A 14-item online questionnaire was designed to gather basic information, effective practices, and concerns about student involvement in medical education at central region medical schools. The questionnaire was distributed via the COSR listserve in April 2014. A total of 22 persons responded, representing 17 of 30 schools with registered COSR representatives (56.7% response rate).

**Student participation in 3 types of curricular activities**

Most respondents believed that their schools gave students the opportunity to participate in curricular design, but only about half thought students were involved in implementation of new curricula (Fig. 1). Student input in these two types of curricular activities ranged from reactive feedback (e.g. town halls, pilot studies, and needs assessments) to active participation with faculty and administrators (e.g. curriculum committees, curricular retreats, opportunities/electives to design and/or implement new courses).

In contrast to curriculum design and implementation, all respondents agreed that medical students were heavily involved in curricular evaluation (Fig. 1), and both reactive feedback from and active participation by students were facilitated by a large majority of schools (Fig. 2).

**Empowering student involvement in medical education**

There was much more variability on how schools support and enable students to participate in curricular design and evaluation (Fig. 3). Of note, it is likely that other options for administrative support of student involvement in medical education exist beyond those listed in the questionnaire.

**Challenges in student engagement**

While some opportunities exist for students to be involved in medical education, most active forms of engagement center on curricular evaluation, and less in curricular design and implementation. Existing structures for higher level engagement are often not student-friendly due to lack of training and meeting logistics that conflict with academic obligations. When students only give reactive feedback, there is a diminished understanding of the medical education process and how/when feedback is incorporated. Communication issues exist not only between school administration/faculty and students, but between generations of students as well.

Much work remains to explore how students can be engaged in medical education more deeply. In particular, study of the challenges and opportunities common to many schools could yield insight on effective practices that OSR representatives can bring back to their home institutions.
### Detailed Questionnaire Results

**Schools that responded to the questionnaire included:**

- Chicago Medical School at Rosalind Franklin University of Medicine and Science
- Cleveland Clinic Lerner College of Medicine of Case Western Reserve University
- Indiana University School of Medicine
- Medical College of Wisconsin
- Michigan State University College of Human Medicine
- Northwestern University Feinberg School of Medicine
- Oakland University William Beaumont School of Medicine
- Saint Louis University School of Medicine
- Southern Illinois University School of Medicine
- Ohio State University College of Medicine
- University of North Dakota School of Medicine and Health Sciences
- University of Chicago Pritzker School of Medicine
- University of Illinois College of Medicine at Rockford
- University of Minnesota Medical School
- Washington University School of Medicine in St. Louis
- Wright State University Boonshoft School of Medicine
- University of Nebraska Medical Center

*Open-ended responses are sorted randomly, with the exception “What medical education changes at your school are unique and could be discussed at the meeting to benefit all schools?”

![Bar chart](chart.png)

**Examples of curricular design given in the question prompt included needs assessments, discussing content with faculty, and designing new sessions. Examples of implementation of new curricula included teaching sessions and faculty development. Examples of curricular evaluation included feedback forms and curriculum committees. The most frequent response for institutions with multiple responses recorded is depicted.**

**If students are involved in curriculum design, please provide examples.**

- Students were invited to sit on Curriculum renewal steering committee and participate in high-level discussions on gaps/needs in current curriculum.
- Senators meet with course directors on a weekly basis to give feedback. Student representative on all committees, so new changes always have student input.
- Our school put on three Curriculum Retreats this year in order to get all course directors together with student leaders to brainstorm new and innovative ideas on improving the curriculum. Topics including how to better incorporate clinical experiences, increasing collaborative learning, and how to vertically integrate and horizontally integrate different courses to reiterate certain material and avoid too much repetition of certain topics.
- These are typically student sought opportunities in topics such as electronic health record focused communication skills and international health.
- Students have been involved in every stage of curricular reform so far. They serve alongside faculty and staff on small group teams to create learning objectives and assessments about pre-defined topics. They have been invited to opportunities to learn more about curricular design.
- Recently, the Medical College implemented the Discovery Curriculum to replace the existing traditional model. The new curriculum introduced new courses and radically changed the structure of both the preclinical and clinical years. During the development phase of the Discovery Curriculum, student representatives to the Curriculum and Evaluations Committee were invited it to provide feedback solicited from the student body on various issues. In addition, the Medical College's is currently in process of opening up two regional campuses. These campuses are to be 3-year curricula designed to specifically train primary care physicians. Accordingly, significant changes are being made to the curriculum to fit into a three year program. Once again, students were invited to serve on the regional campus steering committee and provide feedback on curriculum issues.
- Students were involved in feedback settings such as town hall meetings and pilot studies. This summer, a group of incoming students were offered a chance to be a part of a pilot study to appraise the efficacy of the additional clinical experiences that are a part of the new curriculum.
- 2 student members at both curriculum planning retreats and voting members on the curriculum committee.
• Our school implemented a new curriculum in 2012, and students were involved in curriculum design throughout the entire planning process. Students served on the College of Medicine's Executive Planning Committee and all curriculum committees to ensure that student input was provided each step of the way. Also, the Deans at the College of Medicine as well as several faculty members met with the Student Council periodically to provide updates on the new curriculum design.

