Developing New Curriculum Modules for Enhancing Interprofessional Teamwork and Communication Skills to Improve Patient Care and Safety at the University of California, San Francisco

by

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INTRODUCTION

In November 1999, the Institute of Medicine (IOM) – Committee of Quality of Health Care in America published the report: “To Err is Human: Building A Safer Health System”. The Committee found that at least 44,000 and as many as 98,000 people in the United States die in any given year from medical errors that occur in hospitals that could have been prevented. One of the IOM’s recommendations was to establish interdisciplinary team-training programs in hospitals to enhance communication between health professionals and staff.

Ever since the IOM called on educators to improve patient safety by providing interdisciplinary team-training programs, universities across the country have been grappling with the barriers to health science education. Both faculty and students at the University of California at San Francisco (UCSF) have recognized the need for interdisciplinary team education. In response, educators from the UCSF’s schools of dentistry, medicine, nursing, and pharmacy have been working together to bring interprofessional experiences to their student’s curricula. To further support their efforts, the Work~Life Resource Center was invited to participate in the development and offering of curriculum modules that introduce principles of teamwork and effective communication to improve patient care and safety. Two modules were created and piloted to the UCSF student group: Students for Interprofessional Learning in October and November 2007.
BACKGROUND

In 1999, a formal mediation program was established at the University of California, San Francisco (UCSF) that helped individuals within the University address conflict. This work was initially established to help foster greater civility and more effective communications between health professionals, staff and students in the work environment.

In 2002, discussions with then dean, Haile T. Debas focused on creating a center for communications and conflict management at UCSF based upon the experiences of this formal mediation and conflict management program. Debas was genuinely interested in, and committed to, creating an environment known for caring as much as curing. The role of this center was envisioned to be even broader in its ability to fully meet the mission of UCSF in teaching, research and service.

A trained team of UCSF mediators now carries out this service under the Work~Life Resource Center (WLRC). Faculty, administrative and managerial staff, and co-mediators work together at this center to facilitate confidential and neutral mediations. Their certificated mediation training also qualifies them to conduct (external) community mediation. This latter component has greatly added potential for extending more intensive conflict management expertise into the neighboring communities as well as into the global health care communities that UCSF serves.
During this same period, considerable attention was being given to the role and relationship of interprofessional communication in the delivery of patient care. In 2003, the four deans at UCSF established the Interprofessional Education Task Force (IPETF). The IPETF, comprised of the Associate Deans from the Schools of Dentistry, Medicine, Nursing and Pharmacy and several faculty, staff, and students from each school focused on developing joint curricular projects among the schools. Faculty curriculum experts from each UCSF school, trained as part of the Harvard Macy Scholars Project have been intricately involved in patient care communication curriculum. Their charge was to create two scripts for two scenarios and design one hour’s worth of curriculum that will accompany each case scenario.

One of the first projects launched in 2006 by the IPETF was the first-ever Interprofessional Education Day for all entering classes of the Schools of Dentistry, Medicine, Nursing, Pharmacy and Physical Therapy. The students were brought together to learn about the importance of interprofessional teamwork and communication in the context of patient safety. Their keynote address was by Dr. Robert Wachter, UCSF Professor of Medicine and author of *Internal Bleeding: The Truth Behind America’s Terrifying Epidemic of Medical Mistakes*. Dr. Wachter’s research reveals that medical errors kill an estimated 100,000 Americans each year. He states that root cause analysis technique has pointed out the problems in communication, rigid hierarchies, absence of redundancies and other systemic flaws that, if unfixed, are setups for continued
error. In addition, he points out that even small errors, like a typo on a surgical schedule, a smeared name on the nursing station whiteboard, and miscommunication between doctors when a patient is handed off, can become catastrophic as they start to build up. A similar finding by author J. Reason (2000) is stated in *Human Error: Models and Management*. Reason describes the impact of poor teamwork on an increased number of patient errors with his model: the “Swiss Cheese Model of System Accidents”. If multiple errors occur in a fashion like aligning the holes in Swiss cheese, errors can get through, resulting in adverse medical mistakes. Reason points out that when teamwork is strong on a patient unit, one team member will catch an error of another member before an adverse event occurs. They are aware of the strengths and vulnerabilities of one another and they are cognizant of the activities of the other team members.

In 2005-2006, WLRC proposed to the Executive Vice-Chancellor and Provost Office a desire to establish a Center for Interprofessional Communication and Conflict Management at UCSF (CICCM) and follow-up discussions through the Dean’s designees. Driven by the WLRC’s experiences to date in communication and conflict management, a new collaborative effort was proposed by the director of WLRC for consideration in 2007. It called upon curriculum specialists in each of the schools to partner in the development of discrete curriculum modules that bring together principles of effective communication and delivery of patient care. This was the impetus for the development of two course modules that would eventually be piloted by the UCSF Students for Interprofessional Learning in
October and November 2007. The results from the pilot would assist in determining the relevancy of the instruction and the feasibility of adapting the content into core course offerings.

When fully operational, the CICCM is envisioned to carry out the mission of the university: teaching, service and research. By integrating the principles of conflict management and interpersonal, interprofessional, and cross organizational communications, the CICCM can help transfer knowledge across boundaries where faculty, staff and students interface in the course of their work, be it clinical, research or administrative.

The eventual goal is to develop six modules to be offered to all students throughout UCSF, with the possibility of expanding the offering to include faculty, staff, and practitioners. Sustained focus on the elements with faculty, students, and practitioners will offer the following benefits:

(1) Promote an interdisciplinary approach to patient care and safety;
(2) Foster community and collegiality between faculty and students before and after entering the hospitals/clinic/research lab;
(3) Raise awareness of issues surrounding interprofessional communication and its impact on patient care and safety;
(4) Increase self-awareness as an instrument to promote patient safety.

PURPOSE STATEMENT
Preliminary findings identified that teaching interprofessional teamwork and enhancing communication were important skills to be taught at UCSF to students. In order to create and deliver two pilot courses, this action research project used qualitative methods (i.e. surveys, interviews, meeting notes, evaluations, research papers) to assess and determine what material should be taught, and if it should be delivered within the core curriculum of each school or best delivered as an interdisciplinary elective course.

This research project included the following deliverables:

(1) An advisory group formed with faculty representatives from UCSF and other higher education institutions. The purpose of the advisory group was to:

   (a) Review needs assessment;
   
   (b) Review learning objectives;
   
   (c) Identify most effective training strategy to teach material;
   
   (d) Review and approve course outline for two pilot modules;
   
   (e) Review assessment strategies;
   
   (f) Promote the piloted modules in their respective schools;
   
   (g) Review course evaluations and determine next steps.

(2) Interviews with key faculty and students to assist the advisory group in determining the learning objectives and effective training strategy.
(3) Compilation of cataloged courses offered in teambuilding, effective communication, conflict management and/or interprofessional training at UCSF, other higher educational institutions in California – Bay Area, and online

(4) Two course modules developed and pilot tested as an interdisciplinary course to the UCSF Students for Interprofessional Learning (SIL). SIL is a student group that includes all levels of students from the various schools at UCSF whose interest is in increasing collaboration and improving communication between health care students and professionals in academic and clinical settings with the goal of improving patient safety and providing effective patient care.

(5) Compilation of student evaluations and identification of key points. This information was distributed to the advisory group and Students for Interprofessional Learning to determine next steps.

LITERATURE REVIEW

Overview

In the November 1999, IOM – Committee of Quality of Health Care in America published the report, “To Err is Human: Building A Safer Health System”. The Committee found that close to 100,000 people in the United States die in hospitals each year as a result of medical errors that could have been prevented. In addition to the IOM’s recommendations to improve patient safety, authors Wachter and
Shojania (2004) points out that medical education has neglected teaching teamwork and providing simulation training. The best-known model for providing interprofessional training is drawn from aviation (Crew Resource Management) in which participants are trained as a unit to use checklists and other redundancies, and communicate clearly regardless of status, especially in a crisis situation.

Since this project’s primary goal was to develop curriculum modules for UCSF, this literature review was focused on: (1) investigating how interprofessional teamwork and effective communication education could improve patient care and safety; (2) examining how effective communication and/or interprofessional teams: PROS – could improve patient care and safety; (3) examining how ineffective communication and/or lack of interprofessional teams: CONS – led to medical mistakes; (4) identifying how the design and delivery of interprofessional training strategies could lead to more effective interdisciplinary education.

**Research Context**

Quite a lot has been written about the importance of interprofessional (sometimes called interdisciplinary) teamwork and communication education to improve patient care and safety after the 1999, IOM report was published. Yet, little has been written about what is being done or taught, how it is being delivered, and who is teaching such courses.
Thus, for this research project, major efforts were put in to developing and delivering interdisciplinary curriculum modules that could be effectively taught to the students at UCSF. Investigating what other institutions were offering to their health science students and how they overcame logistical difficulties (i.e. limited classroom space, different academic schedules of each school), were important areas to research while reviewing literature.

Interprofessional Teamwork and Effective Communication Education to Improve Patient Care and Safety

Even before the well published IOM report was issued in 1999, the medical profession was publishing papers on the need for improved work relationships and collaboration among different health professions; and on the demand for a broader vision of medical education. As stated by Headrick, Wilcock and Batalden (1998), “Almost everyone who seeks medical care interacts with more than one health professional. The number of professionals involved and the importance of their ability to work collaboratively increase with the complexity of the patient’s needs… (Pg.771) Health professionals tend to work autonomously even though they may speak of being in a team…. Physicians and other professionals face increasing accountability for the results of their work, but the health professionals caring for the same group of patients often are employed by different organizations and may be held to different standards.” (Pg.773) Given these challenges, one could conclude that professional development to foster interprofessional collaboration and teamwork is needed. Thus, the paper cites the
UK Centre for Advancement of Interprofessional Education (CAIPE) recommended list of principals of effective interprofessional education to stimulate the development, implementation, and evaluation of educational material. The principals for effective interprofessional education: (1) works to improve the quality of care; (2) focuses on the needs of service users and care givers; involve service users and care givers; (3) promotes interprofessional collaboration; (4) encourages professions to learn with, from, and about one another; (5) enhances practice within professions; (6) respects the integrity and contribution of each profession; and (7) increases professional satisfaction. (Pg. 774)

**Effective Communication and/or Interprofessional Teams: PROS –**

**Improved Patient Care and Safety**

In the health care setting, interprofessional teams consist of individuals from different disciplines who come together to care for patients. For example, the physician, physical therapist, and pharmacist come together to care for patients with strokes; the surgeon works with the anesthesiologist in the operating room; and the receptionist, medical assistant, and physician work together in the primary care unit.

