Osteopathic Medical Education
The Student Perspective

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Disclaimer

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Goals and Objectives

To review data from student surveys regarding student opinions on various aspects of osteopathic medical education

To review COSGP projects developed to supplement osteopathic medical education in response to student feedback

To provide an overview of COSGP involvement in projects with separate organizations regarding osteopathic medical education
COSGP Conducted Research

- The Difference a Curriculum Makes
- Osteopathic Medical Student Perspectives on Osteopathic Manipulative Medicine
- COMLEX Levels 1 and 2 Student Preparation and Outcomes
Of Note

- Please note that this is a greatly abbreviated overview of a small portion of the results of our studies
- We hope to further our data analysis over the coming months and share additional findings soon
The Difference a Curriculum Makes
Background

- Osteopathic medical schools must meet the accreditation standards set forth by the COCA, but requirements provide a broad outline of what should be included in a curriculum and allow a significant variation in how curriculum is delivered.

- Past studies have demonstrated that different undergraduate curriculum models make a difference in student outcomes and in a student’s future ability to perform as a physician.

- The AAMC, working with MedBiquitous, has attempted to analyze different medical education methods centrally through their past CurrMIT and current Curriculum Inventory Standards projects.
Method

- A survey was developed using the standardized MedBiquitrous curriculum vocabulary
- The survey received IRB exemption
- The survey was disseminated to the most advanced student who has been most involved with each COM’s curriculum over the past year by the COM’s COSGP delegate and they were given 2 weeks to complete the survey
- Their responses were then shared with the COM’s COSGP delegate (or alternate if the delegate completed the survey) to verify and vet the responses, they were given 2 weeks as well
Results

• 35 schools participated
  • Main Campus – 29
  • Branch Campus – 5
  • Additional Location - 1

• Different types of curriculum methods used
  • Systems Based, PBL – 1
  • Systems Based – 14
  • PBL – 2
  • Patient Presentation Based – 1
  • Discipline Based Method – 2
  • Combined Systems Learning with PBL – 1
  • Blended – 13
  • 1\textsuperscript{st} Year Discipline Based, 2\textsuperscript{nd} Year Systems Based with PBL in between – 1
Results

Group Discussion Utilization

- Small (<12): 29%
- Large (>12): 6%
- Both: 48%
- No: 6%
- Blank: 11%

Independent Learning

- Yes: 72%
- No: 17%
- Blank: 11%
Results

Distance Learning

- Yes - Asynchronous: 26%
- Yes - Both: 31%
- No: 43%
- Synchronous: 0%
Results

Clinical Experience in Pre-Clinical Years

- No: 31%
- Yes - Ambulatory: 23%
- Yes - Inpatient: 9%
- Yes - Both: 37%
Assessment

Clinical Performance Assessment Method Overall Totals

- Institutionally Developed Exams 18%
- NBME Subject Exams 20%
- NBOME COMATs 54%
- Other 2%
- Blank 6%

End of Rotation Exams Included in Overall Grade or Reported Separately

- Included in overall clinical grade - 26
- Reported Separately - 5
- Blank – 4
Assessment

How are Clinical Grades Reported

- Pass/Fail with Honors
- Pass/Fail
- Numerical Value, Pass/Fail with Honors
- Numerical Value, Pass/Fail
- Letter Grade, Numerical Value
- Numerical Value
- Letter Grade

Overall Totals

- Pass/Fail with Honors
- Pass/Fail
- Numerical Value
- Letter Grade

0 5 10 15
Assessment

School Requirements before take COMLEX USA (1 or 2)

- Yes 80%
- No 20%
Assessment

Time Provided to Study for Licensing Exams

- >4 Weeks
- 4 Weeks
- 3 Weeks
- 2 Weeks
- 1 Week

0 5 10 15 20
Technology and Innovation

Audio/Visual Recording/Notes Service Offered for Lectures in Pre-clinical Years

- No
- Video, Notes Service
- Audio, Video, Notes Service
- Audio, Video
- Video
- Audio
Technology and Innovation

- No
- Yes - Both
- Yes - Optional
- Yes - Required

Categories:
- Incorporate Task Trainer
- Incorporate Simulation Opportunities
Technology and Innovation

Flipped Classroom Utilization

- Yes: 63%
- No: 37%

Frequency:

- Daily
- Weekly
- Monthly
- Bi-monthly
- A few times a year
- Once per year
Technology and Innovation

Education on Interprofessionalism

Yes

Education on Leadership

Yes
Osteopathic Medical Student Perspectives on Osteopathic Manipulative Medicine
Background