• We have student representatives on each year's curriculum committees (M2-M4), which are the ones that design, change, and implement new curricula. Also, we have an M2 focus group for their classes that meets with the Dean of Academic Affairs monthly who come with concerns brought by their fellow students regarding the current curriculum.

• Students have designed elective courses for first year and fourth year that have continued in the curriculum for future years. Also, students can take a year off to do curriculum work with faculty in a particular course and get credit for it. I think the class's President and Medical Education Representative (both on Medical Student Government) get to serve on committees regarding curriculum design but I'm not sure how much say they actually have in those discussions.

• Needs assessment surveys are conducted and students provide suggestions to faculty based on the results of those surveys. Faculty are transparent about their implementation of students' suggestions. Students are also involved in designing review sessions and offering feedback regarding which sessions are extraneous or which should be added.

• Class representatives sit on the Biennium curriculum committees and are part of the conversation (though having never sat in on such meetings I do not know how influential said students are).

• Student input is valued and obtained from the deans in various settings: (1) Special 4th year class designed to improve the 1st and 2nd yr curriculum; (2) each class has two curriculum committee members who meet with their faculty and administration/Dean counter parts on a monthly basis with routinely scheduled meetings; Town Hall Meetings with the administration and entire Dean's Staff.

• Our curriculum is constantly changing and molding to fit the needs of our students. We have Y1, Y2, Y3 and Y4 Curriculum Committees, each made up of faculty, professors, and 1 elected student representative from each respective class. These committees make all decisions regarding each individual curriculum. The committee for our class has far exceeded our expectations with their receptiveness to student ideas and suggestions for improving the curriculum. There has not been a single issue brought up to them that has not been addressed, and the majority of these issues have been corrected or implemented. This curriculum committee adapts to students' needs immediately, making changes to benefit our class, rather than waiting and trying out new things for the following class(es).

• We elect curriculum chairs that sit on a monthly-meeting committee including course directors and our dean of academic affairs. We also have formal evaluations with course directors following each course with a group of 7-8 students.

If students are involved in implementation of new curricula, please provide examples.

• Again, students have designed and implemented elective courses for first year and fourth year students that have persisted in subsequent years. Students are involved in the sense that MSTPs serve as Teaching Assistants in courses, and I think the class's President and Medical Education Representative (both on Medical Student Government) get to serve on committees regarding implementation of new curricula but I'm not sure how much power/say they actually have.

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• Again, these would be student sought opportunities that follow the curriculum design. Otherwise students are not asked to be part of this process.

• The new curriculum also is supposed to have upperclassmen have some shared experiences with new students to help teach and mentor them.

• As mentioned above, students from Student Council are appointed to serve on each of our school's curriculum committees. Further, we have peer-to-peer tutoring to help one another master the new curriculum.
• 4th year students often participate as preceptors for MS I&II team based learning groups.
• The students have been polled regarding a flipped classroom environment and have provided input as far as what material should be included or excluded in the course.
• We have student representatives on each year’s curriculum committees (M2-M4), which are the ones that design, change, and implement new curricula.
• We have students who are designated liaisons between faculty and the student body to address any problems that come up during course work for the 1st and 2nd years. Also, we have two committees that a student council member sits on, one for the preclinical years and one for the clinical years.
• Small groups of students often will pilot a new aspect of the curriculum and give detailed feedback, but are otherwise not involved in the implementation of new curricula.

Students are currently working to incorporate case-based learning into our curriculum. Currently, this kind of learning is a student-led effort. In the clinical years, we have student reps that actively provide feedback for clerkship directors so that changes to the curriculum can be made as the year progresses.

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### How are students involved in evaluating the curriculum at your school?