Research on health care teams has suggested that teams with greater cohesiveness have better clinical outcomes and higher patient satisfaction. Grumbach and Bodenheimer (2004) define cohesive medical teams as having 5 key
characteristics: (1) concrete goals with measurable outcomes, (2) clinical and administrative systems, (3) division of labor so that each team member knows the role he or she must play in performing each task, (4) training of all team members, and (5) effective communication accomplished via systems and protocols and by face-to-face, frequent conversations rather than by lengthy meetings. In addition, Grumbach and Bodenheimer stated that medical settings in which physicians and non-physician professionals work together as teams further improve patient outcomes.

Baker, Gustafson, and Beaubien (2003) define effective team performance as team members’ willingness to cooperate toward a shared goal, such as improving the patient’s wellbeing by creating a more safe & error-free environment. In addition, effective teamwork uses effective intra-team communication and receives adequate organizational resources and support. Teamwork also requires that the team develop a shared awareness of each member’s roles and abilities (Pg.10). The authors cite Cannon-Bowers et.al. (1995), for identifying three types of competencies that are critical for effective teamwork: (1) teamwork-related knowledge, (2) teamwork-related skills, and (3) teamwork-related attitudes.

“Teams know things, do things, and feel things: moreover they know, do, and feel within specific environments. Thus, their effective performance depends upon their integrating a host of inter-related personal and situational characteristics. Further, the personal competencies
requisite of team members encompass their understanding both the technical and strategic aspects of the assigned tasks and the strengths and weaknesses of their teammates. Similarly, their requisite skills include, not only performing their own responsibilities and adjusting them when necessary, but also, monitoring their teammates’ activity and diffusing potential team conflicts. In addition, effective teams exhibit these competencies while maintaining an emotionally positive attitude towards the team itself.” (Pg.15)

As pointed out by Baker, Day, and Salas (2006), “Physicians, nurses, pharmacists, technicians, and other health professionals must coordinate their activities to deliver safe and efficient patient care.” (Pg.1578) “Health care worker perform interdependent tasks (e.g., a surgeon cannot operate until a patient is anesthetized) while functioning in specific roles (e.g., surgeon, surgical assistant, anesthesiologist) and sharing the common goal of safe care. However, despite the importance of teamwork in health care, most clinical units continue to function as discrete and separate collections of professionals.” (Pg.1579) The authors emphasize that, “Given the interdisciplinary nature of the work and the necessity of co-operation among the workers who perform it, teamwork is critical for ensuring patient safety.” (Pg.1579)
A study by Stevenson, Baker, Farooqi, Sorrie, and Khunti (2001) demonstrated that better teamwork and positive team climate correlated with better care for patients with diabetes. The study also showed that when team members shared attitudes and beliefs they provided better continuity of care, access to care, and patient satisfaction.

Similarly, a study by Cole and Crichton (2005) suggests that human factors, such as communication and interprofessional relationships, can affect a trauma team’s performance regardless of how clinically skilled the team members are. Their finding suggests there are five main categories that affected the outcome of patient care. First, the role of the trauma team leader was found to be critical for the effective functioning of the team. Second, clinical confidence and competence of each team member affected the culture of the team. Third, the ability to communicate effectively and assertively was identified as a prerequisite skill for resolving conflicts. Fourth, effective communication was considered fundamental to the team’s successful performance during a trauma call. Finally, the environment affected the outcome. For example, at times during a trauma call, there was evidence that the team members misheard information, and needed certain team members to repeat questions or answers in an already stressful situation.

Nembhard and Edmondson’s (2006) also agreed that the role of the leader was critical for the effective functioning of the team. They found that the words and deeds exhibited by leaders helped cross-disciplinary teams overcome the
inhibiting effects of status differences, allowing members to collaborate in process improvement. The well-entrenched status hierarchy that exists in medicine makes it very difficult to speak across professional boundaries.

Nembhard and Edmondson point out that patient outcomes were not as good as the degree of hierarchy in health care team interactions increased. Their results found that “the active, inclusive behavior on the part of the physician leaders may be an essential means of facilitating others’ meaningful engagement in team-based quality improvement work.” (Pg.958)

**Ineffective Communication and/or Lack of Interprofessional Teams: CONS – Medical Mistakes**

In the 1999 IOM published report, the Committee also found that in the United States, at least 44,000 people, and perhaps as many as 98,000 people, die in the hospitals each year as a result of medical errors that could have been prevented… Even using the lower estimate, preventable medical errors in hospitals exceed attributable deaths to such feared threats as motor-vehicle wrecks, breast cancer, and AIDS.” Wachter and Shojania, two UCSF physicians, published the groundbreaking book, Internal *Bleeding: The Truth Behind America’s Terrifying Epidemic of Medical Mistakes*. In their book, they point out problems caused by ineffective communication among health care providers, rigid hierarchies, absence of redundancies and other systemic flaws that, if unfixed, are precursors for continued errors.
Reason (2000) is well known for creating the “Swiss Cheese Model of Defense” that explains how many layers of defenses should prevent errors from occurring or should catch errors early so they do not become adverse events. Like Swiss cheese, presence of holes in a system/process in any one “slice” does not normally cause a bad outcome. It is only when multiple errors occur in a fashion such as aligning the holes in Swiss cheese, that errors can get through, resulting in adverse medical mistakes. Wachter and Shojania (2004) reaffirm Reason’s model by stating that, “small errors in a complex system in hospital care only reach patients when many holes in the safety barriers – the layers of Swiss cheese – align. The key point to remember is that this is a system where small mistakes, like a reversed X-ray, a typo on a surgical schedule, a smeared name on the nursing station whiteboard, miscommunication between doctors when a patient is handed off, can become catastrophic as they start to build up. Making care safer usually requires an understanding of both the layers of protection and their holes.”(Pg.45)

In Leonard’s (2005) article on basic communication mechanisms that can keep everyone on the same page, he agrees with the IOM report and Reason’s Swiss cheese model that errors are a result of a complex system of multiple communication failures, ineffective teamwork, and unreliable systems of care. He feels that medicine must be transformed from a culture of expert providers to one of a team-based model of care. He believes that with basic communication mechanisms to keep everyone on the same page, medical mistakes can be reduced.
In another IOM Report, *Keeping patients safe: Transforming the work environment of nurses* (2004), the IOM outlines five major characteristics leading to problems with patient safety on nursing units: (1) unclear unit values, (2) fear of punishment for making errors, (3) lack of systematic analysis of mistakes, (4) complexity of the work and numerous interruptions, and (4) inadequate teamwork.

Henriksen and Dayton (2006) suggest an additional interesting factor that threatens patient safety “organizational silence—a collective-level phenomenon of saying or doing very little in response to significant problems that face an organization.” (Pg.1539) This factor can also contribute to patient mistakes. They organized the factors into three areas: (1) individual factors, including the availability heuristic, self-serving bias, and the status quo trap; (2) social factors, including conformity, diffusion of responsibility, and microclimates of distrust; and (3) organizational factors, including unchallenged beliefs, the ‘good provider’ fallacy in which he/she does not complain and is not disruptive, and neglect of the interdependencies. Similarly, Grumbach and Bodenheimer (2004) also mentioned problematic characteristics of forming teams that were related to challenges of human relationships and personalities, which served as threats to patient safety.

**Design and Delivery of Training Strategies**
After the IOM published its report, President Clinton established a Quality Interagency Coordination Task Force (QuIC). The task force comprised of participants from the Department of Health and Human Services, Labor, Defense, and Veterans Affairs. The QuIC was charged to respond to the IOM’s advice and propose specific actions for improving patient safety and reducing medical errors. One of the IOM’s recommendations was to establish interdisciplinary team-training programs.

The QuIC published the report, Medical Teamwork and Patient Safety: The Evidence-Based Relation, in October 2003. This report outlines medical training goals and objectives, a framework for designing effective team training programs, an evaluation of three known medical training programs: Anesthesia Crisis Resource Management, MedTeams, and Medical Team Management, and recommendations for ensuring that the design and delivery of medical team training improves patient safety. Their framework for designing effective teams includes team training to improve trainee competencies (e.g., knowledge, skills, attitudes) and facilitating desirable performance outcomes (e.g., safety, timely and accurate responding, patient welfare) under demanding conditions. The QuIC proposed that effective training programs (1) systemically represent sound theory and a thorough needs analysis; (2) provide trainees with information, demonstrations, guided practice (case scenario exercises, simulation training) and timely diagnostic feedback; and (3) reflect organizational cultures that encourage the transfer of the trained competencies to the task environment.
Two general themes arise when reviewing literature on medical education to improve patient safety – the need for effective teamwork and effective communication. Researchers such as Burke, Salas, Wilson-Donnelly, and Priest (2004) recommend adopting military and aviation simulation training to train the medical community. They have found that crew resource management (CRM) is a proven team-training strategy that should be adopted by the medical profession.

Wright, Taekman, and Endsley (2004) support Burke and his colleagues’ assessment; they state that human patient simulators can be valuable resources for studying issues related to medical error. Their article reviews a theory of situation awareness (SA) that refers to a person’s perception, understanding of their environment, and comprehension of that information. They state that SA is a critical component in decision making for medical practitioners and may decrease errors. They propose that direct measures of SA through the situation awareness global assessment technique (SAGAT) may provide an objective, validated measure of individual and team performance.

