Doctors of Osteopathic Medicine and the U.S. Model of Osteopathic Medicine

Introduction

The American Osteopathic Association (AOA) recognizes the important responsibility international authorities have to protect their citizens' health and well-being. With the increasing proliferation of providers and the lack of worldwide standards in education and training, it is essential to be able to identify the qualifications of those wishing to practice medicine. This paper, produced by the AOA's Bureau of International Osteopathic Medicine (BIOM), describes the establishment and current state of the U. S. osteopathic medical profession. It has been developed for the purpose of presenting health authorities with a comprehensive resource and reference document. It contains the most up-to-date information available at the time of publication and includes links to numerous source documents for additional information.

The paper is segmented as follows:

1. **Historic Overview** – A look at the roots of the profession, the institutions that support it and its status today: Page 1
2. **Educational Model** – A review of the predoctoral and postdoctoral training and continuing education requirements: Page 4
3. **Regulation and Licensure** – How osteopathic physicians (DOs) and allopathic physicians (MDs) are regulated and licensed in the U.S. and the examinations required to qualify: Page 8
4. **Efficacy, Safety & Cost Effectiveness** – An overview of the state of research and cost benefits of osteopathic treatment: Page 9
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History

The osteopathic medical profession was established by Andrew Taylor Still, MD, DO, in Missouri in 1892. The practice of traditional medicine in the U.S. at that time was heavily influenced by methods and theories of practice, which are now antiquated and discredited. Dr. Still sought a new philosophy and approach to medicine that built upon the existing health care model and incorporated his newly developed principles of osteopathic care and osteopathic manipulative treatment (OMT)[1]. This was to become osteopathic medicine.

Today, there are two types of fully licensed physicians recognized by the U.S. federal government: the osteopathic physician, to whom a DO (Doctor of Osteopathy or Doctor of Osteopathic Medicine) degree is conferred, and the allopathic physician, to whom an MD (Doctor of Medicine) degree is conferred. DOs and MDs are eligible for medical licensure in all 50 states and the District of Columbia.[1]

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[1]Definitions from the American Association of Colleges of Osteopathic Medicine Glossary of Osteopathic Terminology, 2011:

Osteopathic Manipulative Medicine: The application of osteopathic philosophy, structural diagnosis and use of OMT in the diagnosis and management of the patient.

Osteopathic Manipulative Treatment: The therapeutic application of manually guided forces by an osteopathic physician (U.S. usage) to improve physiologic function and/or support homeostasis that has been altered by somatic dysfunction. OMT employs a variety of techniques.

All DOs and MDs must be licensed by the state licensing board in order to practice in that state. Licensure affords equivalent practice rights for DOs and MDs.

Whether physicians hold the DO or the MD qualification has no bearing on their rights and responsibilities in the practice of medicine. U.S.-trained DOs are accorded the same unlimited scope of practice as their counterparts, the MDs, which include prescriptive rights, managed care contracts, surgery, the ability to employ the latest medical technologies, and staff privileges at hospitals and medical facilities. Osteopathic physicians are eligible for participation in and reimbursement from managed care companies and all state and federal government agencies and programs, such as Medicare and Medicaid. In addition, U.S.-trained DOs are eligible to prescribe all controlled substances (narcotic and non-narcotic) as designated by the U.S. Drug Enforcement Administration in its Schedule I, II, III, IV or V medicines.

While U.S.-trained DOs and MDs have many things in common, osteopathic medicine is a parallel branch of medicine with a distinct philosophy and approach to patient care. DOs practice a "whole person" approach to health care. Instead of just treating specific signs and symptoms, osteopathic physicians concentrate on treating their patients as a whole, including mind, body and spirit.

Osteopathic physicians understand how all the body's systems are interconnected and how each one affects the others. They receive additional specialized training in the musculoskeletal system so that they better understand how that system influences the condition of all other body systems. DOs are also trained to identify and correct structural problems, which can assist the body's natural tendency toward health and self-healing.

