



# The Development of a Pediatric Osteopathic Recognition Track

Alexander Rakowsky, MD; Carl Backes, DO; John D. Mahan, MD; Kimberly Wolf, DO; Elizabeth Zmuda, DO

From the Department of Pediatrics Residency Program (A Rakowsky, C Backes, JD Mahan, K Wolf, and E Zmuda), Nationwide Children's Hospital, Columbus, Ohio; Department of Pediatrics (C Backes), Doctors Hospital, Columbus, Ohio; and Department of OMM (K Wolf), Touro University California College of Osteopathic Medicine, Vallejo, Calif

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Address correspondence to Alexander Rakowsky, MD, Pediatric Residency Program, Nationwide Children's Hospital, Education Building Suite 2A, 700 Children's Drive, Columbus OH 43205 (e-mail: [alex.rakowsky@nationwidechildrens.org](mailto:alex.rakowsky@nationwidechildrens.org)).

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## ABSTRACT

It is clear that graduates of osteopathic medical schools desire to maintain their Osteopathic Manipulative Medicine (OMM) and Osteopathic Principles and Practice (OPP) skills and mindset of their professional identity. In a recent survey, 68% of 1,523 third year osteopathic medical students indicated that it would be more appealing to attend a residency with osteopathic recognition, with more than half indicating this would play an important role in how they made their rank list. There are currently few options available to DO students that would like to maintain their OMM and OPP skills during pediatric residency programs, and

with an increasing number of DO graduates each year, there may be a need to provide more opportunities for them. In this article we describe our pediatric Osteopathic Recognition Track, which has the goal of providing an appropriate level of osteopathic focused training to our small number of residents in the track (4 annually) while incorporating them fully into a large and very busy pediatric program. We use Bloom's taxonomy as the framework upon which to provide details about our approach.

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## BACKGROUND

THE NUMBER OF osteopathic medical schools has risen sharply over the last 10 years and with this, the number of osteopathic students matching in a categorical pediatric residency program has increased from 290 in 2014 to 361 in 2017, to 403 in the 2018 Match.<sup>1</sup> This latter number accounts for 14.5% of 2768 matched categorical pediatric residents in the 2018 Match.<sup>2</sup> As with allopathic medical school graduates, pediatrics is one of the top specialties for applicants,<sup>3</sup> and this continued in the 2019 Match.<sup>4</sup>

When compared to their allopathic counterparts, osteopathic medical schools have an additional emphasis on 2 items: (1) learning osteopathic manipulative medicine (OMM), and (2) emphasizing the importance of treating the entire person utilizing Osteopathic Principles and Practice (OPP). In addition to placing a strong emphasis on the entire person (spiritual, relational, communal, etc.) and their community/environment, OPP includes “the integration of osteopathic philosophy into healthcare practices, specifically: (a) the concept of body unity, (b) the reciprocal nature of structure (anatomy) and function (physiology) and (c) the use of OMM and other interventions to promote the body's self-healing and self-regulatory mechanisms.”<sup>5</sup> Regarding OMM, osteopathic students are required to receive over

200 hours of training in OMM in the first 2 years of osteopathic medical school, and are encouraged to utilize these skills in their clinical years. At its core, OMM is a hands-on, noninvasive set of skills used in the evaluation and treatment of the neuromusculoskeletal system.<sup>6</sup> Students are taught various techniques of manual therapy (referred to as Osteopathic Manipulative Techniques) to increase mobilization of the bones, ligaments, fascia, and tendons to improve physiologic function and support homeostasis. There are approximately 15 major categories of Osteopathic Manipulative Technique (such as muscle energy, soft tissue, etc.) with many not routinely taught during medical school and with few being taught for application in pediatric aged patients.<sup>7</sup>

It is clear that graduates of osteopathic medical schools desire to maintain their OMM and OPP skills and mindset of their professional identity. In a recent survey, 68% of 1523 third year osteopathic medical students indicated that it would be more appealing to attend a residency with osteopathic recognition, with more than half indicating this would play an important role in how they made their rank list.<sup>8</sup>