Flin and Maran (2004) also draw upon the aviation industry work and have identified effective ways to adopt CRM training in emergency medicine. Their article describes a research project where consultant anesthetists and industrial psychologists worked together to produce a behavioral marker system NOTECHS and to develop a training course, Crisis Avoidance Resource Management for Anesthetists (CARMA).
Although simulation training attempts to replicate substantial real world experiences, it cannot improve all skills. Studies of simulation to address complex team behaviors were not as effective as anticipated and could not show proven benefits (Gaba 2004). In addition, depending on the type of technology used to provide simulation training, the cost could be relatively inexpensive to significant, and if significant, could not be financially sustainable long-term.

With or without the use of simulation training to train medical teams, it was apparent throughout the literature reviews that interprofessional teamwork and effective communication were critical to patients’ care and safety. Thus, authors such as Cole and Crichton (2006), suggests that team education should include human factor considerations such as leadership skills, team management, interprofessional teamwork, conflict resolution, and communication strategies. Communication strategies they found effective are based on the airline industry’s Crew Resource Management Training. For example, when a leader gives instructions, the recipient responds back (i.e. check back process) with what he/she heard to ensure the instructions were heard and interpreted correctly. In June, 2006, the Joint Commission’s Board of Commissioner’s approve the United States’ National Patient Safety Goals for 2007. Six of the fifteen goals related to communication and teamwork standards. Where as Cole and Crichton recommended “check-back” process, the Joint Commission requires for verbal and telephone orders or for telephonic reporting of critical test results, the person receiving the information must record the information and “read-back” the complete order or test result.
Funding from the Josiah Macy, Jr. Foundation provided New York University School of Medicine, Case Western Reserve University School of Medicine, and the University of Massachusetts Medical School the opportunity to collaborate in developing, establishing, and evaluating a communication skills curriculum for medical schools. Their next phase of their project will be to establish programs to disseminate their experience to other institutions interested in developing similar curricula, expanded to provide continuing education, and to evaluate their work to ensure its effectiveness (Pg.519). UCSF and this research project could benefit from information on the curriculum they developed and findings on the effectiveness of the course.

METHODOLOGY

Purpose

The purpose of this action research study was for the researcher to participate in a working group of curriculum specialists from the Schools of Medicine, Nursing, and Pharmacy, and the Work~Life Resource Center to develop, offer, and evaluate curriculum modules that introduce principles of teamwork and effective communication to improve patient care and safety. Specifically, the researcher was involved in (1) interviewing key faculty and students from the schools of medicine, nursing, pharmacy, and dentistry to find out what courses are being offered in the area of effective communication, conflict resolution, and teambuilding; (2) collecting course syllabi and class handouts; (3) working with
SIL to create a student questionnaire and summarizing the results; (4) identifying existing course materials created by other institutions; (5) creating the first draft of the two interdisciplinary course modules and evaluations; (6) assisting in organizing the two course offerings; and (7) summarizing the evaluations from the offerings.

The two interdisciplinary course modules were developed and pilot tested by the UCSF Students for Interprofessional Learning in October and November 2007. Evaluations were distributed to determine the relevancy and feasibility of offering the curriculum as an interdisciplinary course and/or core curriculum throughout the Schools.

Method

“Action research combines theory and practice (and researcher and practitioners) through change and reflection in an immediate problematic situation within a mutually acceptable ethical framework. Action research is an iterative process involving researchers and practitioners acting together on a particular cycle of activities, including problem diagnosis, action intervention, and reflective learning.” (Avison, Lau, Myers, and Nielsen, 1999, Pg.94).

A better term that describes the research proposed is participatory action research. Yoland Wadsworth (1998) describes participatory action research in her paper: *What is Participatory Action Research?*, as the following:
"Essentially Participatory Action Research (PAR) is research which involves all relevant parties in actively examining together current action (which they experience as problematic) in order to change and improve it. They do this by critically reflecting on the historical, political, cultural, economic, geographic and other contexts, which make sense of it. … Participatory action research is not just research, which is hoped, will be followed by action. It is action, which is researched, changed and re-researched, within the research process by participants. It is not simply an exotic variant of consultation. Instead, it aims to be active co-research, by and for those to be helped. Nor can it be used by one group of people to get another group of people to do what is thought best for them - whether that is to implement a central policy or an organizational or service change. Instead it tries to be a genuinely democratic or non-coercive process whereby those to be helped, determine the purposes and outcomes of their own inquiry."

**Participants**

Interviews were conducted with key faculty and students from the Schools of Dentistry, Medicine, Nursing, and Pharmacy in order to determine what is currently being offered and what they would like to see being offered. Key faculty was defined as professors who have either taught courses/workshops in teamwork and/or effective communication; researched interprofessional teamwork and effective communication skills to improve patient care and safety; or are members of the steering committee to develop the curriculum modules. Students were
defined as members of the student group, UCSF Students for Interprofessional Learning, whose interest is in increasing collaboration and improving communication between health care students and professionals in academic and clinical settings with the goal of improving patient safety and providing effective patient care. Each interview took approximately 30 minutes. In addition to interviewing key faculty and students, a questionnaire was distributed to approximately 100 Students for Interprofessional Learning. (See sample interview and survey questions in Appendix A).

Based on the needs assessment, draft curriculum for the two piloted modules was distributed to advisory group members, SIL representatives, and the instructors for review and approval. The curriculum was then finalized and distributed to the instructors.

Materials

Documents such as: course syllabi, questionnaires, evaluations, and case studies from UCSF and other medical educational institutions was collected as additional sources of information to be included in the course modules.

The qualitative research design consisted of an interview processes in which the researcher asked participants to answer certain pre-defined questions, such as: (1) Does your school provide interprofessional teamwork and communication education to improve patient care and safety? (2) Do you feel teamwork and
effective communication skills are adequately being taught in your School’s core curriculum? (3) What do you think would be the most effective way to teach the material? (4) How do you recommend we deliver the course? Occasionally, during or after the interview, additional follow-up questions were asked to further clarify a participant’s information.

Site

The interviews were conducted at a site, which was convenient for the participants. In some cases, when participants were unable to meet in person, a telephone conference call was arranged or a participant was asked to answer the questions in writing and return the answers by email to the researcher.

The pilot courses were offered at Millberry Union on the UCSF Parnassus Campus. The location was identified as being a central location that was the most convenient for students from the various schools to attend.

Invitation to Participate

Initially, the following steps were to introduce and invite the participants to participate in the study:

(1) The research would formally invite each potential participant via email (See sample email correspondence in Appendix B). Candidates would
be requested to respond via email or telephone directly to the researcher confirming their participation.

(2) Participants would be contacted directly by the researcher via phone or email to schedule an interview date, time and location. Participants also would receive the list of questions via email before the interview. Also, a consent form would be forwarded to them for their review prior to the scheduled date of the interview.

However, it was decided by the advisory group that formal steps would not be necessary to obtain this information and instead, the advisory group identified the interview participants and provided contact names to the researcher.

Confidentiality and Informed Consent

The researcher did her best to make sure that the personal information gathered for this study was kept private. Survey Monkey was used to send and receive questionnaires to the students confidentially. No personal information was gathered.

During the two course sessions, participant’s names and email addresses were gathered for the purpose of adding new members to SIL’s mailing list, but were not compiled for this study. If information from this study is published or
presented at scientific meetings, the participant’s name and other personal information will not be used.

Although an informed consent document was created for this study, it was found not necessary by the WLRC and SIL representatives who worked with the researcher and was not given to each participant prior to interview (See sample consent document in Appendix C). All participant comments and interview notes will remain anonymous.

**Debriefing Procedures**

At the conclusion of the interview, the participants were given the opportunity to debrief with the researcher, to ask questions or express any concerns he/she may have. A summary of the findings will be made available to him/her upon request.

**Data Analysis**

The data gathered was analyzed and interpreted with the goal of developing learning objectives and effective training strategies. Data gathered by this study will be invaluable to future course offerings for students throughout UCSF and for the possibility of expanding the offering to include faculty, staff, and practitioners.
Organizations that may look at and/or copy the research records for research, quality assurance, and data analysis include: UCSF Schools of Dentistry, Medicine, Nursing, and Pharmacy; Work~Life Resource Center; Interprofessional Education Taskforce, and Student for Interprofessional Learning.

LIMITATIONS

Preliminary research has demonstrated the need to offer interprofessional teamwork and effective communication skills training to all students at UCSF. The number of participants interviewed was small and only provided a general needs assessment of what and how the courses should be offered, not what they felt was inherently wrong, if anything, with the team structure at this time.

The course curriculum was primarily developed by the researcher and reviewed by one School of Nursing faculty member, the Director of Work~Life Resource Center, mediation officer of the Work~Life Resource Center, chairperson of the SIL and the instructors for the course. Previously planned collaboration with curriculum developers from various other schools was unsuccessful because of time and commitment constraints on their parts.

It was not mandatory for students to complete a session evaluation and thus, 44% were received from session 1 and 76% from session 2. In addition, many of the students had very little time to complete the evaluations at the end of each session because they had additional classes to attend or were scheduled for clinical work.
Thus, only general feedback was gathered on the effectiveness of material presented.

RESEARCHER’S BIAS

The researcher conducting this study has a bias toward the subject of interprofessional teamwork and effective communications skills training to improve patient care and safety. The researcher has over 25 years of experience working as an operational manager in units at UC that have promoted the use of teams to enhance work performance and yield better end results/products. In addition, the researcher is a volunteer mediator for the Work~Life Resource Center and supports the director’s vision of creating a Center for Interprofessional Communication and Conflict Management at UCSF. The researcher is, however, in the Organizational Psychology Masters’ Program and understands it is in her best interest to remain neutral in order to learn more from others perspective on the subject area. Thus, the research was aware of her biases and tried to remain open to all data, as it was presented.

RESULTS

Introduction

In November 1999, the Institute of Medicine (IOM) – Committee of Quality of Health Care in America published the report: “To Err is Human: Building A
Safer Health System”. The Committee found that close to 100,000 people in the United States die in hospitals each year as a result of medical errors that could have been prevented. One of the IOM’s recommendations was to establish interdisciplinary team-training programs in hospitals to enhance communication between health professionals and staff.

