INTERCOLLEGIATE PRIMARY CARE EDUCATION AND RESOURCE CENTER

AHC InterdisciplinaryEducation Proposal

Submitted by the Intercollegiate Primary Care Education Council

March 15, 1999

INTERDISCIPLINARY EDUCATION PROPOSAL

Academic Health Center Intercollegiate Primary Care Education

Intercollegiate Primary Care Education and Resource Center

Introduction and purpose of proposal

Over the past 12 months, a large group of faculty from the AHC colleges/schools of medicine, nursing, pharmacy, dentistry, and public health engaged in deliberate planning efforts to identify and plan intercollegiate primary care education activities and curricular planning. The benefits were perceived to be as follows:

- Shared resources and faculty expertise
- High quality, efficient and cost-effective patient care
- Students learn to work as effective members of a health care team
- Improved curriculum materials/offerings and integration of content through interdisciplinary primary care education.

The result of these efforts is a proposal to implement an AHC Intercollegiate Primary Care Education and Resource Center (hereafter referred to as the Center) which will initially enable interdisciplinary teaching and learning in the following curricular areas:

- Health assessment/physical examination/interpersonal communication
- Interdisciplinary team care for individuals, families, and communities
    - Focus on specific health issues (e.g. tobacco use and smoking cessation; hypertension; diabetes)
    - Development, implementation and sustainment of interdisciplinary clinical education sites and experiences
- Ethics
- Cultural concerns and issues for individuals, families and communities.

The Center is conceptualized as a state-of-the-art physical space which would have technology, equipment, and staff resources to support interdisciplinary student learning. The innovative Center would be unique in that it would coordinate and facilitate opportunities for students from the various AHC education programs to learn common skills and competencies together. While Center staff serve a coordination and facilitation role, faculty from the AHC colleges/schools would provide the intercollegiate curricular planning, implementation, and

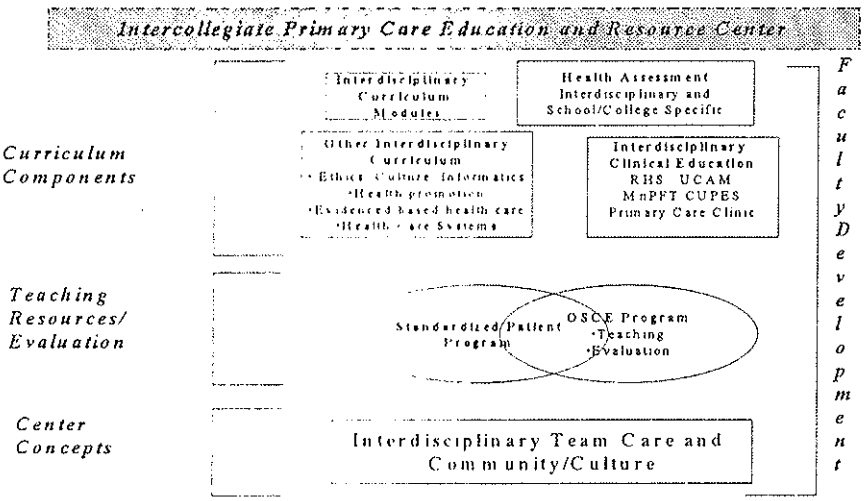
evaluation. A standardized patient program and an objective structured clinical exam (OSCE) program would be integral resources in the Center for interdisciplinary curriculum implementation and evaluation.

The Center would promote interdisciplinary clinical education experiences for students by: 1) maintaining an on-line database of clinical education sites; 2) coordinate curricular planning to foster the use of interdisciplinary clinical education sites; 3) and develop interdisciplinary clinical education sites and experiences.

The Center would also be used by colleges/schools for their individual curricular needs (**intra**disciplinary). With both intra and interdisciplinary use of the Center, the Center would be highly utilized and require staff to coordinate scheduling of the Center.

Faculty development needs were identified as integral to the success of implementing interdisciplinary primary care education efforts. Faculty development efforts would be coordinated through the Center.

The following illustration outlines the curriculum and teaching resource/evaluation components of the Center.



