Planning for Learning and Assessment:

A Report Submitted to the Program Review and Assessment Committee

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The Indiana University School of Medicine (IUSM) is responsible for delivering medical education within the state of Indiana. This report examines IUSM's core competencies and the Office of Undergraduate Medical Education's (UME) approaches to assessing medical student learning during the 2012-2013 academic year.

1. What general outcomes are you seeking?

IUSM offers a competency based curriculum for Undergraduate Medical Education, providing our students with scientific, clinical and interpersonal knowledge and skills they will need as practicing physicians. The general outcomes we are seeking align with the core competencies for medical students: (a) effective communication; (b) basic clinical skills; (c) using science to guide diagnosis, management, therapeutics and prevention; (d) lifelong learning; (e) self-awareness, self-care and personal growth; (f) social and community contexts of health care; (g) moral reasoning and ethical judgment; (h) problem solving; and (i) professionalism and role recognition.

2. How will we and the students know the outcomes if we saw it?

Looking at the specific knowledge and skills associated with these nine core competencies, the competent IUSM graduate:

a. Listens and shares information effectively.
b. Performs and documents medical histories, physical examinations and routine clinical procedures.
c. Manages the common health problems of individuals, families, and communities.
d. Actively sets and pursues clear learning goals and applies the knowledge gained to the practice of his/her profession.
e. Approaches the practice of medicine with awareness of his/her limits, strengths, weaknesses and personal vulnerabilities.
f. Demonstrates an understanding of the relationship between the patient, community, and healthcare system and recognizes the impact of factors, such as culture and spirituality, on those relationships.
g. Identifies and addresses ethical issues of medical practice and health policy and applies ethical information to the treatment of patients.
h. Develops informed plans of action, acts to resolve problems, and assesses the results of his/her action.
i. Behaves professionally.

3. How will we help students learn it?

The primary area where we help students acquire this knowledge and skills is through our competency-based curriculum. Medical students achieve level one knowledge and skills in all nine competencies through their coursework in the first two years of the curriculum. An example is in the first year during *The Patient-Doctor Relationship: An Introductory Course for First Year Indiana University Medical Students* (ICM 1) where students gain experience in completing formal medical histories (Basic Clinical Skills), engage in self-assessment (Self-Awareness), and

write papers (Effective Communication) on medical ethical issues (Ethics) and professional goals (Professionalism). Students in ICM 1 also watch the AAMC *Worlds Apart* video series, which examines the culture of medicine and disparities in treatment of minority and underserved patients in the US (Social and Community Contexts). Upon completion of the required clerkships during their third and fourth years, students achieve level two proficiency in all nine competencies. In addition to our curriculum, additional resources for learning related to each competency are available for students on the UME website. Resources include links to relevant articles and reports as well as information on institutional resources such as those provided through the Simulation Center and Center for Surgical Technology.

4. How can we measure each of the desired behaviors found in #2?

This section explores the specific tools used to assess medical student knowledge and skills.

Objectively Structured Clinical Encounter (OSCE). The Objectively Structured Clinical Encounter (OSCE) is used at IUSM for statewide assessment of the competencies. During an OSCE, students have an encounter with a standardized patient and demonstrate their communication and interpersonal skills as well as their integrated clinical skills as they document their findings and develop an assessment of the patient's condition. An OSCE is scheduled during each of the four years of medical school to assess the competencies at each developmental level. Below is the schedule for the administration of the OSCEs.

Year 1	History Taking OSCE (single patient encounter)
Year 2	ICM2 OSCE Final (battery of 3 patient encounters)
Year 3	End of Second Year (EO2Y) OSCE (battery of 5 patient encounters) (Currently being restructured)
Year 4	End of Third Year (EO3Y) OSCE (battery of 8 patient encounters)

After the administration of the OSCEs, students receive a report providing feedback on their performance in the various competencies. Passing scores are determined for each OSCE. Students who fall below the cut score in years 1, 2, and 4 complete a remediation program and then retake the OSCE. During the remediation sessions, students work with a mentor to improve their skills in the competencies.