Ever since the IOM called on educators to improve patient safety by provide interdisciplinary team-training programs, universities across the country have been grappling with the barriers to health science education. Faculty, staff, and students at the University of California at San Francisco (UCSF) have recognized the need for interdisciplinary team education. In response, educators at UCSF have been working together to bring interprofessional experiences to their student’s curricula. Thus, this study includes five components: review of existing course offerings, faculty and student interviews, the development of course modules, delivery of the course modules, and the evaluation of the modules.

**Review of Existing Course Offerings**

In late 2006 through early 2007, the researcher collected information on courses in teamwork, communication, and/or conflict management at UCSF, other bay area institutions, and the Internet. The intention was to identify if interprofessional teamwork and/or communication course content would need to be newly created or could possibly be acquired.
Below lists the schools and the course titles for classes which offer course work in the area of teamwork, conflict management and/or communication in the Greater Bay Area or online:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Course Titles</th>
</tr>
</thead>
</table>
| UCSF-School of Medicine | • Foundations of Patient Care  
• Intersession |
| UCSF–Osher Center for Integrative Medicine | • Social & Behavioral Sciences & Medical Education  
• Emotional Intelligence in Medicine |
| UCSF –School of Nursing | • MEPN: Effective Communication |
| UCSF- School of Dentistry | • No specific course, within 3&4th year students lectures |
| UC Berkeley | • Negotiations and Conflict Resolution  
• Introduction to Peace & Conflict Studies |
| John F. Kennedy University | • Organizational Conflict Management  
• Strategies for Communication and Team  
• Conflict Management and Cultural Sensitivity  
• Cross-Cultural Awareness |
| San Francisco State University | • Interpersonal Communication  
• Gender and Communication  
• Nonverbal Communication  
• Intercultural Communication  
• Organization Communication  
• Social Conflict and Conflict Resolution  
• Cross-Cultural Perspectives in Psychology |
| Agency for Healthcare Research & Quality | • TeamSTEPPS (Web-based Training located at: http://www.ahrq.gov) |
| Healthstream | • The Human Factor: Effective Teamwork and Communication (Web-based Training located at: https://www.healthstream.com) |
| CRICO/RMF | • Teamwork as a Tool for Patient Safety (Web-Based Resources located at: http://www.rmf.harvard.edu/) |

Most of UCSF course material pertained to effective communication between practitioner and patient. There was very little material found that addressed medical teamwork and effective medical team communication. Other institutions
offered courses that provided generalized training in teamwork and communication, which could be useful in an introduction course. Based on further review, the most comprehensive course material for the health professionals was developed by: Agency for Healthcare Research and Quality. (2006). TeamSTEPPS™: Strategies and Tools to Enhance Performance and Patient Safety. *Agency for Healthcare Research and Quality.* The material is located at: [http://www.ahrq.gov/qual/teamstepps](http://www.ahrq.gov/qual/teamstepps) and includes instructor guides, PowerPoint slides, case scenarios, and video clips.

**Faculty and Student Interviews**

Interview 1: UCSF School of Medicine Respondents

Two faculty from the School of Medicine responded to our request for participation (P1 & P2). P1 felt the school provided adequate interprofessional teamwork and communication education. P1 stated: “The student’s entire curriculum from Day 1 of medical school focuses on effective communication through emphasis on professionalism. Communication skills with patients and the health care team are part of a curriculum block that runs throughout the first and second year where students work in small groups and have their first patient care experiences. The curriculum is called Foundations of Patient Care. When students transition to their third year, they spend the next two years doing hospital and clinical rotations, working with patients, staff, families, etc. Communication skills are taught, modeled, and evaluated. In addition, they put a huge amount of
emphasis on students’ developing appropriate physician-ship skills and acting in a professional manner. These skills (of which communication is one of them) are also evaluated throughout four years of medical school, but especially during the third and fourth years.”

P2 added, “There is a need to offer a course in conflict resolution and communication, but getting students to attend may be very challenging and probably only “preaching to the choir” and those who really should attend will not. At this time, the students are not required to take any electives. Electives are basically for self-enrichment. Most electives are offered between noon-1:00pm or the afternoons Monday, Wednesday, or Friday between 3-4pm.” The respondent recommended that we consider approaching the faculty who teaches Intersession – 112 to find out if there is any interest from the faculty, for a module that can be added to existing case-based courses that are taught at intervals throughout the third year which focus on tools for patient care in three domains: 1) clinical decision-making, 2) moral foundations of medicine, including professional development, and 3) context of health care.

Interview 2: UCSF – Osher Center for Integrative Medicine

Participant 3 (P3) and a colleague from the Osher Center of Integrative Medicine had previously offered elective courses in emotional intelligence at UCSF that was funded by the National Institutes of Health. Their goal was to provide an enriching, evidence-based look at how emotions in the medical student, their
patient, and their team will affect their medical training and ultimately style and skill as a physician. Historically, this skill-based class was available only as a continuing medical education for faculty or as a part of the behavioral medicine curriculum for senior primary care residents. Each class was a mixture of self-reflection, evidence-based reviews, active skill-based practice, and applications of these skills to the ongoing cases they are following in the essential core curriculum blocks. Participants learned the predictors and detractors from physician and the essential strategies to avoid medical student burnout. They learned to communicate and connect with culturally diverse patients who may have extremely challenging emotional styles or psychiatric disorders. They learned how to understand and interact with some times difficult team members, residents, and attending. In short, they learned essential survival skills with broad applications to nearly all areas of medical practice. The course is no longer offered because the grant that supported the creation of the course has ended and P3 is currently working on developing new curriculum to prepare physicians to meet the rapidly evolving needs of a diverse population.

P3 mentioned that interprofessional communication and conflict management training is being done in “pockets” throughout UCSF. Course modules need to be created based on the audience. For example, 1st and 2nd year students, training will need to be more focused on how to work in the essential core group that is comprised of approximately 14 people. If it is during their clerkship years, then the focus is on how the student can deal with hierarchies. 4th year students are
dealing with various ad-hoc teams in which they do not know the other practitioners.

Interview 3: UCSF – Students for Interprofessional Learning

Three students who represent the Students for Interprofessional Learning (SIL) were interviewed. There are approximately 100 students from the four schools who have indicated an interest in being a member of the SIL. The impetus for forming SIL was primarily based on:

- Students personal feeling that they did not know other students from the other schools;
- Attending the Interprofessional Education Day sponsored by the Chancellor’s Office, the students from all schools came together to learn about the importance of interprofessional teamwork and communication in the context of patient safety;
- Triad for Optimal Patient Safety (TOPS), a three hospital, interdisciplinary study of teamwork and communication skill training to improve patient safety;
- Dr. Robert Wachter, UCSF Professor of Medicine and author of *Internal Bleeding: The Truth Behind America’s Terrifying Epidemic of Medical Mistakes*.

The Objectives and Goals of the SIL are:
• To form an interdisciplinary community between pharmacy, dentistry, physical therapy, nursing, and medicine students.

• To increase collaboration and improve communication between health care students and professionals in academic and clinical settings with the goal of improving patient safety/ providing effective patient care.

• To educate students and the community about the roles and responsibilities of various health care professionals; discuss what each is learning in their respective schools; highlight similarities and differences.

• To raise awareness of issues surrounding interprofessional communication, its impact on patient safety/patient care.

• To promote an interdisciplinary approach to patient care while flattening the hierarchy between different team members.

• To get exposure and gain support from UCSF and the other UC campuses.

• To foster community and collegiality between students before and after entering the clinic/hospitals.

The three SIL representatives (2 from the School of Medicine and 1 from the School of Nursing) felt that teamwork and effective communication was not adequately being taught in their core curriculum because the emphasis was primarily dealing with doctor-patient, nurse-patient relationship vs. medical practitioner-to-practitioner interaction. Originally, the SIL was planning to offer a Spring 2007 elective course (1-hour for 9-10 weeks or 2 hours, every other weeks for 5 weeks) that would include discussion, case studies, and lectures. Due to the shortness of time and students to organize the elective, they decided to collaborate
with WLRC to offer a 1-hour seminar on improving medical team communication.

**Student Survey**

In February 2007, approximately 100 Students for Interprofessional Learning were surveyed to find out what topics would be of interest to them. 47 responded to the questionnaire (17 from Medicine, 17 from Nursing, and 13 from Pharmacy, 0 from Dentistry or Physical Therapy).

The topics participants were most interested in learning were:

- **83%**: How a 3rd year medical student, first/second year nursing student, and 3rd/4th year pharmacy student, dental or physical therapist student successfully can navigate interprofessional interactions during their rotations.

- **80.9%**: How the culture of medicine, nursing, and pharmacy, etc. impacts interprofessional communication.

- **68.1%**: How to communicate effectively in an interprofessional team.

- **53.2%**: How to develop an awareness of communication that has or can compromise patient safety.

- **14.9%**: Other:

  - Expectations of each group about my role.
  - Information on the roles of each health professional beyond the brief generalization.
• Change curriculum where the schools merge on the basic topics and break into discussion sections relevant to our fields

• Interaction with students from other schools. Know more about their training

• How to breakdown inter- and some unnecessary intra-professional hierarchies

• How to navigate teams that are emotionally abusive towards students, e.g. emotionally toxic teams impeding ability to effectively communicate with the team and ability to effectively communicate with the patient.

In addition, the students were asked an open-ended question: “If you had the chance to speak to a professional who was not in your field, what question(s) would you ask? “ (See Student Questionnaire Compiled Results in Appendix D). Their responses fell into six main categories:

1. Teambuilding: How can we work together as a team?

2. Information sharing: What do you do?

3. Communication: What can make communication better?

4. Self-Reflection: Are you happy with what you are doing?

5. Perceptions/ Cultural Awareness: How do other professionals view their real or potential interfaces with other professionals?