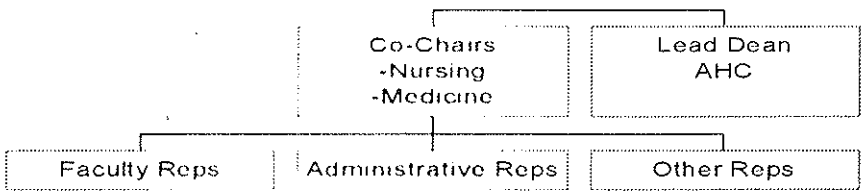
Background of planning phase of proposal

Following approval of funding from the AHC Senior Vice President and Deans Council, an AHC Intercollegiate Primary Care and Education Council (here after referred to as the Council) was convened to respond to the following directive:

> ".....undertake the deliberate design of the content, structure, delivery, integration with existing curricula, incentives, and administrative models that will be needed to create an effective intercollegiate program in primary care education. These efforts need to be connected to and integrated with other efforts already underway in several schools. A broader group of faculty, administration, staff, and students needs to be brought into the planning process to build on the foundation of your work."

Membership on the Council included a faculty and an administrative representative from the School of Nursing, School of Medicine-Duluth, Medical School-Twin Cities, College of Pharmacy, School of Public Health, School of Dentistry, Center for Bioethics and the Center for Spirituality and Healing. The council was co-chaired by faculty representatives from the School of Nursing and Medical School. Dr. Ilene Harris from the Medical School also served as an important resource to the Council.

AHC INTERCOLLEGIATE PRIMARY CARE EDUCATION COUNCIL



The Council addressed primary care curriculum overlaps, gaps, strengths and weaknesses between and among collegiate programs This work resulted in the formation of six workgroups each chaired by a separate member of the Council:

- Community/culture
- Ethics
- Health Care Delivery Systems

- Primary Care Education and Resource Center (Health assessment, physical examination, interdisciplinary team care,
- Interdisciplinary OSCE program
- Interdisciplinary clinical education experience at the University of Minnesota Physicians Primary Care Clinic

An Interdisciplinary Curriculum Coordinator (ICC) was employed to assist the Council and AHC faculty with intercollegiate curricular planning and implementation.

The work groups engaged in intensive planning to identify interdisciplinary curriculum programming related to the focus of their workgroup. Five of the work groups (all except Health Care Delivery Systems) submitted a work plan outlining how they would propose to implement interdisciplinary curriculum efforts. These workplans serve as the basis of this proposal.

Challenges to Council and Workgroups

Challenges before the Council and corresponding workgroups included:

- Different academic calendar schedules in the AHC education programs combined with course sequencing differences;
- Undergraduate and graduate focus of common content;
- Faculty time and availability for intercollegiate curriculum planning;
- Limited incentives and rewards for faculty to participate in intercollegiate curriculum planning;
- Credit allocation and tuition revenue for interdisciplinary courses;
- Faculty development needs regarding interdisciplinary education
- Very few clinical education sites in which there were effective functioning models of interdisciplinary team care

In spite of these challenges, the 40+ faculty moved forward to propose intercollegiate primary care education initiatives that would be coordinated and facilitated through the AHC Primary Care Education and Resource Center.

Intercollegiate curricular programming. Education of future health care providers can no longer occur separately in health profession education programs. While traditional **intra**disciplinary education is critical to knowledge and skill development within a particular health profession, opportunities for **inter**disciplinary education are also necessary. Interdisciplinary education contributes to a requisite skill base designed to prepare a health care provider to function competently and efficiently as an interdisciplinary health team member in a continually changing health care system. Students who are enculturated to work as intra and interdisciplinary team members with a common goal of improved health for individuals and populations are more likely to integrate this philosophy into future practice.

Interdisciplinary curriculum modules. Many health related issues lend themselves to an interdisciplinary approach. For this proposal, the health concerns/issues of smoking cessation/tobacco use, substance abuse, hypertension, and diabetes mellitus were identified as four complex, pervasive health problems well suited to team-based problem solving and interdisciplinary interventions. Further, each of the AHC education programs address these health issues in their respective curriculum.

Through the Center, with support from Center staff, faculty from the AHC education programs will develop four initial interdisciplinary curriculum modules for health issues previously listed. In addition to learning the epidemiological, clinical assessment and management issues, students will be able to:

- Define interdisciplinary collaborative care
- Describe the education and roles of different health care professionals
- Apply interdisciplinary team concepts and team care to addressing these health care issues for patients, families, and populations.

These curriculum modules will incorporate cultural aspects, evidenced-based health care, and ethical issues.