For pediatric residency programs that offer osteopathic training, there are currently 3 models which applicants can consider. There is the traditional method of applying through the American Osteopathic Association (AOA)

Match for AOA approved programs, but for 2019 only one pediatric residency program actively participated with 5 applicants matching.<sup>9</sup> Also, the Accreditation Council for Graduate Medical Education (ACGME) has developed a mechanism for residency programs to focus on osteopathic training and developed the “Osteopathic Recognition Track” (ORT) for those that meet requirements to have a formal OMM/OPP curriculum. These programs participate in the NRMP Match, and for 2019 there were only 2 pediatric programs.<sup>10</sup> Finally, several programs state that they provide additional training in OMM and OPP for osteopathic residents but the level of OMM/OPP training is not well defined and not consistent with ACGME ORT standards.

It is our experience that a large percentage of Doctor of Osteopathy (DO) students applying for a pediatric residency position welcome the opportunity to maintain their OMM skills. On average over the last 3 years, close to 350 DO applicants have applied to our categorical general pediatric residency program annually, of which up to 250 each year have also applied to our ORT, which is part of the categorical program. This experience suggests that if more residency programs developed an osteopathic track training option, there would be sufficient number of interested DO students to pursue these positions.

In this article we describe our experiences in developing and refining our ORT, the first ACGME approved pediatric ORT. We believe this can provide a template for other pediatric programs to consider to meet the interests of those DO students committed to maintaining their OMM/OPP skills as a pediatricians. We use Bloom’s taxonomy as a framework for developing this residency training initiative, and hereby present details of the development and refinement of our ORT in this manner.

## APPROACH

### SETTING/CONTEXT

Pediatric osteopathic residency training has been present in Columbus Ohio for over 3 decades, initially at Doctors Hospital as an AOA approved residency program. With time Columbus Children’s (current day Nationwide Children’s) worked with Doctors Hospital to develop a dual accredited program with the first graduating class in 2008. With the changes with single accreditation, this program was granted osteopathic recognition by the ACGME in 2016 and starting in July 2017 became the ORT in the categorical program at Nationwide Children’s. This program trains 4 residents per year in one of the largest children’s hospitals in the country.

The overall structure of the program has been described previously,<sup>11</sup> but due to a voluntary ACGME self-study visit in 2015 we refined our program aims and made major changes in the overall structure of the program. These changes were further refined by the initial ORT application visit in 2016 and the most recent 1 year ORT visit for final accreditation that was held in the fall of 2018.

The change in our program aims was to emphasize (1) maintaining overall OMM and OPP skills and by developing pediatric-focused OMM skills and (2) developing expertise to become future thought leaders in osteopathic pediatrics, regardless of which subspecialty field the residents choose to enter. This necessitated changes to our curriculum with less emphasis on a block format (rotations specific to the ORT) but more emphasis on longitudinal experiences with multiple opportunities to learn and practice OMM monthly. This change allows the ORT residents to spend more time with the categorical residents in rotations but still have protected short periods (on average 4 hours per rotation) for formal ORT training and more emphasis on OMM/OPP work in their continuity clinic and journal clubs. We also redesigned our lecture series and journal club approach to focus more on developing future thought leaders in osteopathic pediatrics by discussing real pediatric cases, possible approaches to treating them osteopathically, gaps in the research on the efficacy of these treatments and how a study(ies) could be developed to fill these gaps.