6. Conflict Resolution: How can we reduce tension with other professionals?
Based on the information provided by the interviews and the survey, a “pre-pilot” interprofessional seminar was developed and offered February 26, 2007. Approximately 70 medical, nursing, dental, physical therapy and pharmacy students and faculty had the opportunity to watch the video *First Do No Harm* and then engaged in a lively discussion facilitated by Dr. Arpana R. Vidyarthi, a clinician and assistant professor in the Division of Hospital Medicine at UCSF. She is also the Director of Quality for the Inpatient General Medicine Service at UCSF Medical Center and the Director of Patient Safety and Quality Programs for the Dean’s Office of Graduate Medical Education. In this role, she designs programs for residencies across disciplines on safety and quality issues to improve patient care delivered by residents. She is also the Associate Director of Curricular Development for the Integrated Nurse Leadership Program, a Betty and Gordon Moore Foundation program that brings together nurses and healthcare executives developing leadership skills to implement quality and safety initiatives in their hospitals. Dr. Vidyarthi’s research interests lie at the intersection of system change, patient care, and education. Specifically, she studies the impacts of duty hour reduction, handoffs, and leadership and management training.

The film, based on real events drawn from medical malpractice claims, illustrates how a sequence of errors and lapses in communication culminate in tragedy for a pregnant woman and her newborn child. Dr. Vidyarthi then discussed James Reason’s “Swiss cheese” model and its applicability to the healthcare system. In this theory, numerous mistakes have the potential to “line up” like holes, resulting in compromised patient safety.
Judging from the questions and comments that ensued, students were profoundly affected by the film and its implications for their own clinical experiences and future practices. Masters Entry Program in Nursing student remarked on how quickly the one-hour event went by. “I thought there was a good turnout, and discussion came easily. The fact that an hour was too short reflects a need for more events like this or for it to be integrated into the curriculum.”

Outgoing SIL Chair agreed. “I think that bringing students together under one roof to talk about these issues is essential to improving how we communicate with each other in the clinical setting, and will also foster mutual respect and understanding.” A second-year medical student added, “It surprises me that this has not been done before, but I applaud the school administration for taking a leading role on this, and am encouraged by the increasing student interest. With more student involvement, SIL’s goal of providing venues for students to discuss their training, contribution to patient care, philosophy, communication styles, and expectations will become a reality.”

**Development of Course Modules**

From March through September 2007, additional research and curriculum development efforts were used to create two course modules (See Enhancing Interprofessional Teamwork & Communication Skills to Improve Patient Care and Safety at UCSF – Module Outlines in Appendix E). The course goals were:
(1) to promote understanding of and respect for the roles of various health care professionals to improve patient care and safety; (2) to promote collaboration and communication among health care professionals to improve patient outcomes. Eventually, when the entire curriculum is developed (six course modules), the overarching outcomes for the student will be: (1) to understand the impact of interprofessional teamwork and communication skills on patient care and safety; (2) to gain knowledge about and practice interprofessional teamwork and communication; (3) to be able to discuss barriers that prevent effective teamwork and communication (cultural and system issues); and (4) to be able to identify and use tools and appropriate behaviors to improve teamwork and communication.

**Delivery of Information**

The course modules were piloted to the SILs on October 23 and November 7, 2007 at the Millberry Union at UCSF. Michael Fox, RN, BSN presented the first course module. Dr. Arpana Vidyarthi, Director of Quality, Director of Patient Safety and Quality Programs, and Assistant Professor of Medicine presented the second module. The course modules covered the following topics:

- Scale & scope of medical errors and patient harm
- Safety lessons from other high-risk industries
- Discuss medical errors and communication breakdowns
- Discuss interprofessional teamwork and/or communication experiences at UCSF
- Differences in communication style between health professionals
Tools to enhance teamwork and communication

Tools to further enhance teamwork and communication and prevent errors

Putting knowledge into practice

Evaluations

Module 1:
The first module was a two-hour seminar and was offered on October 23, 2007, by Michael Fox, RN, BSN, and a School of Nursing faculty member who is one of the pioneering members of patient safety movement at UCSF. He previously had been a project leader of the Triad for Optimal Patient Safety—a three hospital interdisciplinary study of teamwork and communication skills training to improve safety culture funded by the Moore Foundation. He teaches and trains health providers nationally in key aspects of patient safety including interprofessional communication, collaboration, and teamwork.

Approximately 50 participants attended the seminar (16% Dentistry, 15% Medicine, 10% Nursing, 39% Pharmacy, 10% other) and 17 students completed an evaluation. Below is the summary:

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<th>Total</th>
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<tr>
<td>Medicine</td>
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</tr>
<tr>
<td>Nursing</td>
<td>5</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>7</td>
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<tr>
<td>-----------------</td>
<td>---</td>
</tr>
<tr>
<td>Physical Therapy</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
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</tr>
<tr>
<td>Total:</td>
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</table>

<table>
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<th>Average Rating</th>
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<tbody>
<tr>
<td>Program provided helpful information</td>
<td>4.2</td>
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<tr>
<td>Presenter did a good job</td>
<td>4.6</td>
</tr>
<tr>
<td>Recommend the course to a friend</td>
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</tr>
</tbody>
</table>

Summary of Comments:

- What they liked about the session:
  - Provided the opportunity to interact with students for other schools.
  - Opportunity to discuss medical errors, team & communication issues.
  - Provided good information and statistics.
  - Expansion from class lectures.
  - Provided the opportunity to discuss the need to speak up and be assertive when working in teams.
  - Provided opportunity to role-play.
  - “Gorilla” video was insightful.
  - Anecdotes are powerful.

- What they dislikes about the session:
  - Did not provide source of some of the statistics.

- Recommendations for improvement:
More interaction with students from the other schools.

Provide concrete teambuilding training to build team culture.

Other comments and/or ideas for future seminars:

- Need more courses like the one just offered.
- Comparison of hospital system differences, new things that work that UCSF should promote, pending legislation that affects patient safety / interprofessional communication.

### Module 2:

Former instructor, Dr. Arpana Vidyarthi, Director of Quality, Division of Hospital Medicine, Director of Patient Safety and Quality Programs, and Assistant Professor of Medicine at UCSF offered the second seminar that was a 1-hour seminar held on November 7, 2007.

Approximately 35 participants attended the seminar (43% Dentistry, 14% Medicine, 5% Nursing, 38% Pharmacy) and 16 students completed an evaluation.

Below is the summary:

<table>
<thead>
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<th>Evaluations collected from students of:</th>
<th>Total</th>
</tr>
</thead>
<tbody>
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<tr>
<td>Medicine</td>
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<td>Nursing</td>
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<tr>
<td>Pharmacy</td>
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<tr>
<td>Physical Therapy</td>
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</tr>
<tr>
<td>Other</td>
<td>1</td>
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<tr>
<td>---------------</td>
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<tr>
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<th>Rating (1=dismal “no”; 5=resounding “yes”)</th>
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<td>Presenter did a good job</td>
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<tr>
<td>Recommend the course to a friend</td>
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Summary of Comments:

- What they liked about the session:
  - Provided good information.
  - Provide the opportunity to interact with students for other schools.
  - Opportunity to discuss medical errors, team & communication issues.
  - Opportunity to think about situations not discussed in classes.
  - “Do no harm” video brings home the important message.

- What they dislikes about the session:
  - Not enough students from each school.

- Recommendations for improvement:
  - Need to provide dental case student in future seminars to appeal to dental students.
  - Pertaining to the video: Have each professional make a list of the things their profession did right and wrong, and what other professionals did right and wrong.
• Provide more time to analyze case scenarios.

DISCUSSION

It is important to remind ourselves that close to 100,000 people in the United States die in hospitals each year as a result of medical errors that could have been prevented. One of the Institute of Medicine recommendations was to establish interdisciplinary team-training programs to enhance communication between health professionals and staff. Numerous research papers and medical journals document the importance of developing interdisciplinary approaches in education, research and health care delivery to treat patients.

UCSF has acknowledged the importance of communication and collaboration as central to providing high-quality patient care and safety. The first priority listed in the UCSF Strategic Plan specifically calls for ensuring that “students and trainees are immersed in a culture that embraces interdisciplinary, interprofessional and transdisciplinary educational programs.” Two Interprofessional Education Days for new students from across all five professional schools and three seminars offered to the Students for Interprofessional Learning have been well attended and well received. Although seminars and student groups are helpful on keeping interest up, it is now a critical time for UCSF to institutionalize interprofessional education. Without a strategic plan, formalized organization, policies, faculty development, and interprofessional courses created, the vision will fade and be consumed by another strategic priority.
In addition, based on the feedback received from the students who submitted responses to the questionnaire and who attended the seminars, further exploration is needed to determine whether or not some of the training provided in each school can be taught as interdisciplinary course offerings. For example, provide an interdisciplinary course on effective communication amongst health professions that is a required course for students from all schools to attend. In addition, the faculty in charge of curricular affairs will need to address logistical issues such as: limited classroom space and different academic schedules of each school. Within each course module there needs to be greater opportunity for (1) students to learn more about the various health professions culture and how that impacts interprofessional communication; (2) more role playing and use of effective communication and teambuilding tools; and (3) more opportunity for the students to analyze case scenarios as a interdisciplinary team.

Medical educators throughout the nation confirm the importance of providing interprofessional communication and teamwork curriculum. Yet, implementation of an interprofessional program is extremely challenging and requires top-down and bottom-up authority, working groups, and institutional policies such as interprofessional core course numbers, shared costs, and development of a culture of inter-professionalism among faculty and students across program boundaries. (Academic Medicine. 2005: 81:891-896). UCSF can gain knowledge and insight from University of Washington Center for Health Sciences Interprofessional Education and Research who has promoted interprofessional collaboration in
education, service, and research beginning in the early 1950s. Since 1997, colleagues in the schools of medicine, nursing, pharmacy, public health and community medicine, and social work, the University of Washington’s physician assistant program: MEDEX Northwest, and the Health Sciences Library and Information Center, have come together to identify models of interdisciplinary education and to prepare health care professionals for the rapidly changing health care of the 21st century. The group has successfully received university funding to create a Center for Health Sciences Interprofessional Education and Research. The center is the umbrella for many interprofessional courses, programs, and activities at the university.

