

## SCHOLARLY CONCENTRATION APPROVAL FORM

**Name:** **Clinical Quality, Safety and Evidence Based Medicine**  
(Improving patient care and decreasing medical errors; a curriculum about clinical quality, safety and EBM)

**Director/Co-director:** Eric Thomas and Donald Molony

**Administrative coordinator:** Daun Gray

**Mission:**

1. To teach students how to apply the principals of safe and evidence-based care.
2. To introduce students to research methods for generating the robust evidence that defines quality and safe healthcare.

**Maximum number of students/year:** 10

**Student selection process:** Each student will write a 250 word essay about why they wish to pursue a scholarly concentration in this area of study.

**Concentration requirements (didactic and experiential):**

**Didactic:**

I. 1<sup>st</sup> year students will take the Institute for Healthcare Improvement's online classes about quality and safety. The course catalogue is listed below, we may not require all these courses:

**IHI Open School Course Catalog**

**A. Leadership**

Topic Leader: Jim Reinertsen, MD, Senior Fellow, IHI

1. L 101: So You Want to Be a Leader in Health Care?  
Author: Jim Reinertsen, MD, Senior Fellow, IHI

**B. Patient Safety**

Topic Leader: Lucian Leape, MD, Adjunct Professor of Health Policy, Dept. of Health Policy and Management, Harvard School of Public Health

1. PS 100: Introduction to Patient Safety  
Author: Doug Bonacum, MBA, CSP, Vice President for Safety Management, Kaiser Permanente
2. PS 101: Fundamentals of Patient Safety  
Author: Frances A. Griffin, RRT, MPA, Director, IHI
3. PS 102: Human Factors and Safety  
Author: Frank A. Federico, RPh, Director, IHI

4. PS 103: Teamwork and Communication  
Author: Michael Leonard, MD, Principal, Pascal Metrics

### C. **Quality Improvement**

Topic Leader: Lloyd Provost, MS, Associates in Process Improvement

1. QI 101: Fundamentals of Improvement  
Co-authors: Sandy Murray, MS, Improvement Advisor, CT Concepts  
Lloyd Provost, MS, Statistician, Associates in Process Improvement  
Robert Lloyd, PhD, Executive Director of Performance Improvement, IHI
2. QI 102: The Model for Improvement: Your Engine for Change  
Co-authors: Sandy Murray, MS, Improvement Advisor, CT Concepts  
Lloyd Provost, MS, Statistician, Associates in Process Improvement  
Robert Lloyd, PhD, Executive Director of Performance Improvement, IHI
3. QI 103: Measuring for Improvement  
Co-authors: Sandy Murray, MS, Improvement Advisor, CT Concepts  
Lloyd Provost, MS, Statistician, Associates in Process Improvement  
Robert Lloyd, PhD, Executive Director of Performance Improvement, IHI
- QI 104: Making, Spreading, and Sustaining Improvement: How the Work Gets Done  
Author: Sue Butts, Improvement Advisor, Butts-Dion Consulting, Inc.
4. QI 105: The Human Side of Quality Improvement  
Author: David Williams, Process Improvement Advisor, truesimple consulting
5. QI 106: Level 100 Tools  
Author: Kevin Little, PhD, Principal and Founder, Informing Ecological Design

II. Summer of 1<sup>st</sup> year will be the summer student research curriculum offered by the Center for Surgical Trials and Evidence Based Practice (C-STEP). Here are the 2010 lecture topics and speakers:

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|-------------|--|
| May 25 –    | Developing a research hypothesis –<br>What is a PICO question and how do I develop one?<br>(Lecturer: Curtis Wray)   |
| June 1 –    | Now that I have a question, how do I do a literature search?<br>(Lecturer: Clara Fowler, Sr. Librarian, MD Anderson) |
| June 8 –    | How do I appraise the literature? (Lecturer: Steven Canfield)  |
| June 15 –   | What basic statistics do I need to know? (Lecturer: Lillian Kao)   |
| June 22 –   | Ethics in human subjects research (Lecturer: Andrea Hayes-Jordan)  |
| June 29 –   | What study design (cohort study, randomized trial, etc) should I use?<br>(Lecturer: KuoJen Tsao)                     |
| July 6 –    | Now that I have results, how do I write an abstract and make a poster presentation? (Lecturer: Chuck Cox)            |
| July 13 - - | How do I give a presentation? (Lecturer: Kevin Lally)  |
| July 20 –   | Translational research (Lecturer: Stacey Moore-Olufemi)  |
| July 27—    | Student presentations  |