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<thead>
<tr>
<th>Category</th>
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<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students on overarching curr. committees</td>
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<td>5</td>
</tr>
<tr>
<td>Feedback at the end of a session, solicited by school</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Student-led compilation of feedback about particular courses</td>
<td>15</td>
<td>2</td>
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<tr>
<td>Students on clinical curr. committees</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Students on pre-clinical curr. committees</td>
<td>17</td>
<td>2</td>
</tr>
<tr>
<td>Feedback at the end of a course, solicited by school</td>
<td>17</td>
<td>2</td>
</tr>
</tbody>
</table>

**Note:** Categories are sorted by percentage of positive responses. The most frequent response for institutions with multiple responses recorded is depicted.

### How does your school support/enable students to participate in curricular design and evaluation?

<table>
<thead>
<tr>
<th>Category</th>
<th>Yes</th>
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</tr>
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<tbody>
<tr>
<td>Provides background on principles of curriculum design</td>
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<td>9</td>
</tr>
<tr>
<td>Provides access to previous LCME reports on your institution’s programs</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Funds attendance for conferences on medical education</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Allows time away from clinical or preclinical obligations in order to attend meetings</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Provides info on the structure of curr. committees at your institution</td>
<td>14</td>
<td>1</td>
</tr>
</tbody>
</table>

**Note:** Categories are sorted by percentage of positive responses. The most frequent response for institutions with multiple responses recorded is depicted.

**Besides OSR, are there other student representatives at your school involved in curriculum/training reform?**

- Each class elects a student representative to Curriculum and Evaluations Committee, which oversees all medical school curriculum. Student reps serve as liaisons between the committee and their respective classes, and are regularly involved in all discussions related to committees.
• Yes, members that sit on different curriculum and student affairs committees often are not a part of OSR. For example, both the Bock II curriculum committee student members are not a part of OSR.
• Yes. Student senate and many positions open to all students
• Yes, student-elected representatives to Integration, M1/M2, M3/M4, and Evaluations Committees.
• As mentioned above, class representatives attend curricular committee meetings. At some points in time (during my first and second years), the class reps acted as liaisons between the students and the committee, helping to provide a united sense of feedback based on the larger student body (rather than just three people).
• Yes. OSRs are not necessarily directly involved, actually—instead, there are 3 elected academic representatives from each class. Also, 1 dual degree student and 1 MD/PhD student are chosen as academic representatives from among their cohorts each year to serve on the faculty curriculum committees.
• There is a student group dedicated to case-based learning; students within student senate work directly with the administration regarding the curriculum; student reps on the curriculum committee.
• Yes, they are on the LCME committees, preclinical and clinical curricula design and implementation committees.
• Yes, each class has one student government elected official called the MER, or medical education representative, and they serve on curriculum committees. Presidents are often more involved in this process. (There are also) liaisons for each individual course.
• We have a student senate that represents students from all colleges and a student that serves as a Regent for the University system. Both of these organizations help make curriculum changes at an institutional level.
• Just the representatives on curriculum committee.
• Our OSR representatives are not tied into the curriculum structure, therefore all those positions checked above exist completely independently. There may be some overlap in student representation, but that is coincidental.
• Yes, each class has two curriculum committee members
• American Medical Association, two representatives from each class attend national and regional meetings.
• Yes curriculum committee members.
• OSR reps do not have a designated position on any curriculum review committees. Any student in our school is allowed to apply to be on these committees.
• Yes, I do not know the specifics, but they are on the committees that I mentioned above.
• Yes - students are selected through a process conducted by the student council that applies to all school-wide standing committees of the school in which students participate.

What challenges have you encountered with student involvement in medical education?
• Students have to fully seek out opportunities themselves and push forward their ideas. This requires a student to have a more aggressive approach.
• Administration solicits feedback but may not act on it
• Faculty hesitation at student recommendations; Online vs. classroom learning: shifting the paradigm away from in-class attendance and how faculty members perceive that change
• Students have limited understanding of the principles of educational programs. Students are focused on here/now, rather than overarching goals. Students are quick to criticize but lack the skills, time, or experience to develop thoughtful solutions. Faculty are often unable or unwilling to partner with students in the education experience.
• Sometimes unsure of roles, and political/power plays are risky and not very navigate-able at our level.
• It is large, bureaucratic, institution with significant inertia. Many Deans/Professors are open, but those are not the ones that need to change. So it is cultivating change with the inertial professors. Also, truly grasping curriculum design/implementation is difficult as well, due to lack of information.
• Surveys! Everyone hates filling out surveys (not this one, of course!). The biggest challenge is often getting ample student feedback in order for curriculum committees to make good decisions. Often only a few students will provide feedback, and it's difficult to know whether or not those opinions really reflect the larger opinion of the class.
• Students are not given much training about medical education (theory, terminology, resources, common and effective practices, hot topics, etc.) or how to participate on committees alongside faculty and staff. The timing of meetings are a major barrier for participation, and release time for these activities is not typically guaranteed. There is also a lack of awareness about the opportunities to get involved.
• While student feedback is regularly solicited on curriculum and medical education issues, there has been a continuing struggle to see comments and feedback be actually implemented. Often times, despite strong push back from students, administration have been unwilling to address or change aspects of the curriculum.
• The biggest challenge is that sometimes, the opinions and desires of the students are not met with meaningful change. Although, I think it's safe to say that we don't always know what's best for our education so that may be the reason why sometimes the administration is not responsive to our feedback in a way that we would like.
I believe that my school does an excellent job incorporating the student perspective into all medical education decisions made at our College of Medicine.