- Osteopathic Manipulative Medicine (OMM) has been a central teaching of osteopathic medicine since its inception with the founder AT Still.
- It is also a part of the accreditation standards from the COCA to teach OMM to all osteopathic medical school students.
- With the accreditation standards, there is flexibility to teach OMM and different COMs/SOMs teach it differently.
- It has been observed that students’ attitudes towards OMM can change over the course of their medical school career and can be impacted by the teaching style and formatting of their respective school.
Method

- A survey was developed to gather both demographic data on students and their opinions on OMM and their dedication to its use in their future careers
- The survey received IRB exemption
- COSGP delegates distributed the survey to all students at each COM
- Students had 2 weeks to complete the survey
Results

- 35 schools had students participate
- Total number of respondents was 2426
Results by OMS Year

- Commitment Prior
- Current Commitment
- Competency in Understanding
- Performance Proficiency

OMS-1
OMS-2
OMS-3
OMS-4
OMS-5
Results by Hours in Lecture

Commitment
- Prior
- Current
- Commitment

Competency in Understanding
- 1.2 Hours
- 3-4 Hours
- 5-6 Hours
- 7-8 Hours
- 9-10 Hours
- >10 Hours

Performance Proficiency
Results by Hours in Lab
Results by Clinical Experience Hours

- Commitment Prior
- Current Commitment
- Competency in Understanding
- Performance Proficiency

Legend:
- None
- 1-5 Hours
- 5-10 Hours
- 10-25 Hours
- 25-50 Hours
- >50 Hours
COMLEX Levels 1 and 2 Student Preparation and Outcomes
Background

- COMLEX-USA licensing examinations are a criteria set by the osteopathic profession to ensure competence of osteopathic physicians.
- There has been a movement toward using these examination results in determining residency placements, causing much stress and anxiety for students as they begin preparing for these exams.
- Adding to this is the stress of sifting through the multitude of preparation materials to determine the best resources to use for review.
- Started from an NSU-COM study.
Method

- One survey was developed for each COMLEX Level 1 and Level 2 asking about their COMLEX outcome and preparation methods
- The survey received IRB exemption
- COMLEX Level 1 survey was open to anyone who had taken COMLEX Level 1 since January 2014 and COMLEX Level 2 to anyone who had taken COMLEX Level 2 CE since January 2014
- COSGP delegates distributed the survey to all appropriate students at each COM
- Students had 1 month (February 22-March 22) to complete the survey
Previous Results (2013-2014)

- 13 schools had respondents with 399 responses for the COMLEX Level 1 survey and 306 responses for the COMLEX Level 2 survey
- COMLEX Level 1 scores ranged from 385-840 with an average of 547
- COMLEX Level 2 CE scores ranged from 400-850 with an average of 578
Previous Results Level 1

- Majority of students spent 3-4 weeks or 4-8 weeks preparing solely for COMLEX
- Students in the top 20% of their class were found to have an average 610 while other students were found to have an average of 522
- Top 4 student preparation resources were First Aid for the USMLE Step 1, USMLEWorld, COMBANK and Doctors in Training
- Of respondents, 48% also took USMLE with an average score of 224
Previous Results Level 2 CE

- Majority of students stated their school helped prepare them through COMATs on clinical rotations
- Students were more likely to consider their education (or clinical rotations) adequate preparation without specific review than with Level 1
- Because they viewed their clinical rotations and COMAT studying as preparation for Level 2 CE, majority of students reported spending greater than 6 weeks preparing for Level 2 CE
Results (2014-2015)

• ALL schools had respondents with 719 responses for the COMLEX Level 1 survey and 658 responses for the COMLEX Level 2 survey.

• COMLEX Level 1 scores ranged from 183-833 with an average of 566.

• COMLEX Level 2 CE scores ranged from 235-899 with an average of 582.
Level 1 Results – Preparation Time

- Minimum
- Maximum
- Average

<4 Weeks  |  4 to 5 Weeks  |  5 to 6 Weeks  |  7 to 8 Weeks  |  >8 Weeks

Preparation Time
Level 1 Results – The USMLE

COMLEX Scores for students who did or did not take the USMLE

USMLE Step 1 Scores
Minimum – 119
Maximum – 226
Average – 230
Level 1 Results – The USMLE

COMLEX Scores for students depending on when in relation to COMLEX they took their USMLE.
Level 1 Results – The USMLE