An outline for a curriculum module for smoking cessation is included in Appendix A. The content would be prepared and presented by faculty from nursing, medicine, public health,

pharmacy and dentistry using large group lecture, panel presentations, CD-ROM and a web-page. Further interdisciplinary learning would occur in the Center where students would be organized into small interdisciplinary groups, interview a standardized patient and then develop a plan of care with the patient regarding smoking cessation.

The development of these four curriculum modules will occur during Summer 1999 with implementation of the modules to occur in academic year 1999-2000. Some initial lead faculty have been identified from each of the AHC education programs who have indicated an interest in developing modules. Faculty with content expertise associated with the modules may be recruited as necessary. The preliminary lead faculty, who have indicated an interest from each of the schools/colleges are as follows:

Medicine: Sharon Allen, MD

Public Health: Deborah Hennrikus, PhD, MPH

Nursing: TBA

Pharmacy: Pat Gleason, Pharm. D.

Dentistry: TBA

Lead and content expert faculty will be provided with release time during the summer to attend a faculty development program on interdisciplinary education, develop the modules and determine the logistics of implementing these modules (e.g. number and type of students, scheduling of modules, facilitation/teaching of modules, standardized patient requirements, OSCE requirements). Funding for the release time for the work to be accomplished during the summer is requested as part of the budget for this proposal. It will require more effort than usual to implement these modules in the fall and spring semesters because faculty have not had extensive experience implementing interdisciplinary curriculum. Thus, each of the colleges/schools will be asked to consider this when determining assignments and allocating work effort for the 1999-2000 academic year.

Interdisciplinary health assessment. A second interdisciplinary curricular focus supported through the Center relates to health assessment competencies. Health assessment is a broad term which encompasses interpersonal and intraprofessional communication competencies, information skills, cultural sensitivity and competency, interviewing and history

taking ability, vital sign assessment and basic physical examination techniques. All AHC health professional education programs share a common need to prepare students as effective, sensitive communicators, however the extent of skill required in the area of physical examination varies dependent on the health profession with medicine and nursing needing a full range of physical examination skills while pharmacy, dentistry, and public health students require a more focused approach to physical examination. The health assessment component of the curriculum for all AHC colleges/schools will require the use of the Center and its resources (e.g. standardized patients, equipment, exam rooms, videotaping). The most extensive use of the Center for **intra**disciplinary purposes will be related to health assessment.

Nursing, pharmacy, medicine, and dentistry currently teach health assessment components; some at different times and some at the same time during an academic year. Interdisciplinary learning experiences between students do not exist and current teaching of health assessment in all the schools is challenged by limited space and equipment. At this time, dedicated space for health assessment within the AHC includes a physical examination skills lab consisting of 8 equipped exam rooms in the School of Nursing. Table 1 provides an overview of the resources currently used in teaching health assessment to students in the colleges/schools of nursing, medicine, dentistry, and pharmacy.

Table 1: Annual Resource Utilization for Health Assessment Curriculum

School	# of Students	When offered/credits	# Faculty	Space
Nursing	Undergrad: 100	Fall/3 credits	5-6 faculty	SON Skills lab
	Grad: 60-100	Fall/3 credits	6-8 faculty	SON Skills lab
Dentistry	2nd yr.: 85	Fall/3 credits	2 faculty	Any avail. Clin. space
Pharmacy	3rd yr.: 100	Spr/ credits	3 faculty	SON Skills lab
Medicine	Clin Med I: 165	16 tutorials Oct-June	34 faculty	Variety of community
	Clin Med II: 165	10 tutorials Sept-Nov	48 faculty	settings
	Clin Med III: 165	Focused exams	---	---
	Clin Med IV: 165	Focused exams	---	---

It is common practice for students to learn and develop competency with the many components of health assessment via 'practice' on one another, or as in the case of medicine, on volunteer patients from hospital and community settings. Faculty who teach the health assessment components of the curriculum believe that exposure to learning activities that simulate a'life-like' patient experience is needed in order for students to develop competencies in health assessment. Such simulations are applicable across the entire range of health assessment competencies. For example, eliciting a culturally sensitive, respectful history is as important as developing a proper cardiac examination technique. An ability to videotape students while they are doing components of the health assessment with standardized patients further enhances the learning experiences so that students can learn through self assessment and faculty can provide timely, constructive feedback. At the same time, the Center should also be available to students wishing to practice communication, interviewing, and examination skills using fellow students.