As a component of their practices, DOs help patients develop attitudes and lifestyles that don't just fight illness, but also help prevent disease. Millions of patients prefer this concerned and compassionate care and have made DOs their physicians for life.

Many DOs incorporate Osteopathic Manipulative Treatment (OMT) into the care they provide. With OMT, an osteopathic physician's hands become an additional tool to diagnose illness and injury and encourage the body's systems to support self-healing. By combining all other appropriate medical options with OMT, DOs offer their patients the most comprehensive care available in medicine today."

The American Osteopathic Association

Serving as the professional family for more than 109,000 osteopathic physicians and medical students, the AOA promotes public health and encourages scientific research. The AOA serves as the primary specialty certifying body for DOs and is the accrediting agency for osteopathic medical schools.

The AOA stands firmly behind osteopathic physicians' ethical and professional responsibilities to patients and the medical profession. An in-depth look at its ethical standards is documented in its official Code of Ethics. The AOA's policies and positions also outline its stance on major health issues affecting all areas of society."

The AOA's **Commission on Osteopathic College Accreditation (COCA)** currently accredits 30 osteopathic medical schools operating in 42 sites during the 2015-2016 academic year. The COCA is recognized by the U.S. Department of Education as the only accrediting agency for osteopathic medical

schools in the United States. Only those osteopathic physicians who graduate from a COCA-accredited college of osteopathic medicine (COM) are eligible to practice in the U.S.

U.S. colleges of osteopathic medicine are listed in the World Directory of Medical Schools. The directory, developed by the World Federation for Medical Education and the Foundation for Advancement of International Medical Education and Research, encompasses the former Avicenna Directory of Medical Schools, which was developed by the World Health Organization and University of Copenhagen.[iv]

For more information about the COMs, access the American Association of Colleges of Osteopathic Medicines website.

The American Association of Colleges of Osteopathic Medicine

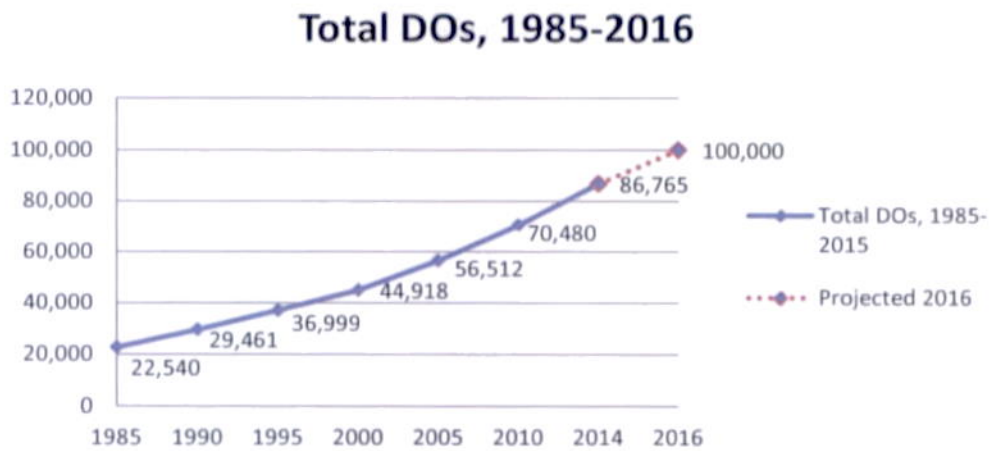
The American Association of Colleges of Osteopathic Medicine (AACOM) was founded in 1898 to lend support and assistance to the nation's osteopathic medical schools, and to serve as a unifying voice for osteopathic medical education.

Having grown from a handful of college administrators a century ago, the organization today represents the administration, faculty and students of all osteopathic medical colleges in the United States. The association, guided by its Board of Deans and various other member councils and committees, is actively involved in all areas of osteopathic medical education.