Script Concordance Test (SCT). IUSM students are assessed on their clinical reasoning skills through the SCT. This tool uses patient vignettes followed by approximately 59 questions for students to indicate how additional information will impact their differential diagnosis or intervention plan. The SCT is given to second year medical students at the beginning of the fall semester. Once scored, the students are given feedback from IUSM faculty. Another administration of the SCT is given during the fourth year. The SCT is used to measure a student's progress in Problem Solving (Competency 8).

Peer and Self-Assessment. The Peer and Self-Assessment Program at IUSM involves all students in the first three years of medical school. As students are developing their professional identity, students reflect and receive feedback on their personal attitudes, their impact on colleagues & patients, and their ability to work with other members of a team. Students rate themselves and their peers on professionalism, communication and collegiality; using a 9-point scale supplemented by comments. Individualized reports are generated allowing students to see their self-assessment compared with the assessments of their peers. Students meet

with their mentors to review their reports and examine differences in perceptions. Based on these assessments, students develop a learning plan for the upcoming academic year.

Post Graduate Year 1 Evaluations (PGY-1). The Office of UME annually gathers assessment data on the performance of our graduates during their first year in residency. This instrument and the administration process underwent significant changes following the 2012 administration. First, core items were revised to better align with IUSM Core Competencies and competencies from the Accreditation Council for Graduate Medical Education. Second, a companion instrument to the PGY-1 Survey (which is administered to residency directors) was developed and administered to IUSM graduates during their first year in residency. Third, the PGY-1 Surveys were administered from February to April 2013. Historically, the PGY-1 Survey was administered during the summer. Residency directors were asked to indicate the extent to which their resident engaged in certain behaviors while the residents were asked to indicate the extent to which their undergraduate medical education prepared them to engage in the same behaviors.

5. What are the assessment findings?

This section explores relevant findings from our assessment tools for the 2012-13 academic year.

Objectively Structured Clinical Encounter (OSCE). IUSM students completing the History Taking OSCE averaged over 90% in the areas of communication and interpersonal skills and in the gathering of a medical history during a patient encounter. For those students who fell below 71%, the student worked with his/her ICM 1 preceptor and reviewed the video of their OSCE to identify gaps in performance before retaking the OSCE. The ICM2 OSCE Final provides three points of data regarding student proficiency in physical exam skills, written communication of the history and physical of a patient and conducting focused patient exams. IUSM students averaged 90% on their physical exam skills, 86% on their complete H&P write-up, and 85% on focused history & physical patient cases.

The EO2Y OSCE is a formative assessment meant to provide feedback on student's data interpretation skills as well as communication & interpersonal skills. Students performed over 83% in the communication and interpersonal skills section and 58% in the integrated clinical encounter score. The integrated clinical encounter score is obtained through an assessment of history taking, physical exam skills and the ability to document the findings from the encounter in a written note. This OSCE is currently being restructured to provide formative feedback through out the third year instead of only once at the beginning of the clerkship rotations.

The EO3Y OSCE is given at the completion of the required third year clerkships. The students completing the EO3Y OSCE averaged 82% in the communication and integrated skills (history taking and physical exam skills) category and 72% in their integrated clinical encounter skills.

Script concordance Test (SCT). Data from this academic year is currently not available for this report**.** The table below presents a comparison of SCT scores for MS2s and MS4s from the previous academic year.

	MS2	MS4	Gain
Average Score (as %)	60.6	71.9	11.3*
Standard Deviation	7.3	7.2	8.6

$t(263)= 21.4$; $p < .0001$

The aggregate results indicate that IUSM students are making significant gains in their ability to reason through clinical situations.

Peer and Self-Assessment (PSA). At the completion of each student's meeting to review his/her assessment, the student completes a survey on the value of the peer and self-assessment experience. The table below contains the average rating of the statements by MS2s and MS3s. Data from the MS1s are not available. The students use a Likert Scale with 1 = Strongly Disagree to 5 = Strongly Agree.

