Department of Health Services
UCLA School of Public Health

Health Services 288: The Role and Impact of Technology in Health Services

Spring 2007

Instructors: Paul R. Torrens, MD,MPH
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Days/Time: Wednesdays, April 4 - June 6, 2007
3:00 - 6;00 PM

Location: Room 41-268, School of Public Health

Purpose and General Organization of the Course

The purpose of this course is to provide graduate students in the health sciences with a general understanding of the role and impact of technology in health services in the United States. By examining various types of health care technologies and by understanding the origins and the processes for their production, approval, adoption, and financing, students will develop an appreciation for the size and scope of its potential impact. By examining costs of production, purchase, installation, and use, as well as the impact of technology on associated patterns of care, students will develop an appreciation for technology's economic and financial impacts. Finally, by examining the ways in which technology changes patterns of clinical practice, changes consumer demand, and (possibly) changes value systems within medicine, students will develop an appreciation of technology's organizational, clinical, and ethical impacts as well.

The content of the course can be divided into several general sections, each of which will be covered to some degree in this course. Because of the complexity of individual speakers' schedules, it may not be possible to present all the sections in sequential fashion, so a brief description of the various content sections must be presented.

The first section of the content provides a general framework for understanding the overall role of technology in US health care, including information on the different types of technology to be discussed (pharmaceuticals; medical devices; clinical procedures;

information technology). A second section contains material on the process of technology development, diffusion, adoption, and utilization within the health system, as well as information on the methods of technology assessment and approval at the governmental, health insurance, and institutional levels. A third content section contains material on the impact of technology on the economics of healthcare, clinical practice, consumer behavior, organizational structure and function, and health policy A final content area includes discussions of ethical issues, access to technology, and equity in the distribution and use of new technology.

A main mechanism for understanding these issues will be the presentation of class sessions by individual speakers focusing on one or two specific technologies or issues related to technology. A selection of important new technologies will be discussed to provide a general sense of what is currently happening with technology development and use, as well as what lies ahead for technology supply and demand in the future. These will (hopefully!) include developments in embryonic stem cell research, robotic surgery, telemedicine, neuro-imaging, genetics, and electronic medical records. Each of these individual technological developments will be discussed for two reasons: (a) because the technology is interesting in itself, and (b) because it emphasizes one or more of the broader and more general issues/principles/challenges involved in understanding the role of technology in health care.

Since much of the course content is presented by guest lecturer and since it is not always possible to coordinate their availabilities with the course outline, many of the actual course sessions may eventually appear somewhat out of sequential order. To help prevent student confusion and to remind those taking part in the course exactly how each session fits into the overall framework, an overall theoretical framework for the course will be presented in the first session. Each session thereafter will be introduced with a specific description of how that particular session fits into the overall pattern. This possible disruption of sequencing of individual sessions will call for specific efforts on the part of the course instructors and the students themselves to integrate the various sessions into the overall framework of the course as a whole. Student cooperation in this integration effort will be greatly appreciated.

Textbooks for the Course

The main textbook for the course will be: Technology in American Health Care: Policy Directions for Effective Evaluation and Management, 2004, by Alan Cohen and Ruth Hanft; it will be available in the UCLA Medical Center Bookstore. Additioinal individual readings, readings, and other materials will be provided by the instructors and guest lecturers for individual sessions.

Grading for the Course

Grading for the course will be derived from three sources: (a) attendance/completion of assigned readings/active participation in the course sessions and exercises...25%; (b) summary of major learnings/insights/understandings from the course....25%; (c) final course project/product....50%. Auditors for the class are welcome and will expected to take an active part in the classroom discussions and exercises.

Summary of Major Course Learning/Insights/Understanding

For the final session of the course, all students will be expected to produce a one/two page summary of the major points that they have learned through this course. This can be a simple listing of major points, or it can be a listing of major points together with a brief explanation of why the student feels it/they are important. It is hoped that this device will force students in the course to continuously ask themselves, "What is important about the material presented today, the material that I have just read, or the discussions that have just taken place." It is not meant to be a research paper with references, documentation, or elaborate explanations; rather it is meant as a simple check for students, instructors, guests: "Did I learn anything today that is worth remembering and storing away?"

Final Course Project/Product

Since there will most likely be a wide variety of professional backgrounds and interests among the students attending the course, the instructors will allow considerable latitude for students to develop final course projects/products that are particularly relevant to their individual interests. In order to ensure standardization of the projects/products, students are asked to present a brief written outline of their intended project to the instructors early in the course and should not proceed until they have received approval from the instructors.

For the final course project/product, each student should select a particular technology and analyze it from several points of view. In the first, the student should review the history and development of the particular technology, tracing it from its origins to its present status. In the second, the student should identify those forces/pressures/opportunities/events that either helped or hindered the progress of the technology at various important stages of its development from initial scientific idea to final diffusion and use by clinicians. In the third point of view, the student should discuss the impact of the technology on: (a) the economics of healthcare; (b) clinical practice; (c) consumer behavior; (d) organizational function and behavior; (e) national/state/local health policy.

Contact with Instructors

The instructors welcome contacts with the students, either about the content of the course or about their individual career directions and progress. Their contact information is as follows:

Doctor Torrens: (office) (310)(825-7640)
(e-mail) torrens@ucla.edu
(appointments) Please call 825-7640 giving days and times when you are available; Doctor Torrens will call back to confirm.

Doctor Aronberg: (phone)(310)(277-9876)
(e-mail): saronberg@earthlink.net

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Revised Tentative Schedule of Lectures and Presentations

Dates	Subject	Speaker(s)	Readings
4/4/07	Introduction to the Course	Torrens Aronberg	Chapters 1,2
4/11/07	(a) Bone Marrow Transplant in Breast Cancer RX (b) Coronary Artery Stents © Technology Assessment	Aubry	Chapter 3,4
4/18/07	(a) (b) Telemedicine	Torrens/Aronberg Kleinman	Chapter 5,6
4/25/07	(a) Electronic Medical Records (b) Economics of Technology	Guze Goldman	Chapter 7,8
5/2/07	(a) (b) Stem Cell Research	Lill	Chapter 9, 10
5/9/07	Pharmaceuticals	Stalker Jaresko	Chapter 11,12
5/16/07	(a) Developments in Oncology (b)	Audeh	Chapter 13,14
5/23/07	(a) Neuro-imaging (b) Genetics	Mazzioto Gordon	Chapter 15
5/30/07			
6/607	Student Presentations on Insights from the Course Instructors' summary of Course Contents		