Satisfaction with taking USMLE

Satisfaction with NOT taking USMLE
Level 1 Results – Lecture Attendance

Minimum Attendance

- None/Few
- <25%
- 26-50%
- 51-75%
- 76-100%

Maximum Attendance

- None/Few
- <25%
- 26-50%
- 51-75%
- 76-100%

Average Attendance

- None/Few
- <25%
- 26-50%
- 51-75%
- 76-100%
Level 1 Results - #1 Resource

- Other
- BBC
- COMQUEST
- COMBANK
- Micro Made Simple
- Pathoma
- Goljan Lectures
- Goljan Pathology
- DIT
- Kaplan Q-Bank
- USMLEWorld
- BRS Pathology
- Savarese Review
- Kaplan Books/Course
- First Aid
Level 1 Results – Resource Outcomes

Average

Maximum

Minimum

COMQUEST
COMBANK
USMLEWorld
Level 1 Results - #2 Resource

- Other
- BBC
- COMQUEST
- COMBANK
- Micro Made Simple
- Pathoma
- Goljan Lectures
- Goljan Pathology
- DIT
- Kaplan Q-Bank
- USMLEWorld
- BRS Pathology
- Savarese Review
- Kaplan Books/Course
- First Aid

0 50 100 150 200 250
Level 1 Results - #1 LEAST Helpful Resource

- Other
- BBC
- COMQUEST
- COMBANK
- Micro Made Simple
- Pathoma
- Goljan Lectures
- Goljan Pathology
- DIT
- Kaplan Q-Bank
- USMLEWorld
- BRS Pathology
- Savarese Review
- Kaplan Books/Course
- First Aid
Level 2 Results – Class Rank

![Bar chart showing levels of results for Class Rank, with categories for Minimum, Maximum, and Average. Bars are color-coded for Bottom 20%, Top 80%, Top 40%, and Top 20%.]
Level 2 – Shelf Examinations

Minimum

Maximum

Average

School Written

NBME

NBOME
Level 1 Results – Preparation Time

- Minimum
- Maximum
- Average

Weeks:
- <4
- 4 to 5
- 5 to 6
- 7 to 8
- >8
- Year Round
Level 2 Results – The USMLE

COMLEX Scores for students who did or did not take the USMLE

USMILE Step 1 Scores
Minimum – 203
Maximum – 279
Average – 242
Level 2 Results – The USMLE

COMLEX Scores for students depending on when in relation to COMLEX they took their USMLE.
Level 2 Results – The USMLE

Satisfaction with taking USMLE
- Yes
- No
- Undecided

Satisfaction with NOT taking USMLE
- Yes
- No
- Undecided
Level 2 Results - #1 Resource

- Other
- Kaplan Q-Bank
- Kaplan Books/Course
- Step Up to Step 2
- Step Up to Medicine
- Blue Prints
- Case Files
- COMQUEST
- COMBANK
- USMLEWorld
- Savarese Review
- First Aid
Level 2 Results - #2 Resource

- Other
- Kaplan Q-Bank
- Kaplan Books/Course
- Step Up to Step 2
- Step Up to Medicine
- Blue Prints
- Case Files
- COMQUEST
- COMBANK
- USMLEWorld
- Savarese Review
- First Aid
Level 2 Results – Resource Outcomes

- Average
- Maximum
- Minimum

Comparison of resource outcomes across three platforms: COMQUEST, COMBANK, and USMLEWorld.
Level 2 Results - #1 LEAST Helpful Resource

Other
Kaplan Q-Bank
Kaplan Books/Course
Step Up to Step 2
Step Up to Medicine
Blue Prints
Case Files
COMQUEST
COMBANK
USMLEWorld
Savarese Review
First Aid
Projects to Supplement Student Education

- Osteopathic Medical Education Webinar Series
- Student Resources and Advice Sharing
- New School Mentorship Program
Osteopathic Medical Education Webinar Series

• Developed to supplement osteopathic medical education with topics interesting to students but not always covered in the osteopathic medical curriculum

• Nutrition and Exercise for Primary Care by Dr. Cecilia Rokusek

• Future topics
  ▪ The Business of Medicine
  ▪ Dealing with Death
  ▪ Evidence Based Medicine
  ▪ Contract Negotiations
Student Resources and Advice Sharing

- Students were surveyed on all aspects of their osteopathic medical education from the basic sciences to clinical rotations to applying for residency asking what resources and advice they would be willing to share with their peers.
- Students were given 1 month to complete the survey.
- There were 338 respondents from 35 COMs.
- 91 OMS-I, 82 OMS-II, 69 OMS-III and 87 OMS-IV with 1 OMM Fellow and 8 Unknown.
- Resources and Advice section of COSGP.org.
  - About 4,000 views since late February.