		All MS2	**All MS3**
Statements	Number	311	240
My peers identified strengths I had not considered.	Average	3.65	3.81
My peers identified weaknesses I had not considered.	Average	3.32	3.44
This exercise identified professionalism issues that have become part of my individual learning plan for becoming a professional physician.	Average	3.71	3.79
This approach to encouraging self-reflection is helpful.	Average	4.0	4.15
This approach to getting feedback on my professionalism behavior is helpful.	Average	4.0	4.10

The results of this survey indicate that students find more value in the PSA process as they move through medical school.

Post Graduate Year 1 Evaluations (PGY-1). Response options to core items ranged from 1=Very Little to 4=Very Much. "Respect the patient's rights and privacy" and "Behave professionally" were among the largest means for both residents and residency directors. The item with the smallest mean for both residents and residency directors was "practice cost-effective health care." The percentage of residency directors indicating their resident was formally identified in need of remediation for any reason was the lowest it has been in four years while the percentage of residency directors who ranked their resident in the upper 1/3 was the highest it has been in four years. All of the residency directors indicated that, knowing what they know now about their resident, they would select him/her again, which is the highest percentage over the last four years. See Appendix A for more findings.

6. What improvements have been made based on assessment findings?

This past year, the Office of Undergraduate Medical Education developed and implemented a comprehensive schematic for program evaluation at the institution that includes a review of assessment and evaluation data regarding: (a) the components of the curriculum; (b) the phases of the curriculum; and (c) the entire curriculum (See Appendix B).

The institution's review of the components of the curriculum consists of two separate review processes focused on individual courses and clerkships and individual instructors.

The primary activities of the Academic Standards Committee include reviewing test results, student assessments (e.g., objectively structured clinical examinations), and student evaluations. A diverse multi-disciplinary review team, including basic science and clinical faculty, medical students, and educational staff, uses institutional data and national norms to identify strengths and areas in need of attention in specific courses and clerkships. The process also promotes action plans to better address the identified areas in need of attention. These include but are not limited to improving syllabi and examinations.

The Instructor Review Process is a process that was designed and implemented to: (a) recognize faculty who receive exemplary scores on their individual instructor evaluation(s); and (b) provide resources and support to those faculty members who receive less than satisfactory scores on their individual instructor evaluation(s). If a faculty member receives less than satisfactory scores, the Director of Program Evaluation for UME contacts the chair, center director, and course director of the faculty member to better understand how to best support the individual faculty member and promote collaboration in potential efforts. The Director then contacts the individual faculty member directly to schedule a meeting to discuss what went well during the academic year, what could have been improved, and what action plans will be implemented to improve instruction. This process has led to additional data collection (i.e., peer review, student focus groups) and improved individual teaching practices.

The institution's review of the phases of the curriculum consists of two annual retreats: the Basic Science Component Retreat and the Clinical Component Retreat. Prior to these half-day retreats, committee members, which includes faculty, medical students, and educational staff, are provided with assessment and evaluation reports. The retreats are designed to promote collaboration through small group work. Each committee member is assigned to a specific team focused on a report(s) (i.e., student performance, PGY-1 surveys). Committee members begin in their assigned teams discussing the findings from the specific report(s) they reviewed. This includes identifying the strengths and areas in need of attention in the basic science/clinical curriculum. After the teams have discussed findings of their specific report(s), committee members move into different groups that consist of a representative of each team. Here, committee members provide an overview of the findings from their report(s) and a summary of their team's discussion. Finally, the committee chair facilitates a large group discussion where the committee develops action plans for the upcoming academic year and a timeline for implementation. Action plans from these reviews include but are not limited to developing a syllabus template, establishing guidelines for narrative evaluations of students, and examining the role of medical economics/cost-effective health care in the curriculum.

During the half day Curriculum Council Steering Committee (CCSC) Retreat, the Academic Standards Committee Chair, the Director of Program Evaluation for UME, the Basic Science Committee Chair, and the Clerkship Committee Chair present on findings and action plans from their reviews. Committee members of the CCSC identify potential areas of redundancy that allow for collaboration. The CCSC also reviews assessment and evaluation data and engages in a large group discussion on key findings and potential action plans to improve the larger undergraduate medical curriculum.

