and unexpected death before the age of 50?
4. Are you related to anyone who has been diagnosed with a sudden death–predisposing heart condition such as HCM, LQTS, Brugada syndrome, and so forth? (See Table 1.)

Once a cardiovascular disorder listed on Table 1 is suspected or diagnosed, referral to and management by pediatric/adult cardiologists or heart rhythm specialists experienced with the particular sudden death–predisposing heart condition is crucial.

Another important time, resource, and cost-benefit issue centers around obtaining the detailed and accurate cardiovascular risk assessment or PPE forms in the primary care office setting. This time-consuming process is currently poorly reimbursed and difficult to prioritize and validate in a busy practice.

ECG Screening

Although some data suggest that SCA screening may be enhanced with the addition of ECG, broad-scale ECG screening has not been tested or implemented in the United States. Mandatory screening of Japanese schoolchildren since 1973[46,47] has demonstrated a greater sensitivity of ECG versus history and physical examination. Competitive Italian athletes undergo required PPE and ECG, with ECG reportedly demonstrating 77% greater power to detect HCM

than history and physical examination alone.[2] Italy also has reported a newborn ECG screening program to identify infants at risk for SIDS secondary to abnormal cardiac repolarization.[48] For Olympic athletes, the International Olympic Medical Committee issued a screening protocol including ECG in 2004.[49] A 2005 European Society of Cardiology consensus statement on cardiovascular preparticipation screening of young competitive athletes recommends 12-lead ECG in addition to focused history and physical examination.[50] Some US studies have suggested that ECG screening may be cost-effective on the basis of estimated cost per year of lives saved.[51,52]

The 2007 AHA scientific statement/screening guidelines[44] (coauthored by S.B. and M.J.A.) did not recommend standard ECG assessment, however, citing false-positive and false-negative results, cost-effectiveness, feasibility, and medicolegal concerns. Wide-scale ECG screening would require a major infrastructure enhancement not currently available in the United States. Recent reassessment of ECG "normal" values has helped to decrease false-positive findings.[53] Competitive athletes are known to have unusual but occasionally benign ECG findings, consistent with "athlete's heart," that must be differentiated from ECG findings attributable to pathologic conditions.[54]

The role of routine ECG screening in the United States to prevent SCA is not settled and will require more data and debate. Readers are referred to recently published debates of the subject for further details.[55,56]

Molecular Autopsy

The genetic nature of many cardiac ion channelopathies predisposing youth to pediatric SCA is being defined rapidly.[17] When children die suddenly, there may be no previous evaluation or diagnosis. Conventional autopsies often fail to identify a condition responsible for sudden death. These autopsy-negative cardiac conditions have previously defied complete definition. As already described, complete evaluation of a child who died of SCA through detailed clinical and targeted genetic testing of immediate family members may identify specifically the cause of SCA and direct appropriate care and genetic counseling to surviving family members. The cardiac channel postmortem genetic analysis (also known as "molecular autopsy")[57] remains a research test but soon may evolve into a standard clinical practice. Unfortunately, current standards of care for autopsy do not yet ensure that a postmortem sample suitable for DNA analysis is retained. Further, despite the evidence that approximately 25% to 35% of autopsy-negative sudden unexplained death is channelopathic, health insurance companies currently do not accept responsibility for molecular autopsy of the deceased in the United States. The cost would befall the medical examiner and, ultimately, the community; however, far more expensive testing of all first-degree surviving family members currently is used clinically and reimbursed. An important next step will be the development of guidelines at a public health level for postmortem genetic testing.

PRIMARY PREVENTION OF SCA

Primary prevention of SCA depends on patient diagnosis, specific etiology, and etiology-specific treatment. Treatment options include but are not limited to medical therapy, device therapy (eg, pacemakers, internal cardioverter defibrillators), activity-restriction guidelines, avoidance of certain classes of medications, and family emergency preparedness. The details of primary prevention, given that they are etiology specific and prescribed by a consulting cardiologist, are beyond the scope of this policy statement.

SECONDARY PREVENTION OF SCA

When SCA primary prevention strategies (ie, patient identification, treatment, activity restriction, and counseling) have failed, SCA still may occur, and secondary prevention (resuscitative) efforts are required. The AHA has proposed a "chain-of-survival"[58] beginning with early symptom recognition and 911 emergency medical services (EMS) contact, followed by effective bystander cardiopulmonary resuscitation (CPR), early defibrillation, and finally, advanced hospital care. The published outcomes for out-of-hospital pediatric cardiac arrest are dismal; survival to hospital discharge occurs in approximately <10% of children, and many have severe neurologic sequelae.[59–63] Poor outcomes may be related to prolonged periods of no cardiac output, in part because many out-of-hospital arrests are unwitnessed, and only approximately 30% of children received bystander CPR[61] (note also that bystander CPR more than doubles patient survival rates[64]).