III. 2<sup>nd</sup> year students will attend Dr. Molony's lectures on critical appraisal of the literature that are part of the ICE/PBL course, will precept the workshop on searching the literature conducted for the entire second year class, and will conduct a literature search on the topic of their research concentration and critically appraise one article in the literature. Dr. Molony will provide feedback on the search and critical appraisal. Alternatively, students may elect under the direction of Dr. Molony to critically appraise one of the articles that have been selected for inclusion as part of "Nephrology Literature Watch" (edited by Dr. Molony), published monthly in the Dialysis and Transplantation. These efforts will become part of their scholarly concentration portfolio.

Lecture Schedule:

1. Evidence in Clinical Medicine
2. Asking a questions; searching for the evidence
3. Assessment of studies on diagnostic tests
4. Assessment of studies on therapy and prevention
5. Assessment of systematic reviews

Workshop: Hands on searching workshop with librarians from Houston Academy of Medicine Library

IV. 3<sup>rd</sup> year the students will attend 3 Departmental M&M conferences in the Fall / Spring semesters and provide a paragraph summary of their impression with supporting evidence pro and con of the effectiveness of the particular discussion in reviewing the evidence of either or both effectiveness and safety. They will discuss these observations with their scholarly concentration mentor and their summaries (fully de-identified) will be included in their scholarly portfolio.

V.

A. 4<sup>th</sup> year students who are concentrating on the Evidence-based Medicine (EBM emphasis) of this scholarly concentration, will be encouraged to participate in the EBM-student elective; Course Director: Dr. Molony. In this elective, students provide evidence-based reports in response to consultation requests from the ward teams and in response to questions that arise from Morning Report.

B. As an alternative, 4<sup>th</sup> year students focusing on **safety** (Safety emphasis) may elect to observe the functioning of the hospital quality committees, in particular, following from identification to completion of the analysis one or more root cause analyses.

VI. In addition to these specific didactic exercises, students in this concentration will be exposed to the principles of evidence based medicine and epidemiology, observational study design during Introduction to Clinical Medicine (ICM) in year one, during ICE-PBL in year two, as part of the Medicine Core-clerkship in year 3 and during the Medicine required month in year 4. They may also elect to participate in the searching the literature workshop during the transition to residency month in year four.

## **Experiential:**

Students in this scholarly concentration will be required to participate in a scholarly research project during the summer between their first and second year of medical school. After selection for this scholarly concentration in the fall of their first year, students will elect by March of their freshman year to focus on either EBM or Safety so that they will have sufficient time to develop a related research project prior to June 1. They will select a mentor from the concentration faculty and with their mentor develop a research proposal (submitted in writing (brief summary), to be included in their portfolio before June 1, year 1) and conduct the research project during the first summer. It is anticipated that some students will continue working with their mentors on their research projects beyond the first summer. Students, however, will be required to present their findings from their summer research to a symposium selected by the scholarly concentration committee and their individual mentors.

These research projects may be of various types broadly in the area of EBM, Quality and Safety.

1. Some students will be able to participate in a quality improvement project as part of the Clinical Safety and Effectiveness Course.
2. Students can work on clinical and quality/safety research projects in Departments of Medicine and Surgery and Pediatrics, and in C-STEP, the Center for Clinical Research and Evidence-Based Medicine, and the UT-Memorial Hermann Center for Healthcare Quality and Safety.
3. Assist Dr. Molony and MHHS with reviewing and up-dating evidence based practice guidelines that are used in our clinical areas. These reviews might lead to a larger systematic review such as published by the Cochrane Collaboration.