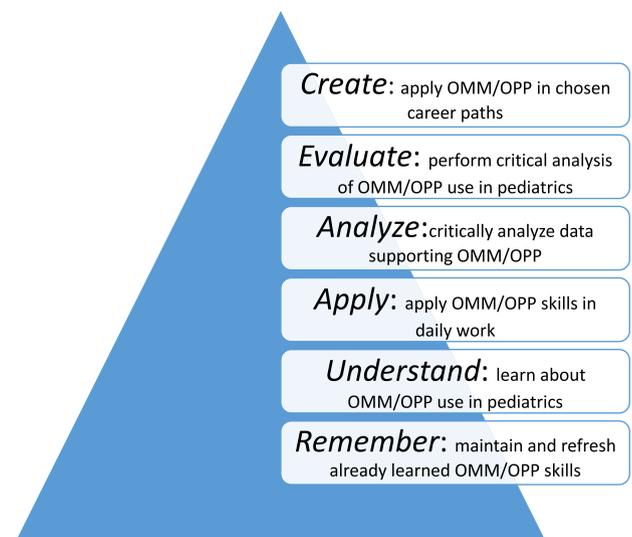
As noted earlier we have approximately 250 applicants to our ORT annually, which represents an increase from approximately 80–100 a year prior to the major revisions in our training approach dating to 2015.

### OSTEOPATHIC TRAINING CURRICULUM

What follows is a more detailed look at our osteopathic training curriculum as viewed through the lens of Bloom’s taxonomy. Per Nationwide Children’s Hospital IRB policies, this description is not considered human subjects research and no IRB approval was indicated (Figure).<sup>12</sup>

#### 1. Remember

(Our Goal: To maintain and reinforce basic OMM and OPP knowledge and skills): All osteopathic medical students have extensive OMM training in their first



**Figure.** Bloom’s taxonomy as applied to our track. OMM indicates Osteopathic Manipulative Medicine; OPP, Osteopathic Principles and Practice.

2 years of school, but the rigor of instruction and quality and quantity of OMM experiences during the clinical years varies widely. In addition, the exposure to OMM education applicable to pediatric patients also varies between schools as well as during clinical rotations. Thus, during August of intern year, all 4 of the ORT interns participate in an introduction to OMM/OPP during a community health/advocacy/OMM rotation. This is the first of 4 ORT specific rotations. The 4 ORT interns spend time with the ORT director reviewing common Osteopathic Diagnosis and Treatment Techniques and learning how to apply them to children. They simulate actual clinical care, relying on practice sessions with one another and voluntary real patients. Using OMM clinical skills checklists developed by local ORT residencies (such as Family Medicine) each intern's ability to apply basic OMM skills is assessed and developed to ensure that all 4 interns are competent to practice in the clinical setting of their supervised continuity clinic. During this rotation the interns are also introduced to basic community and population health topics with an OPP framework (2 week experience) including visits to local community resources near their continuity clinic. For additional OMM education, during each rotation all of the ORT residents have 1 half day of protected time (referred to an Osteopathic Focused Education Day [OFED] and typically attended by 10 of our 12 residents per rotation). During this half day OMM approaches in a body system or applied to a specific clinical problem are reviewed and practical OMM clinical skills are practiced. The same OMM clinical skills checklists are used to assess competence to assure that each resident develops the desired OMM skills and we are currently developing additional pediatric OMM clinical skills checklists for better training and competency assessments.

## 2. Understand

(Our Goal: Teaching our resident how to know and apply OMM/OPP knowledge in pediatrics): OFED day lectures are designed to take OMM skills and translate them to use in pediatric patients. Lectures focus on specifics in physiology and osteopathic techniques appropriate for various pediatric ages. In addition, to augment the residents' understanding and OMM skills we conduct a 2 day OMM retreat each spring that features a pediatric OMM expert who focuses on developing greater understanding and OMM skills in one area of pediatric care. To further address OPP knowledge, our ORT residents work together in one specific continuity clinic. This clinic is active in the community and the residents pursue opportunities to serve the community through participation in local events, such as volunteering in the local library, food distribution efforts, and Holiday parties for children in the community.