Health assessment in the AHC programs has had only an **intra**disciplinary perspective. While the Center will continue to support the school/colleges' **intra**disciplinary health assessment curricular needs, faculty who are the primary teachers of health assessment in their colleges/schools (need to be identified by their respective schools/colleges), will be supported during the summer to develop a plan to determine how the Center and its resources could be used to meet the health assessment curricular needs for the AHC programs emphasizing opportunities for how students from different health professions could learn these competencies together (**inter**disciplinary). They will also need to address the logistical issues for implementing interdisciplinary health assessment teaching. By the fall 1999 semester, these faculty will pilot this plan with a small group of students from at least two health disciplines. Their attendance and participation in a faculty development program for interdisciplinary education in the summer will be supported through funding requested in this proposal. Similar to the faculty working on the interdisiciplinary health modules, it will **initially** require more effort than usual to implement health assessment learning experiencing using an interdisciplinary education approach simply because faculty have not had extensive experience implementing interdisciplinary curriculum. Thus, each of the colleges/schools will be asked to consider this when determining assignments and allocating work effort for the 1999-2000 academic year.

Standardized Patient Program. To support both **intra** and **inter**disciplinary curricular efforts through the Center, a Standardized Patient (SP) Program would be developed and implemented. SP programs have been used primarily in medical schools to address two major concerns in medical education: 1) the availability of real patients for students to learn clinical skills, and 2) the difficulty of obtaining reliable and valid assessments of students when they are evaluated with different patients, demonstrating varying levels of complexity.

Standardized patients (SPs), sometimes referred to as simulated patients, may be real patients, actors, or other individuals who are trained to consistently portray the signs and symptoms of patient problems, in situations where they are not actually receiving their health care, and even though they may not actually have these signs and symptoms. SPs are also trained to evaluate and provide feedback to students using standardized checklists.

The development of a SP program involves recruiting and training persons who will serve as SPs for both teaching and evaluating students. The physical, clinical, cultural, psychosocial, economic, and spiritual characteristics of SPs, as well as related ethical inssues in health care, are determined from the curricular needs identified by faculty. For any given curriculum or evaluation need, use of a SP involves: 1) scripting a case scenario which serves as a gold standard; 2) recruiting an individual with attributes to play the role (at times there may be more than one individual if the case scenario involves a family); 3) training the SP; 4) checking the accuracy of the SPs portrayal and 5) monitoring the SPs ability to give feedback and evaluation to students.

To accommodate the curriculum needs of AHC programs, 100 SPs will need to be recruited, trained, and scheduled throughout an academic year. These SPs are compensated at a rate of $10.00/hour. A SP Coordinator will be needed to administer the SP program. An on-line SP database will be developed and made available to faculty. Expertise on SP programs is available at the AHC. Michelle Gensinger serves as a consultant to the Medical school along with David Powers for the development of a SP program. We anticipate there will be an annual cost of up to $75,000 to pay persons who are recruited as standardized patients. The budget in

this proposal is less than that because the standardized patient program will not be fully implemented until the end of the 1999-2000 academic year.

Objective Structured Clinical Examinations (OSCEs). The OSCE is a state-of-the-art approach for assessing clinical competencies—either for teaching or evaluation purposes. Typically, students rotate through stations in which there are SPs. Evaluation can occur by having an examiner in the room who uses a checklist to assess performance or to videotape the student's performance and later use the videotape for self evaluation, peer evaluation, and/or instructor evaluation. The AHC Medical School has been using OSCEs for eleven years with students completing their Clinical Medicine III course. Both Ilene Harris and Wes Miller from the Medical School have coordinated the OSCEs in the Medical School and have outstanding expertise in this area.

While the Medical School will likely continue using OSCEs for Clin Med III students, the use of OSCEs for other schools/colleges **intra**disciplinary curricular needs will be expanded. In addition, the Center staff will facilitate the development of **inter**disciplinary OSCEs which will be informed by curriculum needs from the schools/colleges. One likely use of OSCEs will be with the four curriculum modules described earlier in this proposal. Another use of OSCEs will be as an evaluative mechanism for interdisciplinary clinical education experiences at the University of Minnesota Physician's Primary Care Clinic and Bethesda Clinic.