For UCSF to successfully introduce and sustain interprofessional education throughout the institution, it would make sense to review the framework identified by the University of Washington. The University of Washington identified four elements that must be in balance in order to succeed and persist: strategy, structure, technical expertise, and culture.

“Without a strategic perspective that is important to the institution, nothing significant happens. Organizational structure is important to support the initiative and to spread it throughout the academic health center. Without appropriate structure, important changes do not remain in place. Technical expertise refers to the training and skills essential to catalyze important changes. Cultural elements are the underlying beliefs, norms, and
behaviors that support or inhibit change. Both structural support
and cultural support are necessary if changes are to be other than
small, local, or temporary.” (Pg.892)

Within the four elements, they have identified eight components of a successful
interprofessional program: institutional leadership, faculty champions,
institutional policies, physical infrastructure, a culture of collaboration, personal
relationships, financial support, time, and flexibility. Out of the eight
components, institutional leadership and faculty champions were identified as key
components to achieving strategic goals. Institutional leadership includes faculty
with both administrative and “rank and file” faculty appointments, which then
creates a mix of top-down and bottom-up functions within the center’s steering
committee, advisory group, and faculty, staff, and students.

Structurally, it is important for the center to report to a board of deans which is
comprised of one representative from each partner school, but the majority of the
work is accomplished from a wider steering group made up of working
subgroups, affiliated faculty, and partners (includes student, extracurricular
student groups, and community stakeholders). The working subgroups form and
reform as projects and initiatives are delegated from the steering committee.
Monthly steering meetings and periodic retreats keep communication flowing and
allow leaders to evaluate ongoing decisions.
Key to the center’s success are institutional policies that provide interdisciplinary course designations which denote that courses are being offered collaboratively from two or more units throughout the university. They have found that lack of policies for sharing credit for teaching in team-taught courses has been a barrier to equitably incorporating interprofessional courses into faculty teaching loads across the schools. In addition, the University of Washington has changed policies to allow sharing of indirect cost recovery for externally funded projects, this has also facilitated the professional schools to work together to secure funding, support the center’s operation, and enhance visibility.

The core technical competencies that the University of Washington agreed that every health science student should achieve by graduation are:

- Competence in one’s own clinical practice and discipline;
- Respect and appreciation of roles and approaches to clinical and social problems of one’s own and other disciplines;
- Understanding the population context for care of a population and/or patient;
- Understanding the complexity of population health that requires interdisciplinary strategies for cost savings and cost-effectiveness; and
- Basic group process skills, including communication, negotiation, time management, and assessment of group dynamics.

The University of Washington also has a student-led group, Students in the Community, that include students from all of the health-science professional
schools. The group partners with a homeless shelter to create a health promotion and wellness clinic that is student-run and faculty-supported. Center faculty act as advisors to the students.

Faculty from the medical school’s Department of Medical Education and Biomedical Informatics have taken the lead in faculty development and use problem-based learning (case studies) and innovative evaluation techniques. Unfortunately, they cite the lack of adequate policies for sharing credit for teaching in team-taught courses as a barrier to equitably incorporating interprofessional courses into faculty teaching loads across schools.

One of the key components in the success of the University of Washington’s Center for Health Science Interprofessional Education is that the culture of collaboration and resilience has become institutionalized. Below are the changes in interprofessionalism education and research that have occurred at University of Washington:

- Achieved permanent status of the interprofessional teamwork course as part of required curricula in several programs;
- Established the clinical practicum at their Adult Rehabilitation Center as a core clinical site for several schools;
- Incorporated the coursework and clinical site developed by their Students in the Community group into the core offerings;
- Established the center as the key facilitator for interdisciplinary research training across the schools;
• Developed a repository for curricular materials and teaching aids for interprofessional training and coursework; and

• Developed evaluative materials for interprofessional competencies.

**SUMMARY AND RECOMMENDATION**

Many of the components and key elements of successful organizational change and interprofessional training cited by the University of Washington are already being developed and implemented in some programs at UCSF. As stated earlier, this is an already developed framework that UCSF would find useful to adopt. If not that, then at the very least, it will be critical that interprofessional education continue to be a strategic initiative for the Chancellor’s Office and deans. The Chancellor’s Office will need to set institutional policies that will facilitate interprofessional work as a critical component across all schools, research, and medical services. Likewise, policies for sharing credit for teaching in team-taught courses and eliminating barriers for faculty from various schools to collaborate must be addressed and resolved.

It will also be vital to continue providing full support to the already successful Interprofessional Educational Taskforce, comprised of institutional leadership and faculty champions; and to the student-led group: Students for Interprofessional Learning. Meanwhile, it will be helpful to provide the support and resources to create the proposed Center for Interprofessional Communication and Conflict
Management that will serve as the umbrella organization for many interprofessional courses, programs, seminars, and activities.

CONCLUSION

There is a growing international recognition of the need for medical educators to focus on interdisciplinary teamwork and communication skills (Kalet, Pugnaire, Cole-Kelly, Janicik, Ferrara, Schwartz, Lipkin Jr., Lazare. 2004). It is the hope of the researcher that based on this participatory action research study, the data collected, analysis of the data and the interpretation of the analysis, and the Chancellor’s Office continued support of ensuring that students and trainees are immersed in a culture that embraces effective communication and collaboration of health professional to providing high-quality patient care and safety, will lead to further institutionalizing interprofessional education, creation of policies, faculty development, and interdisciplinary course offerings.
REFERENCES


APPENDIX A:

SAMPLE INTERVIEW QUESTIONS

Question 1: Does your school provide interprofessional teamwork and communication education to improve patient care and safety?

Question 2: Do you feel teamwork and effective communication skills are adequately being taught in your School’s core curriculum?
   (a) If so – please provide examples
   (b) If not – why do you think this is so?

Question 3: Do you think faculty should be trained to incorporate teambuilding and effective communication skills in their existing curriculum courses, or that a dedicated interdisciplinary team of faculty should offer a new course? Please explain reason.

Question 4: What do you think would be the most effective way to teach the material (i.e. role play, case study examination, small group exercises, etc.)?

Question 5: How do you recommend we deliver the course (i.e. lecture, seminar series, online, etc.)?

SAMPLE SURVEY QUESTIONS

Question 1: Tell us your school and year (example 2nd year pharmacy student).

Question 2: If you had the chance to speak to a professional who was not in your field, what question(s) would you ask?

Question 3: Choose all of the topics that would be interesting for you to learn at this time:
   (c) Learn how to communicate effectively in an interprofessional team
   (d) Develop an awareness of communications that have or can compromise patient safety
   (e) The culture of medicine, nursing, and pharmacy, etc. and how that impacts interprofessional communication
   (f) How can a 3rd year medical student, first/second year nursing student, and 3rd/4th year pharmacy student, dental, or physical therapy student successfully navigate interprofessional interactions during their rotations
   (g) Other (please specify)
APPENDIX B: SAMPLE E-MAIL INVITATION TO INVITE PARTICIPANTS

Subject: Invitation to Participate in Study

I am a graduate student in the Masters of Organizational Psychology program at John F. Kennedy University in Pleasant Hill, California. I am conducting a research project under the advisement of Alma Sisco-Smith, MS, MA, Director of UCSF Work~Life Resource Center.

The purpose of the study is provide curriculum specialists in UCSF Schools of Dentistry, Medicine, Nursing, and Pharmacy and the Work~Life Resource Center with information re how to develop, and most effectively offer a new interprofessional teamwork and communication skills curriculum that could improve patient care and safety.

We are asking you to please take part in this study because you are or have taught courses/workshops in teamwork and/or effective communication, or have researched interprofessional teamwork and effective communication skills to improve patient care and safety, or have participated on the Interprofessional Education Task Force, or have been involved in the Students for Interprofessional Learning group.

The study will be conducted through a series of interviews; each interview is expected to be of 45 minutes in duration. The interviews will be conducted at a site and time, which is convenient for you. You may also be contacted by phone or email at a later day for clarification or follow-up necessary to insure accuracy of data.

Participation is completely voluntary and you can decide to stop at any time. Taking part in the study will help health professionals and curriculum specialists to better determine learning objectives and to identify the most effective training strategy to teach the material.

We will do our best to make sure that the personal information gathered for this study is kept private. If information from this study is published or presented at scientific meetings, your name and other personal information will not be used. A summary of the results of this study will be available to participants upon request after completion of the study.

Thank you for your consideration. I sincerely hope that you will choose to participate. If you have any questions or would like to talk with me further before making a decision to participate, please contact me at 415-476-0768 or morikawawons@stemcell.ucsf.edu.

Sincerely,
Stacey Morikawa-Won
APPENDIX C: CONSENT FORM

DEVELOPING CURRICULUM MODULES FOR ENHANCING INTERPROFESSIONAL TEAMWORK AND COMMUNICATION SKILLS TO IMPROVE PATIENT CARE AND SAFETY AT UCSF

My name is Stacey Morikawa-Won. I am currently a graduate student in the Masters of Organizational Psychology program at John F. Kennedy University in Pleasant Hill, California. The research project is a requirement toward the completion of my Master’s degree. This research project is being conducted under the advisement of Alma Sisco-Smith, MS, MA, Director of Work~Life Resource Center at UCSF and Sharon Mulgrew, MPH, JFKU – Organizational Psychology Project Advisor.

Project Summary: This research study will provide curriculum specialists in UCSF Schools of Dentistry, Medicine, Nursing, and Pharmacy and the Work~Life Resource Center with information re how to develop, and most effectively offer a new interprofessional teamwork and communication skills curriculum that could improve patient care and safety.

You are being asked to take part because you are or have taught courses/workshops in teamwork and/or effective communication, or have researched interprofessional teamwork and effective communication skills to improve patient care and safety, or have participated on the Interprofessional Education Task Force, or have been involved in the Students for Interprofessional Learning group. About 15 people will be asked to take part in this study.

The study will be conducted through a series of interviews; each interview is expected to be of 45 minutes in duration. The interviews will be conducted at a site and time, which is convenient for you. You may also be contacted by phone or email at a later day for clarification or follow-up necessary to insure accuracy of data.