Bystanders report that they do not perform CPR because of panic or fear of failure[65] and unwillingness to perform mouth-to-mouth rescue breathing. Recent studies suggest that "compression-only" CPR may be more effective than standard CPR with ventilation,[66,67] by using faster (approximately 100 per minute) and deeper compressions, in adults for witnessed nonasphyxial arrest (arrest not secondary to, for example, drowning, hanging, or carbon monoxide poisoning). To date, there are no pediatric studies with respect to compression-only CPR. Because pediatric patients are more likely to experience respiratory arrests, compression only may not be suitable. Two studies report VF as the initial rhythm in 19% to 24% of out-of-hospital pediatric cardiac arrests, excluding deaths attributable to SIDS.[68,69] VF and ventricular tachycardia generally have been considered more favorable initial SCA rhythms than

either asystole or pulseless electrical activity, with a higher rate of survival to hospital discharge, when prompt defibrillation (termination of VF) and return of an organized perfusing rhythm is achieved. As part of the chain of survival, public access defibrillation using automated external defibrillators (AEDs) has a prominent role.[70] Data from witnessed VF arrest in adults show that appropriate use of AEDs can lead to long-term survival rates >70%.[71,72] AEDs have now been recommended for children younger than 8 years,[73,74] with still insufficient scientific evidence to warrant official recommendation for or against AED use in children aged 1 year or younger. A 2007 AAP policy statement addressed current pathophysiology of VF and recommendations for AED use in children; readers are referred to this publication for further detail.[75]

SCHOOL AED PROGRAMS

The average school-aged child spends 28% of the day and 14% of his or her total annual hours in school.[76] In addition, adults (parents, grandparents, teachers, staff, and visitors) crowd our schools. As an area of higher traffic, schools have become sites for implementation of AED programs. In 1 report, 67% of schools activate EMS for an emergency involving a student, and 37% activate EMS for an emergency involving an adult.[76] A 2007 report detailed a 16-year history of SCA in Seattle city and King county schools, providing a framework for reasonable and rational school-based emergency programs.[77]

A growing number of states have mandated school AED programs. The cost-effectiveness of school AED programs has been reported by Berger et al.[78] Key components for a comprehensive school-preparedness program include education and all-staff awareness, knowledge and application of effective bystander CPR techniques, implementation of a lay-rescuer AED program, and written emergency action plans,[79] with all steps reinforced with effective communication throughout the school campus and periodic practice drills. Current principles guiding this recommendation for schools, primary clinicians, and school physicians have been detailed in the AAP policy statement "Medical Emergencies Occurring at School."[80] At this time, there are no published data to support the efficacy of home AEDs.[81]

RECOMMENDATIONS FOR PEDIATRIC CARE PROVIDERS

Evidence-based recommendations frequently are designated as class I, II, or III, indicating the supporting level of evidence. For pediatric SCA, the level of evidence does not permit a meaningful use of this terminology. This statement has been endorsed by the American College of Cardiology, the American Heart Association, and the Heart Rhythm Society.

All steps in the primary and secondary SCA-prevention strategies should be optimized if pediatric SCA is to be prevented.

RECOMMENDATIONS

Important steps for consideration include:

1. Recognize the warning signs and symptoms of SCA, including those that may "misdirect" initial evaluation to noncardiac specialties and, thus, delay correct diagnosis.
2. Understand the role of comprehensive and accurate family history and pedigree for preventing SCA stemming from inherited cardiac genetic disorders.
3. Use standardized PPE forms and processes to minimize unnecessary variation.
4. Ensure that identified patients and/or families with known or suspected cardiac disorders are referred to a pediatric cardiac center for further comprehensive evaluation and management. Appropriate secondary testing may include ECG, echocardiography, exercise testing, or genetic testing, as indicated.
5. Advocate for autopsy evaluation by a medical examiner familiar with rarely encountered heritable cardiac diseases causing SCA when pediatric SCA occurs. Procurement of and retention of DNA-bearing tissue for subsequent molecular autopsy should be encouraged for autopsy-negative cases.
6. Support education programs for effective bystander CPR and appropriate AED use.
7. Support development of effective school emergency response programs.
8. Consider participation in school emergency response programs as a medical director.
9. Support efforts to mandate a central registry for pediatric SCA as a reportable event.
10. Support recommendation for evidence-based evaluation of national screening processes and programs.

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Disclosures

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Michael J. Ackerman	• Biotronik • Boston Scientific • Medtronic • St. Jude Medical, Inc	None	None	None	None	None	Transgenomic*
Robert Campbell	None	None	None	None	None	None	
Stuart Berger	None	None	None	None	None	None	

* Significant (greater than $10 000) relationship.