The Minnesota Rural Health School (MRHS) was provided resources by the Intercollegiate Primary Care Education Council to develop, test, and evaluate an interdisciplinary OSCE in several of the community-based rural clinical sites. While the cases will have a clinical focus, interdisciplinary team competencies will be emphasized, including team skills and dynamics and developing an interdisciplinary health care plan. The findings from the MRHS interdisciplinary OSCEs will be used to develop interdisciplinary OSCEs for the Center and to meet curriculum needs throughout the AHC schools/colleges. There is no documented valid measure to evaluate team work skills in health care delivery. The development and validation of such an evaluation/feedback tool will have broad application throughout the AHC, at other AHCs and also within the health care system.

Interdisciplinary clinical education sites. All students in the AHC require clinical practicums in which they have the opportunity to provide health care services, under the supervision of a faculty member or a preceptor/mentor, to patients in community-based and institutional settings. Each of the AHC schools/colleges coordinates their clinical placements and identifies appropriate clinical settings for their students. As of this time, other than the interdisciplinary clinical efforts described later in this proposal, none of the AHC schools/ colleges works together to identify clinical sites for interdisciplinary student learning. **The Medical School's Primary Care Education Committee/Interdisciplinary Teamwork Taskforce and the Intercollegiate Primary Care Education Council recommend that each AHC student prepared to function as a primary care provider should have at least one interdisciplinary clinical experience.** This recommendation reaffirms the recommendation made by the AHC Task Force on Interdisciplinary Health Team Development.

There are several interdisciplinary primary care clinical education efforts underway at the AHC. These include the Minnesota Rural Health School (MRHS), the Robert Wood Johnson Foundation funded project *Minnesota Partnerships for Training (MnPFT)*, and the Kellogg Foundation funded project *Community-University Partnerships in Education and Service (CUPES)*. These three interdisciplinary clinical education focused projects also have a strong emphasis on culture and community (e.g. community-based settings; ethnic culture diversity; rural culture). Interdisciplinary geriatric clinical initiatives are also present at the AHC, but to this point in time, have not been coordinated with the interdisciplinary primary care education efforts in the AHC.

The Council determined that the University of Minnesota Physicians Primary Care Clinic, recently opened, could be an ideal situation for interdisciplinary clinical experiences. At this time, the clinic has physicians in the specialties of family practice, general internal medicine, and pediatrics, nurse practitioners in the specialties of pediatrics and family, and one pharmacist. Medical students, residents and nurse practitioner students are currently working in the clinic with preceptors. In June 1999, fourth year pharmacy students and residents will begin their clinical education in the clinic.

The College of Pharmacy recently introduced the role of the pharmacist as a member of the primary health care team in the clinic. Further, a model for interdisciplinary primary care practice is being developed for implementation in the clinic with an accompanying model for interdisciplinary primary care education practice. These models and a plan to implement them is included in a detailed proposal submitted by the workgroup for the primary care clinic.

Under the leadership of the College of Pharmacy and in partnership with the Medical School, the School of Nursing, School of Dentistry and the clinical staff at the clinic, the models for interdisciplinary primary care practice and education will be implemented at two clinics. Interdisciplinary clinical mentors who will be working at the University of Minnesota Physicians Primary Care Clinic and have appointments in their schools/colleges have been identified:

Medicine: Kathleen Watson, M.D. and Michael Long, M.D.

Pharmacy : Patrick Gleason, Pharm.D.

Nursing: Mary Mesher-Benbenek, MSN, PNP, FNP

Dentistry: Kevin Nakagaki, DDS

In addition, the College of Pharmacy and Medical school propose to use and evaluate the interdisciplinary primary care practice and education model at Bethesda Clinic with pharmacy and medical students and residents. The clinical mentors for these students include Ila Metra Harris, Pharm.D. and Brenda Wilcox Abraham, MD, who also hold faculty appointments at the Academic Health Center.

The mentors at both clinics will serve as the major facilitators of the interdisciplinary primary care practice and education model. They will:

1. Participate in a faculty development program for interdisciplinary education (outlined later in this proposal);
2. Introduce students to the interdisciplinary primary care practice and education model;
3. Facilitate student learning experiences which enables to students to learn about interdisciplinary team care and function as a member of an interdisciplinary health care team (e.g. case studies; working with preceptors from other

disciplines; pairing students from different disciplines when they are in the clinic seeing patients with their preceptors);

4. Provide opportunities for students to develop and document interdisciplinary patient care plans that integrates and addresses the patient's health care needs;
5. Create and implement an OSCE with students who have participated in the clinical education experiences at the two clinics. The OSCE will be adapted from the Minnesota Rural Health School Interdisciplinary OSCE and used to evaluate students' competencies in functioning as a member of an interdisciplinary health care team.