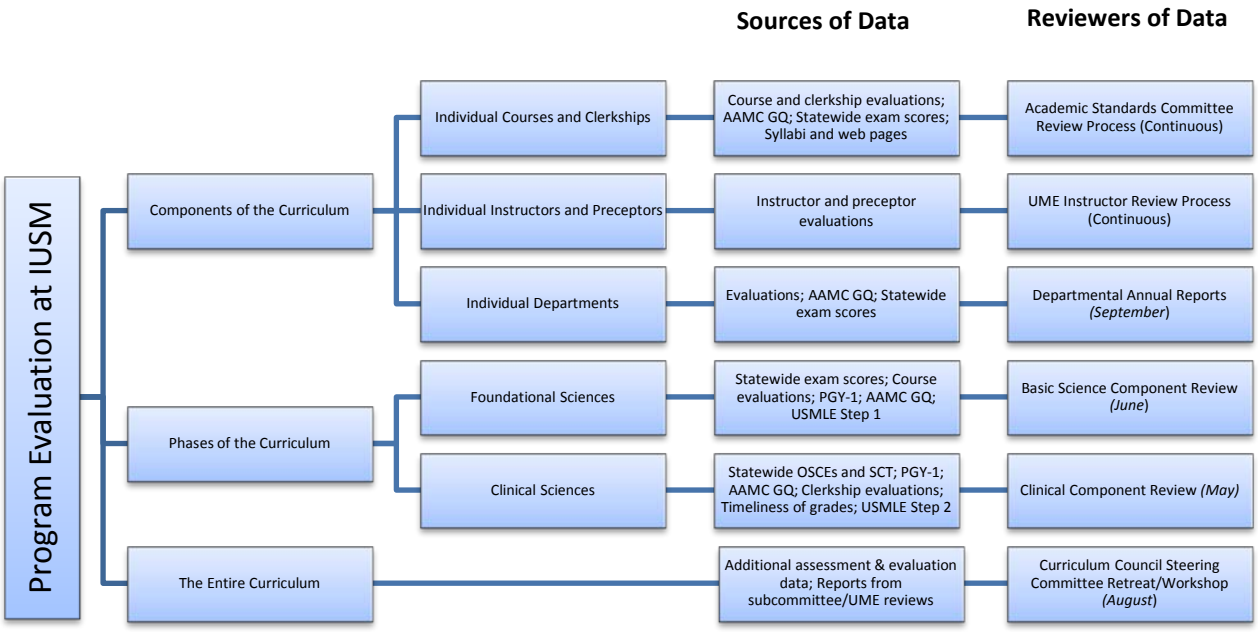
APPENDIX A

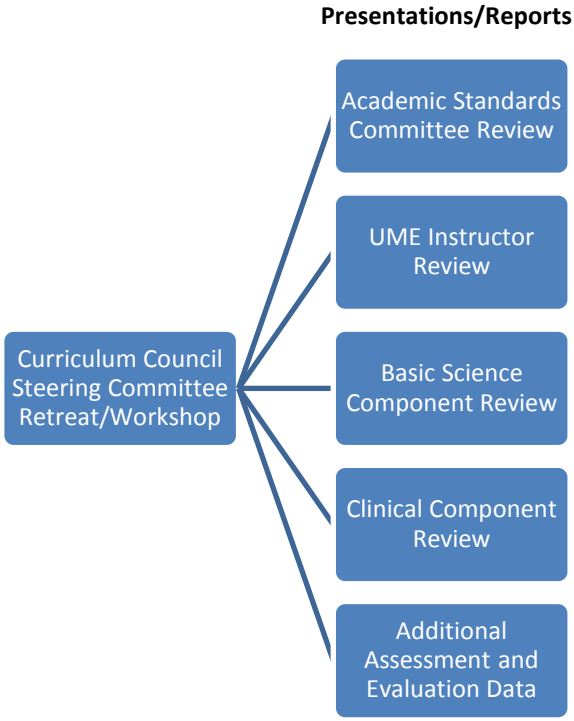
	Res Directors[1]			Residents[2]		
	M	SD	N	M	SD	N
Demonstrate caring when interacting with patients and their families	3.72	0.54	113	3.23	0.77	30
Invite questions from patients and their families	3.60	0.59	111	3.23	0.68	30
Listen to patients and their families	3.68	0.52	112	3.23	0.68	30
Exhibit cultural sensitivity in his/her interactions with patients and their families	3.62	0.59	111	3.07	0.74	30
Consider how the patient's background (e.g., cultural, spiritual, socioeconomic) impacts their decision making	3.55	0.60	111	3.07	0.87	30
Apply ethical information to interactions with patients and their families	3.69	0.52	109	2.80	0.76	30
Respect the patient's rights and privacy	3.75	0.48	115	3.53	0.63	30
Advocate for quality patient care	3.65	0.55	113	3.27	0.74	30
Practice cost-effective health care	3.31	0.72	109	2.30	1.02	30
Gather essential information about his/her patients	3.59	0.58	115	3.53	0.63	30
Design appropriate patient management plans	3.51	0.60	113	3.37	0.67	30
Collaborate with health-care professionals (including those from other disciplines) to provide patient care	3.57	0.61	115	3.20	0.71	30
Use appropriate resources (e.g., literature, databases) to support patient-care decisions	3.52	0.57	111	3.40	0.62	30
Apply basic science knowledge to solve clinical problems	3.43	0.65	114	3.37	0.49	30
Analyze potential solutions to clinical situations	3.48	0.67	115	3.40	0.56	30
Exhibit awareness of scientific advances that impact clinical decision making	3.36	0.73	112	3.07	0.69	30
Contribute to the learning of students and other health-care professionals	3.37	0.78	110	2.87	0.90	30
Engage in self-assessment of his/her clinical performance	3.39	0.76	114	3.10	0.80	30
Respond appropriately to performance feedback	3.61	0.63	115	2.97	0.77	30
