

Joshua Freeman, MD, Feature Editor
Alison Dobbie, MD, Feature Editor

Editor's Note: Send submissions to jfreeman3@kumc.edu. Articles should be between 500–1,000 words and clearly and concisely present the goal of the program, the design of the intervention and evaluation plan, the description of the program as implemented, results of evaluation, and conclusion. Each submission should be accompanied by a 100-word abstract. Please limit tables or figures to one each. You can also contact me at Department of Family Medicine, KUMC, Room 1130A Delp, Mail Code 4010, 3901 Rainbow Boulevard, Kansas City, KS 66160. 913-588-1944. Fax: 913-588-2496.

Allopathic Family Medicine Residents Can Learn Osteopathic Manipulation Techniques in a 1-month Elective

James D. Leiber, DO

Background: *Graduating family medicine residents report a relative lack of confidence in managing musculoskeletal problems, and many primary care physicians desire more instruction in manual medicine.*

Methods: *We conducted a 1-month osteopathic manipulative treatment elective with five allopathic family medicine residents, utilizing multiple teaching and assessment strategies.* **Results:** *Residents averaged 30 patient encounters each. Faculty graded their attainment of the knowledge and skills objectives at 3.9 and 3.8 on a 5-point scale, respectively. Residents reported unanimously that the course had reasonable expectations and fostered independent decision making and that they achieved the educational goals.*

Conclusions: *After a 1-month elective, allopathic residents demonstrated competency in a defined set of osteopathic principles and skills.*

(Fam Med 2005;37(10):693-5.)

Graduating family medicine residents report a relative lack of confidence in their ability to manage musculoskeletal disorders,¹ and many primary care physicians desire more instruction in manual medicine.² Evidence supports the effectiveness of teaching a limited set of osteopathic manipulative treatment skills to allopathic physicians. For example, when treated by

allopathic physicians with 18 hours of manual therapy training, patients with acute low-back pain demonstrated a more rapid functional recovery than controls did.³

In this paper, we describe a 1-month rotation in osteopathic manipulative treatment (OMT) skills in an allopathic family medicine residency program. The rotation goal was for allopathic residents to demonstrate competency in a limited set of OMT principles and skills. The summative educational goals and objectives are shown in Table 1.

Methods

The Andrews Air Force Base family medicine and combined family medicine-psychiatry residency is an 8 to 10 position per year military program with 13 faculty, three of whom are DOs. Five second- or third-year residents elected to complete the rotation.

OMT Elective Description

Curricular Content and Goals. We designed our curricular goals and content after reviewing materials from medical school first-year OMT curricula, OMT-related CME

From the Malcolm Grow Medical Center Family Medicine Residency, Andrews Air Force Base, Md, and the University of North Carolina.

Table 1

Educational Goals/Objectives and Core Competencies for Summative Evaluation

KNOWLEDGE	<i>Mean Score*</i>
The resident will be able to:	
1. Discuss the relationship between structural anatomy and optimal function and can articulate general osteopathic principles (medical knowledge, patient care).	4.1
2. Define somatic dysfunction, active range of motion, passive range of motion, anatomic motion barrier, physiologic motion barrier, restrictive motion barrier, localization of barrier, engaging a barrier, and trigger points (medical knowledge).	4.0
3. Explain the techniques of muscle energy, soft tissue technique, high velocity low amplitude (HVLA), myofascial release, strain/counterstrain, and facilitated positional release (medical knowledge).	3.9
4. Describe the concept of palpatory diagnosis (medical knowledge).	4.4
5. Explain the difference between direct and indirect techniques as well as intrinsic and extrinsic corrective forces (medical knowledge).	4.3
6. Identify pertinent anatomy and common somatic dysfunctions of cervical, thoracic, and lumbar spine (medical knowledge).	3.8
7. Identify pertinent anatomy and common somatic dysfunctions of the pelvis, innominates, and lower extremity (medical knowledge).	3.8
8. Appropriately select treatment techniques for identified somatic dysfunctions and devise plans for follow-up management, including home stretching and strengthening exercises (patient care, medical knowledge, systems-based practice).	3.7
9. Identify somatic dysfunctions and discuss appropriate treatments for multiple common family medicine complaints such as low-back pain, neck pain, headaches, dysmenorrhea, constipation, chronic respiratory diseases, etc (patient care, medical knowledge).	3.5
10. Articulate diagnosis, treatment, and follow-up to the patient in understandable terms in a respectful manner (patient care, interpersonal and communication skills, professionalism).	3.7
SKILLS	
The resident will be able to:	
1. Perform a basic complete osteopathic structural examination (patient care).	3.4
2. Demonstrate palpation of anatomic landmarks and differentiate acute and chronic tissue texture changes (patient care).	3.6
3. Demonstrate and adequately test for restriction of motion (patient care).	3.9
4. Demonstrate appropriate use of the following techniques to treat low-back pain, neck pain, headaches, dysmenorrhea, constipation, chronic respiratory diseases, etc: soft tissue massage, muscle energy, HVLA, myofascial release, strain/counterstrain, facilitated positional release, and direct articular technique, trigger point identification, and deactivation (patient care).	3.6
5. Demonstrate documentation of physical exam findings and code appropriately (systems-based practice).	4.3
6. Present an evidence-based osteopathic-related lecture utilizing all available resources or complete a preapproved project (practice-based learning and improvement, interpersonal and communication skills).	4.0