I've only been on this campus for 9 months, but our pathophysiology course has been revamping their tests to be more consistent with the lecture materials.

There is strong student interest and the faculty and administration are open-minded about our participation. Challenges have really only been the logistics of ensuring that a student representative participates in any given meeting. With almost 300 students in each class, it can be challenging to have a curriculum that meets the needs of all students.

There has been slow progress with student-driven initiatives such as receiving feedback from exams and troubleshooting technology for recording lectures.

There is a substantial time commitment and since most meetings occur during normal business hours, most students have to take absences from their rotations in order to attend, albeit they are excused.

It seems that students are involved in the low and medium level committees, but final decisions are made behind closed doors and at times do not consider the student input. There is only so much students can do to try and get the administration's attention on certain issues and the administration is conservative when it comes to making changes regarding medical education. In some instances, resistance of faculty to change what has been established for years without good reason. Sometimes, resistance to smooth integration of material/technology between different courses because of personal preferences.

If you have further comments about student involvement in medical education, please comment here.

- I think that even though students don't always see the changes that they want to see, I feel that most of our student body is highly satisfied with the fact that my school does a lot to reach out to student in terms of soliciting feedback. I feel that the student body has a strong voice even though we don't always get our way, which is completely understandable and reasonable.
- Overall our school tries to involve students as much as possible, but sometimes we have intergenerational issues. Someone always has to make the "final" decision, but this process (and the inputs that go into it) are not strict.
- Students should be more involved. We are graduate students, highly motivated, and very smart - we want our avg of $170,000 in debt to be worth as much as possible in educational merit, and thus our input is b/c we care and not b/c we want to lessen the education, but b/c we want more. Students have not done a good enough job working between institutions to figure out what works as well as making sure to share the knowledge with the incoming class. The problem for students is that we are transient/temporary, whereas professors are stationary. So we must communicate that much better with our peers.
- Some of our student involvement in medical education actually comes through our predesigned scholarly concentrations requirement. In this, students are exposed to medical education at our institution and given more detailed information about curricular design, reform, and evaluation.
- Student involvement is a thin line in medical education. I definitely believe students should be involved in curricular decisions/changes. However the education process is often a stressful time for many students and for those students sometimes it is easier to complain about or negate changes or certain processes that in the end may prove to be beneficial.

What medical education changes at your school are unique and could be discussed at the meeting to benefit all schools?

- **Cleveland Clinic Lerner College of Medicine at Case Western Reserve University**: Shortening of required clerkships; Electronic health record communication skills
- **Indiana University School of Medicine**: The new curriculum that will be introduced in the Fall of 2015 has a lot of vertical and horizontal integration (e.g. systems-based courses, an ambulatory clerkship instead of separate specialty-based clerkships, etc.) in a competency-based framework. It seems that many schools are adopting some of these elements, so it would be interesting to see where common opportunities and challenges lie.
- **Medical College of Wisconsin**: The Discovery Curriculum was newly implemented with incoming class of 2016. Two unique aspects of the curriculum include the Clinical Apprenticeship component of the M1-M2 years, and the structure of the M3 clerkships. Within the Clinical Apprenticeship, students are paired with a clinical faculty member during the latter half of their first year, and spend a full year working with this person. These clinical experiences are matched up with current lecture topics and additional assignments. The experience is designed to more fully connect basic science curricula with real-life clinical examples, as well as provide preclinical students with access to real patients. Within the Discovery Curriculum, all students complete rotations in "blocks", where clerkships with similar focuses are paired together. For example, students will complete surgery, OB/GYN and anesthesiology clerkships during the same "Surgery" block, and Pediatrics, Internal Med, and Family Med during the "Medicine" block. This new arrangement allows students to more fully explore a particular type of practice within medicine, and better compare and contrast experiences to help with career exploration.
- **Michigan State University College of Human Medicine**: I feel that the idea of having curricular components where students across years interact with each other is a newer concept that could yield a lot of benefit and success.