## 3. Apply

(Our Goal: Have the residents apply this OMM/OPP knowledge in their daily work): During continuity clinic sessions (over 50 half days per year) each resident is

encouraged to schedule at least one patient who is a candidate for OMM. This allows the residents to continue to apply the knowledge learned during OFED days as well as refine their own clinical approach to the patient. Additionally, during the second year of training, each resident has a second ORT specific rotation, an OMM rotation. This rotation integrates training with pediatric OMM providers in clinic (currently 2), local pediatricians who utilize OMM in their practice, a hematology/oncology fellow at Nationwide Children's who has developed an OMM clinic for oncology patients and/or faculty from the Ohio University Heritage College of Osteopathic Medicine, Dublin campus in central Ohio. Residents additionally have the opportunity to help "table-train" during the OMM educational labs for first and second year students at the nearby OUHCOM Dublin campus, providing them with exposure to the academic focus as well as a mentorship role. Residents also have the opportunity during this rotation to shadow other specialties that are complementary to OMM such as physical therapy, in an effort to improve their biomechanical knowledge as well as their relationship with a broader group. These various experiences during the OMM rotation allow our residents to learn from a variety of OMM providers and see how the same problem (eg, lower back pain) can be approached often using different OMM techniques. During this rotation each resident is involved in the care of an additional 30 pediatric patients. Residents are encouraged to use OMM in the inpatient setting when appropriate and with approval of the attending physician. As with the continuity clinic, the average number of inpatient cases is low at this time (about 5 per resident at this time). In regard to OPP, the third ORT specific rotation involves a second year rural rotation where residents work with the pediatricians at a community medical center (Licking Memorial Hospital in Newark Ohio, about 40 miles from Nationwide Children's). Several members of this group are active in their community and our residents are encouraged to attend health fairs and preparticipation screening events with them. To track our residents' development, we are developing a method whereby the residents can maintain a log of both clinic and inpatient OMM encounters, including clinical problem and techniques utilized. This data will be useful for continued refinement of our OFED day curriculum and clinical training.

## 4. Analyze

(Our Goal: Teach the residents how to critically analyze the data supporting OMM): While developing their OMM skills is vital, it is just as important that our ORT residents learn to critically analyze the role of OMM in pediatrics. With few studies that address the safety and efficacy of OMM in children, this is an ongoing challenge. In addition to the monthly OFED, the residents also have journal club each month. Each journal club is required to meet specific standards in reviewing current AAP guidelines and classic research articles. In addition to this, the ORT journal club 3–4 times a year also reviews a research study evaluating efficacy and safety

of OMM for a particular clinical problem (usually adult studies). In all sessions there is a discussion about how the findings in the article could be applied to children and as importantly how a pediatric specific study could be developed to evaluate the efficacy of this approach in the pediatric-aged population. Of note the journal club articles are matched to the body system/problem discussed at OFED that month. Other opportunities that allow our residents to further analyze safety and efficacy of OMM arise from our partnership with a nearby campus of the Ohio University Heritage College of Osteopathic Medicine. This school offers several opportunities (on average 4–6 per year) for our residents to either attend an in depth OMM training seminar (recent example: 8 hour course on the use of OMM for specific sports medicine issues) or a local OMM conference. Finally, our third year residents also attend one of the major national osteopathic conferences (such as the annual AOA sponsored OMED meeting). All of these activities allow our residents to learn to critically analyze OMM studies and build the confidence to potentially engage in future studies.

#### 5. Evaluate

(Our Goal: have the residents perform a critical analysis/academic endeavor involving a specific osteopathic topic): As noted earlier one of our 2 main ORT goals is to develop future thought leaders in osteopathic pediatrics. In order to facilitate this, a final ORT specific rotation during the third year is dedicated to developing an academic project for the residents. We had several residents start OMM clinical trials, but we realized that the time required for these was not conducive to the time allowed for these to be completed. Despite this complexity, residents have been able to complete 1 clinical trial but it took several years and multiple resident classes to finish (OMM as an adjunctive treatment in children with asthma, manuscript in preparation). Residents can still start clinical trials but are asked to develop a succession plan so as to ensure completion. For most residents, the emphasis now is on: (a) developing educational modules that can be used to teach either DO students as well as their MD resident colleagues about OMM, (b) evaluating the impact of OMM on quality of life of patients or time to return to play, (c) looking at OMM utilization by our residents and (d) the financial implications of using OMM in a pediatric clinic setting. An academic product is required of all of our graduates, and to date the 2 classes that have graduated under the ORT designation (class of 2018 and 2019) have achieved this. Thus, with this structure, all of our ORT residents should progress to this level of Bloom's taxonomy.