* 0=no interaction, 1=unsatisfactory, 2=marginal, 3=satisfactory, 4=very good, and 5=excellent

for allopathic physicians, and a model osteopathic curriculum for allopathic residencies published by Johnson and colleagues in 1998⁴ (see Table 1). We taught both direct and indirect techniques to encourage a broad skill set.⁵ We did not teach any cervical spine high velocity low amplitude (HVLA) techniques.

Teaching and Learning Methods.

The OMT clinic was held 8 to 12 times per month in the Family Medicine Clinic, offering four appointments per session at 40-minute intervals. Patients were referred by the other 45 providers in the program and saw the resident and one of three supervising DO faculty. During the 4-week elective, residents met several times

for formal didactics; spent 40 to 50 hours in clinic, with one-on-one observation and instruction; and studied interactive CD-ROMs for approximately 4 hours. Required readings included a pictorial handbook of OMT techniques created specifically for the rotation.⁶⁻¹¹ During clinical encounters, residents had to develop new palpatory skills to make the diagnoses and to perform effective OMT. They started by attempting to “feel” landmarks, motion restrictions, and tissue texture changes as noted by the faculty. After repeated step-by-step guidance with multiple patients, residents ultimately chose and performed techniques independently while the faculty gave immediate feedback on the safety, appropriateness, and success of the techniques

chosen. Such formative feedback has been shown to increase confidence in OMT skills.^{12,13}

Assessment Strategies

Assessment strategies¹⁴ included a written posttest, interactive case discussions, and an innovative procedure log/assessment tool created for this rotation. We modeled the written test questions after the National Board of Osteopathic Medical Examiners sample test questions (www.nbome.org). We based the procedure log/assessment tool on a validated OMT assessment tool.¹⁵

The Procedure Log. Residents entered each OMT encounter into an Internet-based procedure log (MyEvaluations.com),[®] providing

details of the patient's diagnoses and the techniques utilized. An e-mail was then automatically sent to the supervising osteopathic faculty member, who was prompted to rate resident competency on 12 items per encounter based on a zero- to 2-point scale (zero=noVICE, needs close supervision; 1=improved but still needs supervision; and 2=able to perform without supervision). Sample items included: the resident correctly positioned the patient for the treatment and applied force in the correct direction with the appropriate intensity.

Results

Five allopathic family medicine residents have completed this elective with 100% pass rate. The number of patient encounters per resident averaged 30 per rotation (range=22 to 37). The first four residents to complete the rotation were assessed primarily on case discussions, chart reviews, and longitudinal observation. The fifth resident to complete the rotation was also assessed by a post-rotation test and scoring on the procedure log/assessment tool. His post-rotation test score was 18 out of 20 questions correct (90%). The resident achieved a "2" (able to perform without supervision) on all of the procedure log/assessment tool questions by the end of the rotation.

Each question on a summative, end-of-rotation evaluation was rated by the attending on a zero- to 5-point scale. The scale and the mean score for each individual evaluation question are shown in Table 1. The overall mean for the knowledge and skills objectives were 3.9 and 3.8, respectively. All residents achieved individual scores for each objective of at least 3.0 for all but one question. One resident did not complete a project and therefore received a 1.0.

We assessed residents' satisfaction with the experience using an end-of-rotation, anonymous, six-question, free-text survey. Residents unanimously felt that teach-

ing was done regularly, precepting was available, independent decision making was fostered, expectations were reasonable, and educational goals were achieved.

For graduating residents, we have provided letters recommending privileges limited to the specific techniques taught. So far, this has been met without resistance by credentialing committees.