Instruments to evaluate students' changes in perceptions, knowledge and attitudes regarding their discipline, other disciplines and interdisciplinary team care will be administered to students before and after their interdisciplinary clinical experience in the clinic. Other evaluations will focus on the perceptions of the clinic staff regarding the use of an interdisciplinary primary care practice and education model with a specific focus on efficiency, productivity, outcomes, and strategies for improvement. Faculty from the College of Pharmacy will provide the oversight for the administration of the instruments, data collection and analysis.

The expected numbers of students/residents participating in both clinics from July 1999-June 2000 are as follows:

	Medical Students	Medical Residents	Pharmacy Students	Pharmacy Residents	Advanced Practice Nursing Students
U of MN Physicians Primary Care Clinic	12	5	10	2-4	TBD
Bethesda Clinic	12	8	10	2-4	TBD
	24	13	20	4-8	TBD

The MRHS, *MnPFT*, and *CUPES* provide three models for interdisciplinary primary care/community-based clinical education with an additional emphasis on cultural aspects of the community. The interdisciplinary primary care practice and education model implemented at the University of Minnesota Physicians Primary Care Clinic and Bethesda clinic is another model for students to learn and experience interdisciplinary team care in a more traditional health care

setting. However, these clinical sites cannot begin to accommodate the number of students in the AHC. Through the Center, and in coordination with these interdisciplinary education initiatives, additional community-based primary care interdisciplinary clinical sites will be identified and developed. By the end of academic year 1999-2000, three additional sites will be developed and available for use. Development of these clinical sites and Center will facilitate an integrated curriculum in which skills and attitudes are shaped through early introduction to interdisciplinary care through the Center followed by an interdisciplinary clinical experience and then validation of the experience through evaluation (OSCE). Intra and interdisciplinary student learning in the Center will be a continuing focal point for interdisciplinary education through the various college curricula.

On-line clinical education database. During the planning year, the IPCEC allocated funds to the School of Nursing to develop a database for their clinical education sites. This database will be used as a model to develop a clinical site database for all AHC education programs and provide data to identify potential sites for interdisciplinary clinical site development. The database will be put on the world wide web so that faculty can access it. The database will likely include the following information about a clinical education site: contact information, location/directions, preceptors, dates of use. Center staff will work with each school/college to develop this database and address the logistics of keeping it up-to-date and relevant for use.

Other interdisciplinary curriculum efforts. In coordination with the Center for Bioethics, the Center would serve to coordinate and schedule interdisciplinary learning opportunities for students related to health care **ethics**. AHC faculty with expertise in health care ethics would be involved in the following:

- Provide consultation to faculty developing the four interdisciplinary curriculum modules to ensure that ethical issues are adequately addressed;
- Develop case scenarios reflecting different ethical situations for the SP program and the OSCE program (e.g. interdisciplinary ethics committee OSCE);
- Create and coordinate regularly scheduled ethics grand rounds, ethics seminars and ethics conferences in which all AHC students would be required to attend as specified by their respective education programs.

- Create opportunities for distance learning students and medical students at UM-Duluth to participate in interdisciplinary ethic related learning activities.

Faculty who have been teaching ethics in the AHC programs propose to develop an AHC-wide assessment effort related to ethics. In addition to obtaining a base-line assessment of students regarding their knowledge and competency regarding ethics, the SP program and the OSCE program would serve as the teaching and evaluation resources to teach and evaluate ethics related competencies.

A faculty representative from each of the AHC education programs who teach ethics would be provided salary support to attend the faculty development program on interdisciplinary educatin and for an intensive week in the summer to initiate interdisciplinary learning experiences related to ethics for students for academic year 1999-2000.

Faculty Development. Critical to the success of the proposed interdisciplinary curriculum efforts (curriculum modules, health assessment, clinical site development and use, ethics) is faculty development related to interdisciplinary health profession education. Teaching students to work effectively in interdisciplinary teams has not been a focus or emphasis at the Academic Health Center. Thus, few faculty have the experience or expertise in developing and implementing interdisciplinary curriculum (both classroom and clinical). Initially, we propose that the faculty involved in the development of the interdisciplinary curriculum modules, the interdisciplinary health assessment planning, interdisciplinary ethics curriculum planning, and interdisciplinary clinical education experiences participate in an extensive faculty development program which assists them in developing their curriculum and clinical practica.