AACOM provides leadership for the osteopathic medical education community by promoting excellence in medical education, research and service, and by fostering innovation and quality across the continuum of osteopathic medical education to improve the health of the U.S. public.[v]

Growth in Osteopathic Physicians

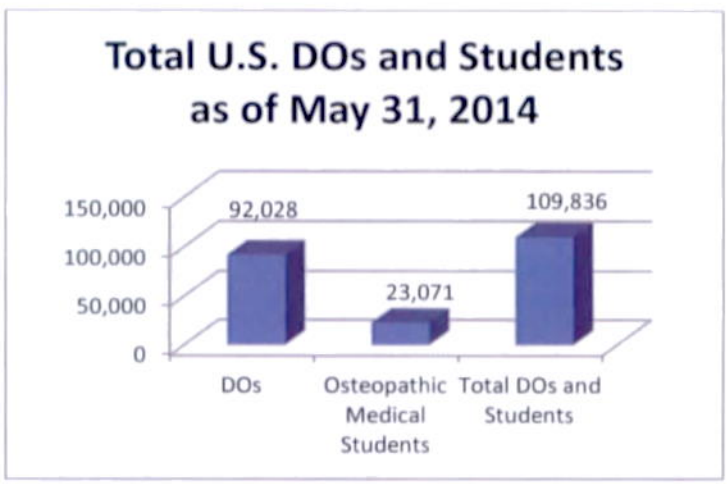
DOs are one of the fastest-growing segments of health care professionals in the U.S. At the current rate of growth, it is estimated that there will be more than 100,000 total osteopathic physicians in the U.S. by 2016. The graph below shows the growth in the number of DOs since 1985.



Note: Chart above excludes same-year new graduates each year.

Source: 2014 OMP Report, AOA Master Physician File, May 31, 2014

The AOA's current statistics indicate more than 90,000 DOs, including 2014 graduates, in the U.S. and more than 23,000 osteopathic medical students for a total of more than 109,000 DOs and medical students, as of May 31, 2014.[vi] Osteopathic physicians in the U.S. make up 7% of the physician workforce. Twenty five percent of medical students are osteopathic medical students.



Source: 2014 OMP Report, AOA Master Physician File, May 31, 2014

Education

1. Education
    a. University/pre-medical
        i. Admission requirements are rigorous and specific to each college or school of osteopathic medicine. Some admission requirements include, but are not limited to, the following:

1. Competitive science and overall grade point average -verified by an official university/college transcript
2. Completion of pre-medical undergraduate courses
3. A Medical College Admission Test (MCAT) score
4. Letters of recommendation, including one from an osteopathic physician
5. Personal statement and completed online supplemental application
6. Criminal background check, if admitted

ii. International students may apply to certain colleges of osteopathic medicine. Each college has different admission requirements that can be found on its website.

iii. Most applicants are required to have a bachelor's degree that includes required science courses before entry into osteopathic medical school.

iv. Many applicants have earned a master's degree and/or doctorate degree before applying.

v. All applicants apply through a centralized application service: The American Association of Colleges of Osteopathic Medicine Application Service.

vi. Resource: http://www.aacom.org/become-a-doctor

b. Osteopathic Medical Education

i. The education model is a postgraduate DO degree from a college of osteopathic medicine.

ii. Accreditation

1. The U.S. Department of Education authorizes ***only*** the AOA's Commission on Osteopathic College Accreditation the authority to accredit professional osteopathic medical education institutions and their curricula.
2. Accreditation is defined as meeting or exceeding the AOA standard for educational quality with respect to mission, goals, and objectives; governance, administration and finance; facilities, equipment, and resources; faculty; student admissions, performance and evaluation; preclinical and clinical curriculum; and research and scholarly activity.

iii. Clinical Experience

DO and MD students complete comparable hospital or ambulatory facility rotations/clinical clerkships within their four (4 years of medical training.

