Review of Student Outcomes Data

MD
The MD program’s goals are to train physicians capable of entering any specialty. The competency-based objectives can be found online at: http://bulletin-dev.wusm.wustl.edu/EducationalPrograms/mdprograms/Pages/Learning%20Objectives.aspx. We track our success via many different outcome measures. See Appendix 01 for the competency-based objectives and 2012 outcomes summary.

All outcomes information is discussed in curriculum evaluation committees and the Committee on Medical Education, which oversees the curriculum, and is disseminated to course masters, department heads, and education deans.

OT
- Req #1 – The Program in OT collects NBCOT pass rates on all students, feedback from students via course evaluations each semester, and feedback from alumni via alumni surveys.
- Req #2 – The Program in OT uses this feedback to inform our strategic plan and we recently revised our curriculum based on data collected from course evaluations and alumni surveys.
  - Criteria 1 – See link for NBCOT pass rates http://www.ot.wustl.edu/about/nbcot-180
  - Criteria 2 – Refer to Criteria 1 link.

PT
Numerous outcome measures are taken on student performance in all three of our educational programs:

- **DPT**
  While students are in the program, they have numerous practical and written exams, as well as numerous individual and group assignments. An informal policy is to have a minimum of student performance measures equal to the number of credit hours plus 1 for each course (i.e. a 3 credit course would have a minimum of 4 measures of student performance). Most courses have more than that. Student performance is reviewed by our Physical Therapy Academic Performance and Evaluation Committee (PTCAPES) at mid-semester and at the end of the semester, and students receive written notice of their standing in the program after each meeting. Student performance in the courses provides helpful information for 1) the course master in planning future courses, 2) the curriculum committee, and 3) all faculty members participating in the annual Education Division meeting. Student performance in the clinic is monitored by our five clinical education teams. Students and their clinical instructors complete a midterm and a final evaluation using a national measure created through the American Physical Therapy Association. This information is tracked electronically. Once students graduate, the Education Division Director tracks their employment informally close to graduation, and formally through a written six-month follow-up survey. These surveys are summarized and distributed to all faculty. In addition, the Program subscribes to reports from the Federation of State Board Examination (FSBPT), which is the national board testing agency. These reports provide passing rates and scores of all graduates.
• **Post-professional DPT**
  Similar to our DPT program, each course has required testing/and or assignments to be completed by all students in all courses. Practical skills are tested through checkouts during appropriate courses. All students are required to take a capstone course that entails writing up a case report, as well as doing a synthesis of the literature related to their case. Capstone projects are supervised on a 1:1 basis by full-time faculty and presented publically.

• **PhD**
  This program is administered through the College of Arts and Sciences. Students take courses within the Program and across other departments in the university. All courses have requirements to pass. In addition to being evaluated on their course work, student performance in their assigned labs is evaluated at least annually by their faculty advisor. All students take and must pass their qualifying examinations at the end of the second year. These exams are graded by a faculty committee, with expertise in each of the areas of the qualifying exams. Their dissertation and defense are evaluated in accordance to the College’s policies by a committee with a minimum of the requisite number of faculty. We track the passing rate (~80%), time taken to complete the program (mean=4.5 years), publication and grant records, and their employment status upon graduation. Information about alumni can be found at: https://pt.wustl.edu/Education/DoctoralEducation/PhDinMovementScience/Pages/MovementScienceProgramAlumni.aspx

**PACS**
Student outcomes data for PACS students is collected and reported **publicly** for the following areas:
- Program completion rate
- Praxis (professional examination) pass rate
- Employment rate within profession within one year of graduation

This information is collected and reported annually. This information is also formally reviewed by the Audiology Program Committee and Deaf Education Program Committee of the faculty, as applicable to each program, to make a determination on the program’s effectiveness in achieving its objectives in these areas. Current data can be found at http://pacs.wustl.edu/for-alumni/student-outcome/.

In addition, a number of other mechanisms are monitored **internally** and used to make decisions about the academic programs and requirements to help determine effectiveness, and to guide changes to the programs. These include:
- Classroom assessments
- Clinical assessments
- Case studies
- Focus group interviews
- Capstone Project (Au.D. students)
- Independent Study Project (M.S.D.E. students)
- Portfolios (M.S.D.E. students)
- Exit interviews
- Matrices and standard curricula to track individual student progress
These are monitored at least on a semester basis by the PACS Committee on Academic and Professional Evaluation of Students (CAPES).

**MSCI**

Since many MSCI scholars are funded by training grants, we are required to track their course completion, job placement, grants, publications, and presentations for a 10-year period. We have a robust database to maintain all of this data along with mentor evaluations of scholars, scholar evaluations of mentors, program satisfaction data, and self-efficacy measures within the Clinical Research Training Center.