#### 6. Create

(Our Goal: Have the residents apply the OMM/OPP knowledge in their chosen career paths): This is the ultimate goal of the program, our graduates using OMM and OPP in ways specific to their chosen field. To date several graduates have achieved this: one graduate who is an Academic Pediatrics fellow running an OMM clinic in our primary care clinics, another who is

a Pediatric Hematology/Oncology fellow who has developed an OMM clinic specific for oncology patients and 3 as general pediatricians at larger pediatric academic centers who use OMM in their clinic. Several of our 2019 graduates plan to develop OMM specific clinics in their chosen fields (eg, Sports medicine and Developmental Behavioral Pediatrics) during and after completion of their fellowships.

## DISCUSSION

While the single accreditation process appears to have increased the number of academically minded osteopathic training programs through the ORT mechanism in such specialties as Family Medicine and Internal Medicine, it seems to have led to the opposite effect in pediatrics. The number of pediatric residencies that have pursued the ORT designation or are still in the AOA match is substantially less than several years ago, limiting the training options for DO medical school graduates who are interested in developing and maintaining their osteopathic skills. While there is limited understanding of how many DO students applying for pediatric residency feel that maintaining their osteopathic skills is vitally important, our experience is that this is significant and it is likely that if more ORT spots were open the spots would be readily filled by very qualified candidates. Our hope is that this description of our ORT program can inspire and inform other pediatric programs to develop ORT options as well.

We recognize that we have the advantages of both a long history of pediatric osteopathic training in Columbus (with the Doctors Hospital program first developed over 30 years ago) and having an active campus of the Ohio University Heritage College of Osteopathic Medicine nearby and actively engaged with us. However, there is a growing number of DO schools and many of them require a pediatric affiliate which could lead to mutually beneficial relationships with other pediatric residency programs. This development would also help with one of the major challenges we face, that is finding effective pediatric OMM providers to train our residents. Also, affiliations with osteopathic medical schools could lead to opportunities for sharing educational resources and evaluation tools, as we have done with our Family Medicine residency colleagues in Ohio.

Our program is designed for our residents to fully learn, but as importantly, incorporate their OMM and OPP skills into clinical practice, regardless of the field of pediatrics that is chosen. The combination of a limited number of ORT specific rotations (4) with more emphasis on longitudinal OMM practice has been well received and has allowed our ORT residents to increase their actual OMM time with patients. In addition, this structure lends itself for a very large and very busy pediatric training site where finding protected time for our residents is a challenge.

Many challenges remain including finding protected faculty time (currently our Director of Osteopathic Medical Education, Dr Zmuda, receives 0.1 FTE for ORT resident education outside of working with them in clinic,

and one of the residency associate program directors, Dr Rakowsky, works with the ORT as part of his associate program director duties), increasing the number of pediatric trained OMM providers, finding more time for our residents to present and publish their academic work and the time constraints that limit inpatient OMM due to the volume of patients that need acute care. Still, we are fortunate to have a great group of residents who are passionate about our track, who actively recruit for our program and we are blessed each year with another group of devoted and talented interns.

## CONCLUSION

We present a robust pediatric ORT model that allows for training pediatric residents interested in developing and maintaining their osteopathic skills. Given the proper commitment and access to sufficient osteopathic resources, this model could be successfully implemented at other larger, busy pediatric training sites, and meet the needs of motivated osteopathic medical school graduates interested in a professional identity characterized by OMM and OPP.

## ACKNOWLEDGMENTS

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