iv. Educational Training Areas in Medical Curricula

1. Typically, the length of the osteopathic medical curricula is at least four (4) academic years or 130 weeks of instruction.
2. Biomedical sciences and related-disciplines include the following:
    a. Osteopathic principles and practice are incorporated into all four (4) years of osteopathic training
    b. Preclinical, predoctoral training (Year 1 & Year 2)
        i. Human anatomy, biochemistry, pharmacology, genetics, physiology, pathology, and microbiology
    c. Clinical predoctoral training (Year 3 & Year 4)
        i. Physical and differential diagnosis
        ii. Medical ethics and legal aspects of medicine

iii. Internal medicine, family medicine, pediatrics, geriatrics, obstetrics and gynecology, preventive medicine and public health, psychiatry, surgery, and radiology

d. Basic knowledge of research methodology

v. Medical Licensing Examinations for DOs

1. Qualified DO graduates take the Comprehensive Osteopathic Medical Licensing Examination (COMLEX-USA), recognized by all state licensing jurisdictions, developed and administered by the National Board of Osteopathic Medical Examiners. All students must take and pass COMLEX-USA Level 1 and Level 2 Cognitive Evaluation and Performance Evaluation exams to graduate.
2. The United States Medical Licensing Examination (USMLE), overseen by the National Board of Medical Examiners, is the licensing exam/program developed for MDs. DOs are also eligible to take this exam.

vi. Core Competencies of All Colleges of Schools of Osteopathic Medicine

At minimum, a graduate must be able to complete a series of objective competency-based assessments.

National Board of Osteopathic Medical Examiners. Fundamental Osteopathic Medicine Competency Domains: Guidelines for Osteopathic Medicine Licensure and the Practice of Osteopathic Medicine. NBOME. June 2011.

Domain	Competency
1. Osteopathic Philosophy and Osteopathic Manipulative Medicine	Physicians are expected to demonstrate and apply knowledge of accepted standards in Osteopathic Manipulative Treatment (OMT) appropriate to their specialty, remain dedicated to life-long learning, and to practice habits in osteopathic philosophy and manipulative medicine.
2. Medical Knowledge	Physicians are expected to demonstrate and apply knowledge of accepted standards of clinical medicine in their respective specialty area, remain current with new developments in medicine, and participate in life-long learning activities, including research.
3. Patient Care	Physicians must demonstrate the ability to effectively treat patients and provide medical care that incorporates the philosophy, patient empathy, awareness of behavioral issues, the incorporation of preventive medicine, and health promotion.
4. Interpersonal and Communication Skills	Physicians are expected to demonstrate interpersonal and communication skills that enable them to establish and maintain professional relationships with patients, families, and other members of the health care team.
5. Professionalism	Physicians are expected to uphold the Osteopathic Oath in the conduct of their professional activities that promote advocacy of patient welfare, adherence to ethical principles, collaboration with health professionals, life-long learning, and sensitivity to a diverse patient population. Physicians should be cognizant of their own physical and mental health in order to effectively care for patients.
6. Practice-Based Learning and Improvement	Physicians must demonstrate the ability to critically evaluate their methods of clinical practice, integrate evidence-based medicine into patient care, show an understanding of research methods, and improve patient care practices.
7. Systems-Based Practice	Physicians are expected to demonstrate an understanding of health care delivery systems, provide effective and qualitative patient care within the system, and practice cost-effective medicine.

[vii]

c. Osteopathic Graduate Medical Education (OGME)

Upon completion of osteopathic medical school, DOs can enter graduate medical education. OGME provides trainees with progressive and supervised opportunities to ensure adequate preparation for the independent practice of medicine.