Behave professionally	3.70	0.57	115	3.47	0.73	30
Demonstrate emotional maturity	3.61	0.62	114	3.33	0.66	30
Exhibit an understanding of how his/her background (e.g., cultural, spiritual, socioeconomic) impacted his/her patient care	3.50	0.69	106	3.03	0.85	30

[1] Residency Directors were asked, “During his/her time as a resident, to what extent has your resident done the following?” The response options were: 1=Very Little; 2=Some; 3=Quite a Bit; 4=Very Much.

[2] Residents were asked “To what extent did your undergraduate medical education prepare you to do the following?” The response options were: 1=Very Little; 2=Some; 3=Quite a Bit; 4=Very Much.

APPENDIX B


Sources of Data
Reviewers of Data
Program Evaluation at IUSM
Components of the Curriculum
Phases of the Curriculum
The Entire Curriculum
Individual Courses and Clerkships
Individual Instructors and Preceptors
Individual Departments
Foundational Sciences
Clinical Sciences
Course and clerkship evaluations; AAMC GQ; Statewide exam scores; Syllabi and web pages
Instructor and preceptor evaluations
Evaluations; AAMC GQ; Statewide exam scores
Statewide exam scores; Course evaluations; PGY-1; AAMC GQ; USMLE Step 1
Statewide OSCEs and SCT; PGY-1; AAMC GQ; Clerkship evaluations; Timeliness of grades; USMLE Step 2
Additional assessment & evaluation data; Reports from subcommittee/UME reviews
Academic Standards Committee Review Process (Continuous)
UME Instructor Review Process (Continuous)
Departmental Annual Reports (September)
Basic Science Component Review (June)
Clinical Component Review (May)
Curriculum Council Steering Committee Retreat/Workshop (August)


Presentations/Reports
Curriculum Council Steering Committee Retreat/Workshop
Academic Standards Committee Review
UME Instructor Review
Basic Science Component Review
Clinical Component Review
Additional Assessment and Evaluation Data