COSGP.org
Osteopathic Medical Student Resources and Advice

We polled all osteopathic medical students on their top resources and advice for getting through all aspects of medical school. All students were surveyed on the same topics. We got 308 total responses from students from 55 osteopathic medical schools. There were 94 first year students, 82 second year students, 69 third year students, 87 fourth year students, 10 MFM Fellow and 8 unknown responders. The MFM Fellow and Unknown responses were included in those of other students.

Below are their responses:

Please note, these are all based solely on responses from osteopathic medical students in a voluntary survey and COGSP does not support any resources over others. This is simply a platform for information sharing between osteopathic medical students.

Anatomy

Osteopathic Manipulative Medicine

Biology and Biochemistry

Cell and Molecular Biology
Student Resources and Advice

Anatomy Resources and Advice

- Resources and Advice from First Year Students
- Resources and Advice from Second Year Students
- Resources and Advice from Third Year Students
- Resources and Advice from Fourth Year Students
# Student Resources and Advice

## Sharing

### First Year Anatomy

**Books**
- Anatomy Coloring Book
- BRS Cross Anatomy
- Color Atlas of Anatomy
  - Thieme Anatomy Atlas
  - Netter Atlas
  - Grant’s Atlas
  - Rohen’s Color Atlas of Anatomy
  - Gilroy Atlas
- Clinical Radiology Made Ridiculously Simple
- Gray’s Dissector
- Gray’s Anatomy
- Lippincott’s Anatomy and Embryology
- Moore Clinical Oriented Anatomy
  - Essential Clinical Anatomy (AKA Baby Moore)

### Electronic Resources
- Anatomy and Physiology Revealed (McGraw Hill Online)
- Anatomy and Physiology Software
- Firecracker (2)
- Quizlet Flashcards
- USMLERx Questions

### Applications
- Essential Anatomy App (9)
- Visible Body (3D Human Anatomy) App (2)
- Radiology Head App
- Anatomy Essentials 3 App

### Websites
- BioDigital Human
- Net Anatomy
- Teach Me Anatomy
- University of Michigan Medical School
- The Body Online
- Acland Anatomy
- Grant’s Anatomy Lab
- Winking Skull
- YouTube
  - Videos for Embryology
  - Anatomy Zone
  - Peter Ward videos

### Additional Resources
- Anatomy Models
- Gray’s Anatomy Review Questions (6)
- Netter Flashcards (7)
- Rohen’s Flashcards

### Advice
- Master pictures and cartoon versions of structures before lab
- Go to class every day
- Write your own practice test questions
- Don’t try studying from an atlas only. Always spend plenty of time in lab with someone who knows what they are talking about. Guessing what you are looking at will only hurt you in the end. Bodies all look different (color, size, etc.) to view as many as possible. Also remember to treat the cadaver as a person. They volunteered their body to your education so respect that. He or she was a child, parent, and/or sibling. If you remember this, you will never lose respect for your cadaver.
- Spend time in anatomy lab. It can be very gross but is a great way to learn the material. When you are learning systems, it is difficult to think back about how the body looks underneath your skin.
- Learning the structural principles of osteopathic medicine will help you learn and remember anatomy.
- Cadavers are the best tool for learning anatomy.
- Using the cadaver was much more helpful than I originally thought it would be. For me to understand anatomical structures, I had to touch, see,
New School Mentorship Program

• Executive Board Mentorship

• 3rd and 4th Year Webinar Series
  ▪ 3rd Year and Succeeding on Clinical Rotations
  ▪ Licensing Exam Preparation and COSGP Research
  ▪ 4th Year and Preparing for Residency Applications
  ▪ Live 3rd and 4th Year Q&A Panel
    ▪ About 80 live attendees and 200 recording views

• Regional Mentorship Program
Presentations to Supplement Medical Education

- Osteopathic Medical Education
- 3rd Year and Succeeding on Clinical Rotations
- Licensing Exam Preparation, Resources and COSGP Research
- 4th Year and the Match
- The COCA Handbook
- Graduate Medical Education – Reflecting on Past and Present Trends
- Medical Education Technology
- Interprofessionalism
Interactions

- **AACOM**
  - Osteopathic Entrustable Professional Activities development
- **The COCA**
  - Student representation at meetings
  - GME
  - Addressing student gender discrimination concerns
  - Facilitating discussion on new methods of soliciting student feedback for re-accreditation procedures
- **COMSSO**
  - Third/Fourth Year Surveys
Thank You

Questions?