Today, most osteopathic specialties combine traditional core rotations and specialty training in the first year (OGME-1), formerly known as the traditional rotating internship year. The value of primary care is considered a core value of the osteopathic medical profession. The OGME-1 year serves as the link between predoctoral and postdoctoral clinical training and provides a year of maturation and transition from application of predoctoral knowledge to supervised clinical decision-making and skills. Exposure to core disciplines is essential for all physicians, whether the ultimate training goal is to practice as a generalist or specialist. In addition, osteopathic medicine has always promoted primary care exposure as a basis for eventual continued study in any specialty. Residents must take and pass the COMLEX-USA Level 3 examination to obtain licensure to practice medicine.

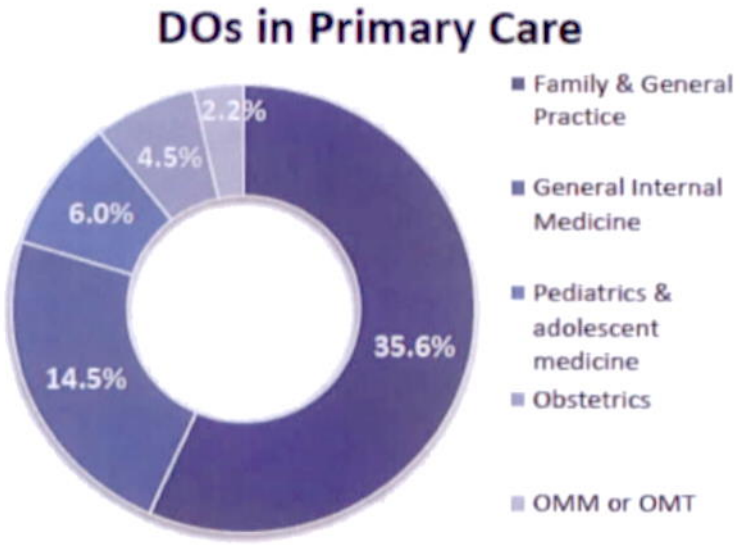
More than a decade ago, the AOA adopted the six core competencies of the Accreditation Council on Graduate Medical Education (ACGME) and added a seventh core competency on osteopathic principles and practices and osteopathic manipulative treatment. This adoption guarantees that all U.S. residency training specialties design curricula within the same organized structure, but also highlights the importance of incorporating and practicing the osteopathic approach to care throughout OGME. In 2014, the AOA, AACOM and ACGME agreed to align accreditation standards for GME programs into a new, single GME accreditation system beginning July 1, 2015. Through osteopathic-focused residency programs, the new GME accreditation system will recognize the unique principles and practices of the osteopathic medical profession and its contributions to health care.

d. Specialty Board Certification

The osteopathic medical profession views medical education as a continuum that provides continuity and a framework for enhancing the quality of education spanning the entire medical career.

Current requirements for AOA board certification include the following:

1. Graduate from a college of osteopathic medicine accredited by the Commission on Osteopathic College Accreditation.
2. Hold an unrestricted license to practice medicine in a U.S. state or territory.
3. Conforms to the AOA Code of Ethics.
4. Be a member in good standing of the AOA or the Canadian Osteopathic Association at the time of application.
5. Meet any specialty-specific requirements for board certification, which may include training and/or documented professional experience.
6. Pass the certification examinations (written, oral and/or clinical practice components).



Source: 2014 OMP Report, AOA Master Physician File, May 31, 2014

e. Continuing Medical Education (CME) Requirements
Most state medical licensing boards require a process whereby physicians can demonstrate ongoing educational activities to keep current in the practice of medicine. Maintenance of nearly all specialty board certifications includes a CME requirement.

f. Osteopathic Continuous Certification (OCC)
Implemented in January 2013, OCC is a process in which AOA board-certified DOs can maintain certification and demonstrate competency in their specialty area. OCC is comprised of five (5) components: 1) unrestricted licensure; 2) lifelong learning and continuing medical education; 3) cognitive assessment; 4) practice performance assessment and improvement; and 5) continuous AOA membership. Some states have begun to accept OCC, or the related Maintenance of Certification, requirements as acceptable in place of CME requirements. [viii]

Regulation and Licensure

Currently, there are 70 member boards that belong to the Federation of State Medical Boards (FSMB), which addresses licensure and regulation in the 50 states, the District of Columbia, Puerto Rico, Guam and the Virgin Islands.