- **Northwestern University Feinberg School of Medicine**: Education centered medical home - a learning laboratory for clinical skills and medical knowledge in which students are embedded in a patient-centered clinic. They follow a common patient panel with the same cohort of peers throughout their 4 years, under the direction of a single preceptor. Logitudinal learning with active student leadership roles and a non-linear exposure to the content of the preclinical curriculum that serves to supplement the standard lecture series.

- **Oakland University William Beaumont School of Medicine**: Developing LGBT curricula & implementing it has been a great learning experience - would like to see what other schools/students have been working on too

- **Ohio State University College of Medicine**: One of the most interesting medical education changes that has been made at Ohio State is that students have the opportunity to participate in a longitudinal practice model beginning during the first week in medical school and extending throughout the medical school experience. This allows students to obtain hands-on experience from the very beginning of their medical training. Also, each student is assigned a portfolio coach to serve as a mentor throughout medical school. Students meet with their coach after each major exam to review progress and discuss how the student might enrich and improve his/her experience in medical school and gain better preparation for residency.

- **Saint Louis University School of Medicine**: Redesigning curriculum to improve mental health - this has been established and a publication has been accepted. Depression has been reduced by half. We also have protected days once very two weeks in the first two years and once a month in the 2nd yr.

- **University of Illinois College of Medicine at Rockford**: We have the longitudinal family medicine rotation that starts in our M2 year and goes through our M4 year. Besides that, we have incorporated an Interprofessional Experience Day, we give the M2's a health mentor at a local retirement home to practice history taking, and we have community service events built into the curriculum.

- **University of Minnesota Medical School**: One of the biggest benefits to our education is our flexible scheduling process of 3rd and 4th year rotations that allows us to determine when we want to take our required rotations and at what site. It allowed me to do 2 months of research in my specialty early in my 3rd year and postpone my primary care rotations until late in my 4th year, as well as schedule specific free time for vacations, weddings, and conferences.

- **University of Nebraska Medical Center**: We are trying to implement flipped classrooms where students are able to participate in smaller module based learning outside of class and engage in interactive discussions instead of lectures.

- **University of North Dakota School of Medicine and Health Sciences**: We are constructing a new medical school and just finished our LCME accreditation and are in the process of adapting our curriculum in accordance with both of these events. I am not sure yet what the outcome will be.

- **Washington University School of Medicine in St. Louis**: WUMP - Washington University Medical Plunge - mandatory introduction to public health in St. Louis. Although WashU has traditionally sent many students to specialties (a research-intensive school), it is hoped this program will pique the interest of more students in various primary care specialties and public health.

**Are there any questions you would like posed to the general assembly to solve a problem regarding medical education at your institution?**

- We are in the process of reevaluating our 3rd year clerkships and in particular how we are evaluated. We were hoping to start a discussion not about how 3rd years across the country ARE graded, but how we SHOULD be graded. What sorts of evaluation techniques would allow students to feel like they are having a valuable learning experience and are truly getting what they need to become outstanding physicians?

- Medical education didactic opportunities -> who runs them, when do they occur, length, what material they cover, etc.

- How can we enable students to be better partners in the learning environment at their school, rather than consumers? How can we encourage faculty to view students as partners? What learning strategies work best at your school? How does your school facilitate personalized learning (learner-centered learning)?

- Attendance (mandatory or not mandatory?) Grading (Pass fail? Honors?) Actual learning versus checking off boxes

- I would be interested to know how other schools introduce topics regarding recent changes in health insurance coverage and how our medical system will manage those changes in the years to come.

- In an era where online learning and recorded lectures have a lot of perceived value, how does your institution address policies in regards to class attendance and professionalism?

- How much time from the end of M2 year do you have to take Step 1 without any required things from the school?

- How has your school implemented the use of iPads (or other tablet devices) into its curriculum? What is the hierarchy of curriculum change at your institution/ how is it structured?

- Some programs are starting clinical experiences from day one (in the clinic or hospital- not just learning about how to do a H&P or learning the cardiac exam)- without fundamental knowledge, is this helpful in the long run? On the flip side, does having those experiences, help students connect/solidify basic science knowledge to clinical knowledge better?
• Our school has fully embraced video streaming of lectures. As a con, this has changed the culture of our student body and hindered camaraderie amongst students that would exist if students are required to be at school. How do other schools incorporate advanced technology into the curriculum without sacrificing student engagement in the basic sciences?
• There are less than ideal forms for evaluations on clerkships that are prone to grade inflation.