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Pediatric Sudden Cardiac Arrest

SECTION ON CARDIOLOGY AND CARDIAC SURGERY

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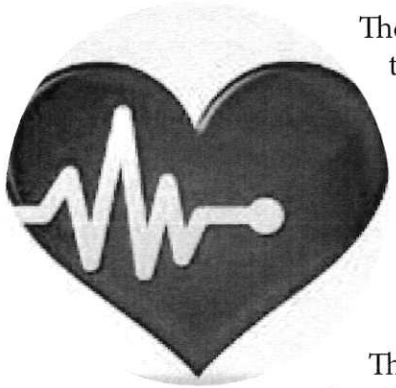
AMSSM Issue Brief: Sudden Cardiac Arrest

Sudden cardiac arrest (SCA) is the leading killer of exercising student-athletes in the U.S., and studies show that student-athletes are at higher risk than other youth.



The ability of screening to identify at-risk student athletes varies widely. Pre-participation physical exams (PPE) or sports physicals alone are extremely poor at identifying cardiovascular conditions that could lead to sudden death. The addition of an electrocardiogram or other tests to the sports physical increases the ability to detect these conditions but even these additional tests do not catch everyone. Raising awareness of SCA-related signs and symptoms and ensuring proper protocols are in place once a student-athlete displays those symptoms is the "universal precaution" that will protect the greatest number of students.

The AMSSM supports legislation that will provide real protection of student-athletes, raise awareness of SCA, and provide the tools and training to coaches and students to increase the chances of survival should a student develop SCA.

AMSSM supports:

• Legislation that raises awareness of SCA through mandatory education programs and materials for coaches, student-athletes and parents. Education is critical. Some students may display symptoms such as fainting prior to SCA that can be disregarded as non-life threatening. Awareness will decrease the chances of symptoms being ignored and increase the likelihood that other symptoms aren't missed.

• Clinically-appropriate pre-participation screening, led and performed by physicians, as the best way to evaluate risks before student-athletes step onto the field. Screening decisions should not involve blanket mandates, should take into account the population being screened, and ultimately should be left to the discretion of the screening physician.

• Legislation that requires mandatory reporting of all sudden cardiac events in young people. Doing so will allow us to begin to develop a clearer picture of the relative causes of, and incidence of sudden cardiac arrest in the student population.

• Legislation promoting placement of automated external defibrillators and certified athletic trainers in schools, as well as support for CPR certification as a requirement for high school graduation. In cardiac arrest, minutes matter. Survival rates decrease about 10% per minute that electrical shock is delayed. It is vital for those affected by SCA to be in the presence of people who know the cardiac chain of survival and have access to the necessary equipment to save those lives.

• Legislation requiring that schools develop emergency action plans, as well as encouraging these institutions to include team physicians in the creation of those plans. When applicable, the team physician should be recognized as the lead medical professionals on site.

AMSSM has thousands of physician members around the country who are fully-qualified and willing to serve as resources for state legislators and regulators who are interested in updating their sports medicine-related legislation or developing appropriate continuing medical education programs. Please contact AMSSM's Practice and Policy Committee at practicepolicy@amssm.org to get a referral to an AMSSM member in your area.

Chairman Sanfelippo and members of the committee,

My name is MacPherson Worobec and I am opposed to AB260. I am a state Certified Acupuncturist, I serve on the Board of Directors for the Wisconsin Society of Certified Acupuncturists, and I am a member of the Legislative Committee for the Wisconsin Society of Certified Acupuncturists. I hold a Master of Science degree in Oriental Medicine.

AB 260 will likely create a negative economic impact for Certified Acupuncturists, particularly those who have just graduated. In Wisconsin, chiropractic services are an Essential Health Benefit and are covered under United Choice Pro and many other insurance plans. Nationally, chiropractic services qualify for coverage under the Social Security Act, and public insurance programs such as Medicare and Medicaid. Acupuncture does not yet have these qualifications. If Chiropractic Acupuncture is written into law, it would likely become a billable procedure - by Chiropractors - under the health insurance plans in which they are already a part. If insurance covers part or all of the cost of acupuncture by a Chiropractor, patients may elect to receive acupuncture services from a Chiropractor for financial reasons, not because the Chiropractor is a highly qualified provider of Acupuncture. This will create a negative economic impact on Certified Acupuncturists.

Moreover, as Chiropractors are already in network with all Wisconsin private and public health insurance plans, they could beat out acupuncturists from gaining the always limited spots in provider networks, should acupuncture ever gain status as a state Essential Health Benefit or qualification to bill Medicare and Medicaid. This is currently occurring with Medical Acupuncturists in the Physican's Plus provider network in Madison. Certified Acupuncturists unable to provide acupuncture services in insurance networks will not only create a negative economic impact on Certified Acupuncturists in the state of WI, the quality of Acupuncture care in WI will suffer.

Thank you,

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