Each state has its own unique Medical Practice Act defining the practice of medicine, establishing licensure requirements for physicians, and implementing rules and regulations governing all aspects of medical care delivered in that state.

Thirty-six states have composite boards that license and regulate both DOs and MDs in the state. Some states have separate licensure and disciplinary boards, with 14 states having separate DO and MD

medical boards handling licensure and regulation. The criterion for physician licensure is similar for DO and MD boards, where there are not composite boards.

Obtaining a license to practice medicine requires passage of a licensing examination sequence. All states recognize and use the COMLEX-USA for assessing DOs. Having independently studied the validity of the COMLEX-USA, the Federation of State Medical Boards (FSMB) formally recognizes COMLEX-USA as valid for its intended purpose of assessing osteopathic physicians and assuring the public that DOs are meeting a uniform standard for purposes of medical licensure.

To learn more on state requirements, visit the individual medical board of concern or the FSMB Directory of State Medical and Osteopathic Boards.

Efficacy, Safety & Cost Effectiveness

A body of evidence on osteopathic care and manual treatment exists, increasingly in the form of systematic reviews and randomized controlled trials, particularly showing the effectiveness of manual techniques using manipulation for low back pain. In addition, in a number of countries including Australia, Europe, New Zealand and the U.S., clinical guidelines for the treatment of low back pain recommend osteopathic techniques such as OMT.[ix] [x] However, this evidence is still emerging; robust scientific research into the efficacy of other osteopathic techniques or for conditions other than back pain has been limited and, in many areas, remains inconclusive. For example, there are encouraging studies about efficacy of manipulative treatment for cervicogenic and tension-type headaches and neck pain[xi], recurrent otitis media[xii], pneumonia[xiii] and several other common conditions.

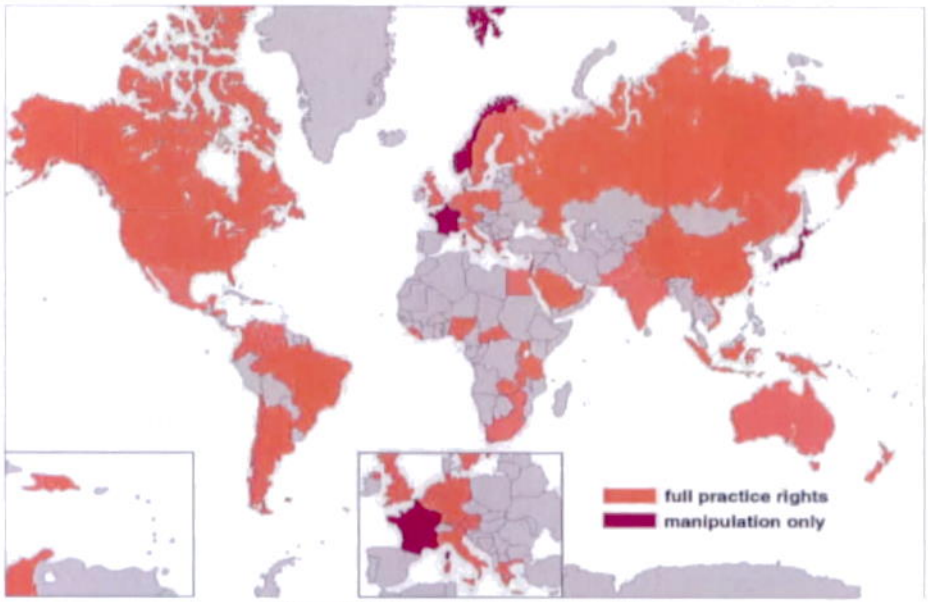
A major benefit to osteopathic care and manual treatment is the low incidence of serious adverse outcomes or unwarranted serious or permanent effects overall, particularly when compared with pharmacologic treatments, though minor and self-limiting side effects of treatment are not uncommon and most often perceived as acceptable by patients.[xiv] Given the current public health crises in the U.S. regarding morbidity and mortality related to prescribed opiates, osteopathic approaches to care have never been timelier.