In 2010, the Clinical Research Training Center published an article analyzing data from the Clinical Research Appraisal Inventory (CRAI) that measured the self-reported self-efficacy of students within the Clinical Research Training Center programs. Information reported in the CRAI helped the program to create a competency matrix to ensure that the program goals and student outcomes were congruent. This matrix is updated frequently with information from student assessments such as the CRAI. Programmatic changes are informed based on the competency matrix ([http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3062999/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3062999/)).

More immediately, the MSCI program uses the information provided in course evaluations, exit interviews, and program satisfaction surveys to impact change on a pedagogical level. Curriculum Committee Meetings, consisting of program directors, major educational stakeholders, and course masters, are held once per semester to determine what changes should be made in individual courses and in the overall curriculum. The aforementioned evaluation techniques are used to alert the Program Director and staff of any potential problems within a specific class, the curriculum, or overall training program.

Attached please find the grants and publications summary updated annually for all students participating in the Clinical Research Training Center programs from the onset of the program. *(See Appendix 02)*

The Center and the MSCI seek to serve pre-doctoral, post-doctoral, and junior faculty individuals who expect to pursue a degree in clinical research.

Below are two examples of instated changes based on the collection of data from the various aforementioned evaluation techniques:

- In several semesters of course evaluations and in individual exit interviews, students participating in the postdoctoral seminar indicated their desire for changes to the format of the seminar. In response, the MSCI has dramatically changed the format of the course to become more interactive and interpersonal. Scholars will continue to present their research in progress; however, the feedback they receive will be heavily focused on specific topics such as the approach, significance, and specific aims of the project.

- Course evaluations recently indicated an overlap in the material presented in two of the MSCI core courses. In an attempt to resolve this overlap, the program leadership and course masters are discussing a change to the overall curriculum to allow students to choose between an
introductory and independent course to fulfill one of the requirements based on the students’ needs and previous experience with the topic.

**MSIBS**

At the present time, our collection of graduate data for the MSIBS program is limited; we have had only six graduates and can account for all of them, but have less information about graduates of the previous GEMS program. We do attempt to stay in contact, but do not have contact information for all alumni.

Our director meets with students at the end of each semester to review courses and determine what changes should be made to the curriculum based on their feedback. This includes an exit interview.

**MPHS**

A total of 35 students have matriculated into the MPHS program to date, with 18 degrees conferred (14 currently in program). Exit letters and surveys are sent to graduates and the graduates are tracked to update their status on a yearly basis (see Appendix 03). Exit surveys are reviewed by the MPHS Leadership Committee and MPHS Program Committee. Course evaluations are reviewed each semester by the MPHS leadership committee. At the mid-term, instructors are surveyed by the program coordinator in regards to mid-term grades and student performances and presented at the MPHS leadership committee. A member of the leadership committee offers counseling to any student who is not meeting the expected standards. Nearly all graduates of the MPHS program have remained at Washington University School of Medicine, either continuing in medical school, or moving from residency to fellowship or academic positions (this information also is included in Appendix 03.)

The MPHS learning objectives and competencies include:

- Develop and implement a research or public health practice project by applying principles of program evaluation or study design, and the application of appropriate data analytic techniques in an area of public health or clinical significance chosen by the student.
- Develop the knowledge and skills to design, implement, and evaluate epidemiology-related, health services, or clinical research projects of clinical or public health significance including:
  - Employ measures of health and disease status encountered in epidemiologic research, health services research, and public health research and practice.
  - Accurately and effectively employ methods for the design, analysis, and interpretation of observational studies including cohort and case-control studies.
  - Define and recognize issues of exposure and disease risk, time-dependent effects, confounding, and misclassification.
  - Effectively utilize methods for instrument development, assessment of reliability, validity and responsiveness to change; and/or diagnostic and screening test evaluation.
  - Apply methods of epidemiology to the study of infectious and non-infectious acute and chronic diseases and their prevention.
- Develop the knowledge and skills with biostatistical methods and computer software packages (e.g., STATA or SAS) for performing appropriate crude and adjusted analyses of public health, health services, or clinical data, including methods or regression analysis including the ability to formulate a scientific question in terms of a statistical model, leading to quantitative answers.
• Develop the knowledge and skills with the definitions and basic issues involved in clinical trials including study design, treatment allocation, randomization and stratification, quality control, sample size requirements, patient consent, and interpretation of results. Present for critique and discussion the scientific, policy, and management aspects of clinical trials.
• Apply the principles of meta-analytic statistical methods for clinical trials and observational studies to quantitatively summarize existing data to answer questions of public health or clinical significance.
• Understand the development, implementation, and evaluation of guidelines.
• Apply principles of study design and evaluation to T2 research and implementation projects.
• Demonstrate basic ethics as per responsible conduct of research guidelines.