## **Timeline (year by year) for student completion of concentration requirements:**

See above.

## **Scholarly projects\***

- a) **indicate the types of faculty-mentored student scholarly projects available to students (e.g., basic research, clinical research, public health analysis, curriculum development, literature review, etc.):**

Clinical research, research on healthcare quality and safety, health information technology research (EMRs), quality improvement projects, evidence-based evaluations of clinical effectiveness, evidence-based systematic reviews of the literature (e.g. Cochrane Reviews).

- b) **indicate the procedure used to review and evaluate the students scholarly projects and outcomes (scholarly product):**

All students will present their scholarly project to faculty and other students in the concentration during a series of seminars following the summer. Additionally, they will

be required to present their findings at a poster session of a local (Medical School or TMC) or State or National scientific meeting.

**c) indicate strategies for dissemination of the scholarly product:**

Presentations at national and local meetings, for example the UT System Clinical Safety and Effectiveness annual meeting (also the local meeting of the same course). Present systematic reviews and guideline updates to MHHS Healthnet Providers/Committees. Whenever appropriate, students will be encouraged to submit their findings for presentation at a national scientific meeting.

\*a traditional student-authored manuscript describing his/her project and its outcome is required.

This manuscript will be included in the student's scholarly concentration portfolio along with the original research proposal and any abstracts, posters etc prepared for national meetings.

**Student Evaluation:** Students will successfully complete the requirements of this scholarly concentration and receive a certificate of their accomplishments but completing all of the required didactic sessions / courses and the scholarly project. Satisfactory completion of these requirements will be adjudicated by a committee consisting of the co-directors and at least three other faculty sponsors. The student's mentor will provide a brief written evaluation of the student's research project (evaluation form to be developed) that will form the basis of the assessment of this core item. The concentration portfolio will be used to catalogue successful completion of each of the elements of this concentration.

**Scholarly Concentration Programmatic Oversight and Evaluation:** A committee of the Directors and Supporting Faculty will meet on a regular basis to evaluate the success of this educational initiative and to consider changes and or additions to the concentration as dictated by resource availability and regular evaluation. It is anticipated that additional research and didactic features will be further developed for the program during the medical students' penultimate year so that they may demonstrate in a summative fashion the skills acquired and may come to closure with their projects. Students will be surveyed each year to provide the faculty with timely programmatic feedback.

## Scholarly Concentration Faculty

Faculty Name	Contribution(s) to Concentration	Department
Eric Thomas	Co-Director	Internal Medicine
Donald Molony	Co-Director	Internal Medicine
Lillian Kao	Faculty sponsor	Surgery
Bela Patel	Faculty sponsor	Internal Medicine
Yash Chathampally	Faculty sponsor	Emergency Medicine
Kevin Hwang	Faculty sponsor	Internal Medicine
Laura Benjamins	Faculty sponsor	Pediatrics
Josh Samuels	Faculty sponsor	Internal Medicine
Jason Etchegaray	Faculty sponsor (summer research on quality in particular)	Internal Medicine, Center for Healthcare Quality and Safety
Dean Sittig	Faculty sponsor (research on EMRs/HIT in particular)	SHIS, Center for Healthcare Quality and Safety
Jon Tyson	Faculty sponsor	Pediatrics, Center for Clinical Research and Evidence Based Medicine
Susan Wootton	Faculty Sponsor	Pediatrics
Steven Canfield	Faculty Sponsor	Urology
Khalid Almoosa	Faculty Sponsor	Internal Medicine
<b>Memorial Hermann Hospital System / Adjunct Faculty SHIS-UTH</b>		
Robert Murphy, MD	Faculty Sponsor	MHH- System Chief Medical Informatics Officer
Siraj Anwar, MBBS, MS	Faculty Sponsor	Clinical Informaticist (Clinical Decision Support)
Mano Selvan, PhD	Faculty Sponsor	Clinical Informaticist (Outcomes & Research)
Pat McGinnis, MD, MBA, MS	Faculty Sponsor	Director of Medical Informatics, MH-Texas Medical Center