Another benefit to osteopathic care may be cost effectiveness, though robust cost-effectiveness analyses remain limited, especially for care that extends beyond manipulative treatment for back pain. As the U.S. and other governments shift their emphasis to the "triple aim" of better health, improved experience of care, and lower per capita cost, an increased interest in larger and more robust cost-comparative studies of an osteopathic approach to patient care even beyond manipulative treatment is likely to emerge and further delineate the benefits of seeking care from an osteopathic physician.

Globally, the osteopathic profession has recognized the need for more supporting research. Increased collaboration within the profession, nationally and internationally, and with other professions, will likely facilitate larger studies with stronger methodological approaches. In addition, the new paradigms of clinical research and evidence collection may be particularly suited to the evaluation of osteopathic treatment. In many jurisdictions, concerted efforts are being made, particularly with respect to patient safety and efficacy, but also in the area of cost effectiveness, in order to better inform patients of their best options for care.

International Recognition

More than 70 countries around the world have licensed U.S.-trained osteopathic physicians for the full practice of medicine in the last 50 years. U.S.-trained DOs have been recognized for full physician licensure in countries such as Australia, Austria, the Bahamas, Canada, Germany, Lebanon, New Zealand, St. Lucia, and the United Kingdom, to name a few. The full list of countries that have recognized U.S.-trained osteopathic physicians can be found in the AOA's International Licensure Summary.



Licensure Summary Map, December 2014

Student and Institutional Global Contributions

In a continuing effort to expand international opportunities for the osteopathic medical profession, the AOA's BIOM conducts an ongoing survey of all colleges of osteopathic medicine to identify their programs and activities in international student clinical electives, medical outreach, and professional interactions with international organizations.

As the osteopathic medical profession continues to expand its international reach, sharing this information among different osteopathic bodies becomes increasingly important. This report indicates a growing interest from osteopathic physicians and students to practice internationally. The study shows that most COMs have international opportunities for students and faculty participating in international activities. Also, many COMs maintain professional contacts with global organizations such as the World Health Organization, Pan American Health Organization, Global Health Education Consortium and other groups.

See the BIOM Report on International Activities at U.S. Colleges of Osteopathic Medicine for more detailed information.

COM Work Map

These are the countries where COMs have reported sending faculty and students to participate in international health care programs in the 2013-2014 school year.

Angola
Argentina
Bangladesh
Bolivia
Botswana
Brazil
China
Costa Rica
Cuba
Dominican Republic
Ecuador
El Salvador
Ethiopia
France
Germany
Ghana
Guatemala
Honduras
Hong Kong
India
Israel
Italy
Jamaica
Japan
Jordan
Kenya
Lesotho
Malawi
Mexico
Nepal
New Zealand
Nigeria
Peru
Rwanda
Sierra Leone
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South Africa
South Korea
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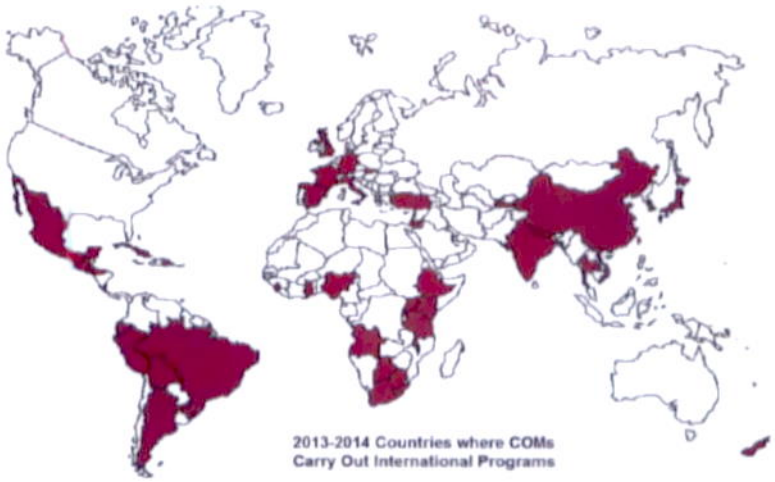
Tajikistan
Tanzania
Thailand
Turkey
Uganda
United Kingdom
Vietnam