The data gathered will be analyzed and interpreted with the goal of developing learning objectives and effective training strategies. Data contributing to this study will be invaluable to future course offerings to all students throughout UCSF and the possibility of expanding the offering to include faculty, staff, and practitioners.

Benefits To Taking Part in the Study: The information that you provide may help health professionals and curriculum specialists to better determine learning objectives and identify the most effective training strategy to teach the material.

Confidentiality: We will do our best to make sure that the personal information gathered for this study is kept private. However, we cannot guarantee total
privacy. If information from this study is published or presented at scientific meetings, your name and other personal information will not be used.

Organizations that may look at and/or copy your research records for research, quality assurance, and data analysis include: UCSF Schools of Dentistry, Medicine, Nursing, and Pharmacy; Work-Life Resource Center; Interprofessional Education Taskforce, and Student for Interprofessional Learning.

**Availability of Results:** A summary of the results of this study will be available to participants upon request after completion of the study.

If you have any questions, comments, or concerns about taking part in this study, first talk to researcher: Stacey Morikawa-Won at 415-476-0768 or morikawawons@stemcell.ucsf.edu.

| Consent:  I hereby consent to participate in the above research project. I understand that my participation is voluntary and that I may change my mind or refuse to participate or withdraw at any time without consequence. I may refuse to answer any questions or I may stop the interview. I understand that some of the thing I may say may be directly quoted in the text of the final report, and subsequent publications, but that my name will not be associated with this study. |
| Participant Signature: ___________________________ Date: __________ |
| Name: (Please Print): ___________________________ |
APPENDIX D: STUDENT QUESTIONNAIRE COMPILED RESULTS
FOR THE FOLLOWING QUESTION—

If you had the chance to speak to a professional who was not in your field
what question(s) would you ask? (Note: this question was asked to
approximately 100 students from the 5 disciplines.)

1. Do you ever wonder why we don’t have classes together even though we
are learning the same basic things? Wouldn’t it be nice if we all were in 1
class and they just separate into discussion sections where we discuss the
lecture pertaining to our field? What tips do you have that would be
helpful to us? What would you like to know about us?

2. How can we work together as a team? Honestly, as a nurse practitioner
student, I find that I’m the one often explaining who I am as doctors,
pharmacists, physical therapists, dentists, etc. seem to have a better
understanding of what the other professional does while people are often
unsure how a NP/CNM fits in.

3. What expectations do they have of people in my field, and what kinds of
communication strategies have been effective?

4. How important is it to include nurses in your conversations within the
medical team?

5. I’d like to ask doctors and pharmacists what their view of the nursing
profession is. Do they view it as less sophisticated than their professions?

6. I would ask how they perceive and interact with professionals in my field
of practice. Furthermore, how do they view each health professional’s role
in the healthcare team? Finally, I would want to know ways in which they
think communication, respect, and delegation of responsibilities can be
improved.

7. How do you interact with pharmacists? What value/expertise do you feel
your training brings to patient care? What value do you believe
pharmacists bring with their training? How do you see
interprofessionalism playing out in the “real world”?

8. MD programs- brief description of education program (How many years
of clinical work? What are the main topics for classes?). Pharmacy
programs- same questions and a description of their role in health care.

9. What is your stress level? What is a typical day like? Do you have a lot of
patient interaction?

10. What do you like about collaborating with nurses? What could work
better?
11. What are your opinions of pharmacist managing low risk patients and prescribing medications in the community setting? What are your opinions of pharmacists? How can a pharmacist help contribute to care of your patients in particular?

12. How did you become what you are today?

13. Go through what you do on a normal shift. Please explain to me what you see your role is on the health care team? What can I do to make your tasks run smoother?

14. I’d love to talk to MDs about their training, medical school, and residency. I’d also like to know generally what MDs know about NP and CNM training and what their expectations working with NPs and CNMs have been like.

15. I would ask a MD: Tell me about the level of education and pharmacology knowledge a pharmacist has. How much do you trust a pharmacist to make a medication recommendation? Do you consider pharmacists on the level of your “colleagues”, other MD’s?

16. What can I do to help you in your duties?

17. For medical doctors: What do you think the roles of pharmacists are? How can pharmacists help you, and how can you help pharmacists? For nurses: How can pharmacists help you in your job and how can we work together to get the correct medication to the patient? For dentists: Do you know what pharmacists can do and how to utilize pharmacists? Do you need further understanding of medications?

18. As a pharmacist, what kinds of things would you expect from me? How do you see your role in patient care?

19. How do you effectively resolve conflicts with other professionals?

20. What have been your experiences working with people in my field?

21. Would you be willing to cooperate with a clinical pharmacist? Do you see the importance of a clinical pharmacist in the setting you wish to practice in the future?

22. What are the main tools they used to become a leader in their process of role acquisition?

23. What barriers do you find in communicating with other disciplines? What can you bring to the table to communicate more effectively? How do you
think we can change the current climate within the healthcare setting (inpatient and outpatient setting) to foster better communication?

24. What do doctors most need to learn from nurses? From pharmacists? What do doctors do that most disappoint or anger you? What do doctors do that makes your job harder? What can doctors do to improve the way you care for patients? What can you do to improve quality of care?

25. What do you do? What are your expectations of the role of the physician?

26. Are you happy with what you’re doing?

27. I’m curious about the cultural beliefs/attitudes they received overtly or covertly about my discipline and others in their educational programs.

28. What can you do and how can we accentuate each other’s skills/abilities?

29. What can make communication better?

30. What can other team members do to improve communication with you?

31. How can we build more of a team environment within the medical professions?

32. Why is it so difficult or at least unusual for doctors to recognize and appreciate the nurses do the best they can in terms of keeping the doctors informed but that we have a lot of patients and can’t always do everything they want right then? Also, why won’t pharmacists call the doctors themselves instead of always forcing the nurse to be the middleman? If there is anything wrong with an order for a medication, the pharmacist calls the nurse when the nurse can’t do a single thing about it but just has to turn around and call the doctor. Wouldn’t we save everyone time if they called the doctor themselves?

33. What do you enjoy most about your profession? What changes would you like to see in your profession? What things do you think people in my profession can do to help people in your profession?

34. To Medicine- What is your overall opinion of the nurses you have worked with? Also to Medicine – Are you truly interested in engaging in more open communication to better patient outcomes?

35. I would be curious how other professionals view their real or potential interfaces with nurses.

36. What are your pet peeves about working with physicians?
37. Is there tension with other professionals in other fields? What frustrates you the most about health care?

38. What is your normal day like for you? What do you like about your job? What don’t you like about your job? How do you perceive doctors? Do you have problems interacting with doctors? What are they and how could they be addressed?

39. Why did you choose your field?
Enhancing Interprofessional Teamwork & Communication Skills to Improve Patient Care and Safety at UCSF

(Note: In Session 1 students received a handout that included SBAR, Advocacy & Assertion tools and a case scenario.)

Goals

➢ Promote understanding of and respect for the roles of various health care professionals to improve patient care and safety

➢ Promote collaboration and communication among health care professionals to improve patient outcomes

Overarching Outcome

Students will:

➢ Understand the impact of interprofessional teamwork & communication skills on patient care and safety

➢ Gain knowledge about and practice interprofessional teamwork & communication

➢ Be able to discuss barriers that prevent effective teamwork and communication (cultural and system issues)

➢ Be able to identify and use tools and appropriate behaviors to improve teamwork and communication

Module 1:

- Scale & scope of medical errors and patient harm
- Safety lessons from other high-risk industries
- Discuss medical errors and communication breakdowns
- Discuss interprofessional teamwork and/or communication experiences at UCSF

Module 2:

- Differences in communication style between health professionals
- Tools to enhance teamwork and communication
- Tools to further enhance teamwork and communication and prevent errors
Putting knowledge into practice

Reference Materials (create website for students to access):

- Journal articles
- List of reference books and key websites
- Keywords & definitions
- Tools
MODULE 1

Introduction - Scale & scope of medical errors and patient harm: (12:00-12:05 or 5:30-5:35)

- In late 1999, the Institute for Medicine (IOM) estimated in their landmark report To Err is Human: Building a Safer Health System that preventable medical errors in U.S. hospitals cost an estimated 98,000 patient lives and $17 to $29 billion every year. The IOM further concluded that medical errors could be significantly reduced through fundamental changes in our national healthcare system. One of their key recommendations was the healthcare organizations “establish interdisciplinary team training programs for providers that incorporate proven methods of team training…”

- A Joint Commission evaluation of more than 3,000 root cause analyses done from 1995 to 2004 found that more than 65% of sentinel events in accredited health care organizations were caused by communication problems; in 2005, that percentage was nearly 70%. In addition, studies show that at least half of communication breakdowns occur during handoffs. For these reasons, the Joint Commission continued standardization of handoff communication as one of the 2007 National Patient Safety Goals.

- J. Reason (2000) Human Error: Models and Management describes the impact of poor teamwork with his model: the “Swiss Cheese Model of System Accidents”. If multiple errors occur in a fashion like aligning the holes in Swiss cheese, errors can get through, resulting in adverse medical mistakes. Reason states that, “When teamwork is strong on a patient unit, one team member will catch an error of another member before an adverse event occurs. They are aware of the strengths and vulnerabilities of one another and they are cognizant of the activities of the other team members.”

Safety lessons from other high-risk industries: (12:05-12:10 or 5:35-5:40)

After discovering that two-thirds of air crashes involve failure in teamwork, the air transportation industry began focusing on crew resource management (CRM) training to improve team communication. Two key communication components of CRM are: (1) improving collaboration through briefings, and (2) promoting appropriate assertiveness within teams.

- Commercial aviation, air traffic controllers, and firefighting crews parallels medical profession in that:
  - Highly trained professionals
  - Technology intense
Perform complicated procedures

The first application of CRM principles to medicine was by Professor David Gaba of Stanford, who through the possession of a pilot’s license had ready access to the concepts of CRM training. Gaba designed a course for anesthetists focusing on the use of CRM skills to manage crises in the operating theatre, anesthesia crisis resource management (ACRM).