Discussion

We successfully implemented a 4-week OMT elective for allopathic residents in an allopathic family medicine residency program. Residents were highly satisfied with the educational experience and demonstrated competency in a defined set of OMT principles and skills. These skills have been recognized by credentialing committees.

Our study is limited by being conducted at one institution with small numbers of subjects. Also, we do not know to what extent residents who completed the elective used the skills in practice and if this impacted patient care. Generalizability of our curriculum is limited by the need to have skilled DO faculty members available and willing to dedicate a significant amount of time to teaching the elective. However, we are encouraged to continue our elective and encourage other programs with DO faculty to consider similar rotations. Future studies might include validation of our OMT assessment tool and measures of retention of the acquired skills, impact on clinical outcomes, perceived usefulness in practice, cost-effectiveness, and patient and physician satisfaction.

Acknowledgments: This curriculum was presented as a poster presentation on March 10, 2005, at the University of North Carolina as part of the Family Medicine Faculty Development Fellowship.

Thank you to Brian Reamy, MD (Uniformed Services University of Health Sciences) and Carol Tresolini, PhD (University of North Carolina) for reviewing the manuscript.

Persons other than licensed osteopathic physicians who receive education or training in manual therapy from osteopathic physicians shall not promote to the public that they offer osteopathic manipulative treatment services or practice "osteopathy" or "osteopathic medicine."

Correspondence: Address correspondence to Dr Leiber, 1075 West Perimeter Road, Andrews Air Force Base, MD 20762. Cell: 301-466-8194. Fax: 240-857-3011. James.Leiber@andrews.af.mil; JamesLeiber@yahoo.com.

REFERENCES

1. Matheny JM, Brinker MR, Elliott MN, Blake R, Rowane MP. Confidence of graduating family practice residents in their management of musculoskeletal conditions. *Am J Orthop* 2000;29(12):945-52.
2. Stoll ST, Russo DP, Atchison JW. Physicians' and patients' attitudes toward manual medicine: implications for continuing medical education. *J Contin Educ Health Prof* 2003;23(1):13-20.
3. Curtis P, Carey TS, Evans P, Rowane M, Mills Garrett J, Jackman A. Training primary care physicians to give limited manual therapy for low-back pain: patient outcomes. *Spine* 2000;25(22):2954-60.
4. Johnson KH, Raczek JA, Meyer D. Integrating osteopathic training into family practice residencies. *Fam Med* 1998;30(5):345-9.
5. Johnson S, Kurtz ME. Osteopathic manipulative treatment techniques preferred by contemporary osteopathic physicians. *J Am Osteopath Assoc* 2003;103(5):219-24.
6. DiGiovanna E. Chapter 1: Introduction. In: DiGiovanna E, Schiowitz S, Dowling D, eds. *An osteopathic approach to diagnosis and treatment*, third edition. Philadelphia: Lippincott Williams and Wilkins, 2004.
7. Seffinger M. Osteopathic philosophy. In: Ward RC, ed. *Foundations for osteopathic medicine*, second edition. Philadelphia: Lippincott Williams and Wilkins, 2003:3-18.
8. Kuchera M, McPartland J. Myofascial trigger points as somatic dysfunction. In: Ward RC, ed. *Foundations for osteopathic medicine*, second edition. Philadelphia: Lippincott Williams and Wilkins, 2003:1034-50.
9. Hallgren R. An interactive guide to the pelvis: visualization of osteopathic principles and practice, volume 7. East Lansing, Mich: Michigan State University College of Osteopathic Medicine, 1999.
10. Hallgren R. An interactive guide to the lumbar spine: visualization of osteopathic principles and practice, volume 2. East Lansing, Mich: Michigan State University College of Osteopathic Medicine, 1999.
11. Hallgren R. An interactive guide to the thoracic spine: visualization of osteopathic principles and practice, volume 4. East Lansing, Mich: Michigan State University College of Osteopathic Medicine, 1999.
12. Mann DD, Eland DC, Patriquin DA, Johnson DF. Increasing osteopathic manipulative treatment skills and confidence through mastery learning. *J Am Osteopath Assoc* 2000;100(5):301-4,309.
13. Joy E, Hala SV. Musculoskeletal curricula in medical education: filling in the missing pieces. *The Physician and Sports Medicine* 2004;32(11).
14. Toolbox of assessment methods© 2000. Accreditation Council for Graduate Medical Education (ACGME) and American Board of Medical Specialties (ABMS). Version 1.1.
15. Boulet JR, Gimpel JR, Dowling DJ, Finley M. Assessing the ability of medical students to perform osteopathic manipulative treatment techniques. *J Am Osteopath Assoc* 2004;104(5):203-11.