2013-2014 Countries where COMs Carry Out International Programs

U.S. Military Humanitarian Missions with DOs

The United States military, on an annual basis, participates in several humanitarian missions around the world including Pacific Partnership, Africa Partnership Station and programs in the Western Hemisphere. These are generally joint exercises with participation of other international forces as well.

Many osteopathic physicians, both as uniformed service members and as civilian non-government official (NGO) volunteers, participate in these exercises, and thus have, through these programs, provided the full scope of medical care services to civilian patients in numerous countries around the world.

DOCARE International

DOCARE International is a volunteer medical outreach organization dedicated to providing much-needed health care to indigent and isolated people in remote areas around the world. The membership, comprised primarily of physicians, includes health care professionals from a wide range of backgrounds, disciplines and locations.[xv] U.S.-trained osteopathic physicians also volunteer with many global outreach organizations.

International Association of Medical Regulatory Authorities

The AOA is an active member of the International Association of Medical Regulatory Authorities (IAMRA), which has 80 members in 39 countries.[xvi] IAMRA is an association of medical regulatory bodies that works to develop the best practices to "protect, promote and maintain the health and safety of the public by ensuring proper standards for the profession of medicine."[xvii]

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[i] AOA US Licensure Summary, July 2014, http://www.osteopathic.org/inside-aoa/development/licensure/Documents/us-licensure-summary.pdf, accessed on 1/6/15
[ii] http://www.osteopathic.org/osteopathic-health/about-dos/about-osteopathic-medicine/Pages/default.aspx
[iii] http://www.osteopathic.org/inside-aoa/about/Pages/default.aspx, accessed on 1/6/15
[iv] http://wdoms.org/
[v] http://www.aacom.org/about-aacom, accessed on 1/6/15
[vi] AOA 2014 Osteopathic Medical Profession Report, pp 1.
[vii] Building the Future: Educating the 21st Century Physician: Report of the Blue Ribbon Commission, http://blueribboncommission.org/wp-content/uploads/2013/11/BRC-Final-Report.pdf, accessed on 4/29/15
[viii] http://www.osteopathic.org/inside-aoa/development/licensure/Pages/us-licensure.aspx, accessed on 1/6/15
[ix] American Osteopathic Association Guidelines for Osteopathic Manipulative Treatment (OMT) for Patients With Low Back Pain, *J Am Osteopath Assoc.* 2010;110(11):653-666
[x] BMC Musculoskeletal Disorders 2014, 15:286 doi:10.1186/1471-2474-15-286. Published: 30 August 2014
[xi] When to Consider Osteopathic Manipulation: Patients with low back pain, headache, and neck pain can benefit from this approach. *The Journal of Family Practice*. May 2010; Vol 59, No 5: E5-E8
[xii] Effect of Osteopathic Manipulative Treatment on Middle Ear Effusion Following Acute Otitis Media in Young Children: A Pilot Study. *J Am Osteopath Assoc.* 2014;114(6):436-447 doi:10.7556/jaoa.2014.094
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[xv] http://docareintl.org/, accessed on 1/6/15
[xvi] http://iamra.com/memberlist.asp, accessed on 1/6/15
[xvii] http://iamra.com/, accessed on 1/26/15