Adapting CRM techniques in health care means:
- Looking at the communications that take place during transitions in a patient’s care, for example, admission from an outpatient setting, nursing shift change, prior to an invasive procedure, and
- Training all providers in the assertiveness techniques needed for voicing concerns regarding the patient’s status, treatment protocol, or care plans.

Discuss Medical Errors and Communication Breakdowns: (12:10-12:40 or 5:40-6:10)

- Videotape: Do No Harm (Example of medical system errors) (18 minutes) followed by discussion (12 minutes)

-OR-

Medical Errors: Errors result from physiological and psychological limitations of humans. Causes of errors include fatigue, workload, and fear as well as cognitive overload, poor interpersonal communications, imperfect information processing, and flawed decision making. In both aviation and medicine, teamwork is required, and team error can be defined as action or inaction leading to deviations from team or organizational intentions.

Communication Breakdowns: Three types of team communication breakdowns are at the root of most errors that impact patient safety:

- Different interactive styles: Individuals from different backgrounds or health care disciplines are likely to have different communication styles. Failure to accommodate for multiple styles among members of the same health care team can lead to misunderstandings.
  - Example: Failure to inform team of patient’s problem
    - Consider using TeamSTEPPS - Scenario 2, 6 or 69 as an exercise
    -or-
    - Consider having students share experiences
Role conflict or confusion: When any member of a health care team is uncertain about the specific role he or she is expected to fill or does not fill it (and therefore confuses others on the team), or is confused about the role and responsibilities of other team members, communication is likely to suffer.

Example: Role conflict between surgeon and anesthetist
- Consider using this scenario as an exercise: patient deteriorates while surgeon and anesthetist are in conflict over whether to terminate surgery after pneumothorax
- Consider using TeamSTEPPS – Scenario 1 as an exercise
- Consider having students share experiences

Chain of command unclear: Uncertainty or anxiety that hinders conveyance of important patient information from any team member to another puts the patient at risk.

Example: Establish leadership for operating room team
- Consider using TeamSTEPPS – Scenario 74 or 75 as an exercise
- Consider having students share experiences

(Note: Make sure there is time for interaction in each area. For example, ask participants for other examples as you go through each section—could ask them for examples where things started to go wrong and they were caught and fixed (and focus on how), and ask them for examples of things that were not caught.)

Case study: synopsis (12:40-1:00 or 6:10-6:30)

An eight-year-old boy was admitted for elective surgery on the eardrum. He was anaesthetized and an endotracheal tube inserted, along with internal stethoscope and temperature probe. The anesthetist did not listen to the chest after inserting the tube. The temperature probe connector was not compatible with the monitor (the hospital had changed brands the previous day). The anesthetist asked for another but did not connect it; he also did not connect the stethoscope.

Surgery began at 08:20 and carbon dioxide concentrations began to rise after about 30 minutes. The anesthetist stopped entering CO2 and pulse on the patient’s charge. Nurses observed the anesthetist nodding in his chair, head bobbing; they did not speak to him because they “were afraid of a confrontation.”
At 10:15 the surgeon heard a gurgling sound and realized that the airway tube was disconnected. The problem was called out to the anesthetist, who reconnected the tube. The anesthetist did not check breathing sounds with the stethoscope.

At 10:30 the patient was breathing so rapidly that surgeon could not operate; he notified the anesthetist that the rate was 60/min. The anesthetist did nothing after being alerted.

At 10:45 the monitor showed irregular heartbeats, just before 11:00 the anesthetist noted extreme heartbeat irregularity and asked the surgeon to stop operating. The patient was given a dose of lignocaine, but his condition worsened.

At 11:02 the patient’s heart stopped beating. The anesthetist called for code, summoning the emergency team. The endotracheal tube was removed and found to be 50% obstructed by a mucous plug. A new tube was inserted and the patient was ventilated. The emergency team anesthetist noticed that the airway heater had caused the breathing circuit’s plastic tubing to melt and turned the heater off. The patient’s temperature was 108° F. The patient died despite the efforts of the code team.

Discuss: What went wrong? How could teamwork and communication been improved??

Discuss interprofessional teamwork and/or communication experiences at UCSF:
(1:00-1:25 or 6:30-6:55)

- Share culture of medicine, nursing, dentistry, pharmacy, and physical therapy and how that impacts interprofessional communication.

(Note: could ask participants to identify key aspects of each culture on one flip chart apiece around the wall, and look for compatibilities and conflicts.)

Self-Reflection & Module I Evaluation: (1:25-1:30 or 6:55-7:00)
- Lessons learned by taking the seminar
- What went well
- Recommendations for improvement
- Other commend and/or ideas for future seminars
MODULE 2

Differences in communication style between health professionals: (12:00-12:30 or 5:30-6:00)

- Studies demonstrating difference in communication styles between nurses, doctors, and other clinicians
  - Basic differences:
    - Nurses are trained to be narrative and descriptive
    - Doctors are trained to be problem solvers “just give me the headlines”

- Further complicating factors in working relationships:
  - Physical setting: background noise, lack of privacy, interruptions
  - Social setting: organizational hierarchy and status issues (40% of nurses are hesitant to speak up when they see a physician making a mistake)
  - National culture / language: differences between people of varying racial and ethnic backgrounds (i.e. Asian culture: overt assertion is considered rude & disrespectful)
  - Communication medium: limitations of communication via telephone, email, paper, or computerized records versus face-to-face
  - Prior relationship / interaction: (if someone was previously rude, the nurse may hesitate to engage that individual (conflict avoidance))
  - Gender

- Share experiences that impacts interprofessional communication.

Tools to enhance teamwork and communication: (12:30-12:55 or 6:00-6:25)

- Advocacy and Assertion
  - Advocate for the patient when team members’ viewpoints don’t coincide with that of the decision maker.
    - Consider using TeamSTEPPS - Scenario 20 as an exercise
  - Assert a corrective action in a firm and respectful manner by making an opening statement, clearly stating the concern, offering a solution, and obtaining an agreement.
    - When an initial assertion is ignored: It is your responsibility to assertively voice concern at least 2 times to ensure it has been heard using a tool such as:
      - CUS(H)
I’m concerned
I’m uncomfortable
This is a safety issue
I hear you (responder)

SBAR: A technique for communicating critical information that required immediate attention and action concerning a patient’s condition:

<table>
<thead>
<tr>
<th>S</th>
<th>Situation</th>
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<tbody>
<tr>
<td></td>
<td>Identify the patient</td>
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<tr>
<td></td>
<td>State the problem resolution center UCSF - Mediation</td>
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<tr>
<td></td>
<td>Get the person’s attention</td>
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<td></td>
<td>Convey urgency (5-10 seconds)</td>
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<tr>
<td>B</td>
<td>Background</td>
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<td></td>
<td>Give background data pertinent to the reason for calling</td>
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<tr>
<td>A</td>
<td>Assessment</td>
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<td></td>
<td>Tell them what you think is going on and why</td>
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<tr>
<td>R</td>
<td>Recommendation</td>
</tr>
<tr>
<td></td>
<td>What you want them to do</td>
</tr>
</tbody>
</table>

- Consider using TeamSTEPPS - Scenario 3 or 31

Tools to further enhance teamwork and communication and prevent errors:
(12:55-1:20 or 6:25-6:50)

- Call-Out: A strategy used to communicate important or critical information by informing all team members simultaneously during emergency situations; it helps team member anticipate next steps.
  - Example during an incoming trauma:
    - Leader: “Airway status?”
    - Resident: “Airway clear”
    - Leader: “Breath sounds?”
    - Resident: “Breath sounds decreased on right”
    - Leader: “Blood pressure?”
    - Nurse: “BP is 96/62”

- Consider using TeamSTEPPS - Scenario 4, 5, or 36

- Check-Back: Process of employing closed-loop communication to ensure that the receiver as intended understands information conveyed by the sender.
  - The steps include the following:
    1. Sender initiates a message,
    2. Receiver accepts message & provides feedback communication
    3. Sender double-checks to ensure that the message was received.
  - Example:
    - Doctor: “Give 25mg Benadryl IV push”
    - Nurse: “25mg Benadryl IV push”
Doctor: “That’s correct”

- Consider using TeamSTEPPS - Scenario 24 or 37

- Handoff: the transfer of information (along with authority and responsibility) during transitions in care across the continuum: to include an opportunity to ask questions, clarify, and confirm. Examples of transitions in care include shift changes, physicians transferring complete responsibility, and patient transfers.

- Consider using TeamSTEPPS - Scenario 6, 7, or 45

- “I PASS the BATON”: a strategy designed to enhance information exchange during transitions in care.

| I  | Introduction | Introduce yourself and your role/job (include patient) |
| P  | Patient      | Name, Identifiers, age, sex, location                  |
| A  | Assessment   | Present chief complaint, vital signs, symptoms, and diagnosis |
| S  | Situation    | Current status/ circumstances, including code status, level of (un) certainty, recent changes, and response to treatment |
| S  | Safety Concern | Critical lab values/ reports, socio-economic factors, allergies, and alerts (fall, isolation, etc.) |

The

B | Background | Co-morbidities, previous episodes, current medications, and family history |
A | Actions    | What actions were taken or are required? Provide brief rationale |
T | Timing     | Level of urgency and explicit timing and prioritization of actions |
O | Ownership  | Who is responsible (person/team) including patient/family? |
N | Next       | What will happen next? Anticipated changes? What is the plan? Are there contingency plans? |

(Note: Consider giving each person a scenario, and have them put it in this format and tell it out loud or to another person, and/or add two short columns to the box, one that says I usually remember to and I don’t usually remember to.. to highlight what they are doing will already and what they need to improve on… then have them state what they will do to improve on one of them.)
Self-Reflection & Module II Evaluation: (1:20-1:30 or 6:50-7:00)
  o Lessons learned by taking the seminar
  o What went well
  o Recommendations for improvement
  o Other commends and/or ideas for future seminars