Although the components and logistics of this faculty development program have not been fully developed, an initial intensive and comprehensive program would occur in summer 1999. Using a retreat format and an active learning approach, faculty would learn and experience the following interdisciplinary team concepts:

- Knowledge, understanding, appreciation, and respect about health care disciplines other than their own,

- Team building and team formation;
- Overcoming barriers to collaborative team work in practice, learning, and teaching;
- Management of conflict and negotiation for a team;
- Strategies for facilitating interdisciplinary team teaching and learning in a classroom and clinical setting.

The retreat will facilitate all the interdisciplinary curriculum planning efforts which have been outlined in this proposal and targeted to occur during the summer. The retreat would be structured such that the facultys' 'summer interdisciplinary education assignments' would be the means for applying what they will be learning through this intensive faculty development program. AHC faculty/staff as well as national leaders in interdisciplinary health education would be involved in planning and facilitating the retreat. The faculty who participate in the retreat would serve as mentors to other faculty as interdisciplinary teaching and learning in the AHC begins to grow and become the preferred means for teaching health professional students.

Ongoing faculty development activities (e.g. seminars; guest speakers; site visits; newsletters; on-line discussion groups; web page; faculty resource manual) would be coordinated by the director and staff of the Center through the direction of the Center's governing council. Potentially, there could be a faculty development committee which is part of the Center's governing council.

Physical Space and equipment/resources. Faculty from the AHC visited three Centers in Medical Schools which were designed to provide medical students opportunities to develop competencies primarily in communication/interviewing, health assessment and physical examination as well clinical decision making and medical management. While the observations of these Centers identified some critical elements necessary in terms of space and equipment/resources, the interdisciplinary nature of our proposed Center dictates some functions of space not included at other Centers. To implement the activities proposed and with the volume of students in the AHC, the Center will need to operate at least 12 hours a day and perhaps on weekends to accommodate the curriculum needs of the schools/colleges and to accommodate opportunities for students to practice skills.

The work group for the development of the Center did not spend time on trying to identify a space/location in the AHC for the Center. Rather, they focused on identifying the space needs:

- 12 examination rooms
- Monitoring room (minimal size 10' x 12' or larger to contain up to 18 monitors). Monitors would be linked to each exam room.
- 3 conference rooms to facilitate interdisciplinary team conferences/seminars initially for the curriculum modules and ethics sessions and for SP training
- 1 large classroom (accommodate up to 70 students) equipped with computer/monitors
- 2 small consultation rooms
- 1 of the 12 rooms which can be modified to simulate a patient's home
- Office space for Center staff (4 offices)
- Reception area
- Computer work area to accommodate 4 computers with Internet access
- Storage areas for equipment and education materials
- Area for use of simulation equipment

Extensive assistance is needed from staff in the AHC to identify and secure the space that can be set up and ready for use by Spring, 2000. Staff from the AHC will also be needed to assist in setting up the space and equipment.

Equipment needs for the Center include the following:

- Exam rooms to be equipped with exam table, 3 chairs, desk, sink, exam equipment (wall otoscope, opthalmoscope, blood pressure equipment, penlight, tuning fork, reflex hammer)
- Ceiling mounted camera(s) in each examination room, consultation room, patient's home room, and consultation rooms
- Monitoring room should have 18 monitors and videotaping equipment and 2-way audio communication with all rooms
- 2 VCRs and monitors for students to view their tapes in consultation rooms
- Appropriate furniture for a patient's home including artifacts from various cultural/ethnic groups
- Tables/chairs for conference rooms
- White board for conference rooms

- 2 overhead projectors
- 1 slide projector
- Three monitors connected to a computer in large classroom or a computer projector
- 4 computers and one printer for computer area
- 4 computers/printers for Center staff
- Simulation equipment (e.g. cardionics simulator, Harvey)
- Office furniture for Center staff
- Furniture for reception area

Center Staff. The administration of the Center and coordination/implementation of Center activities will be extensive. A key role for the success of the Center is a Director with expertise and background in curricular design, research, planning, and evaluation. Ideally, the Director will also have experience/expertise related to community and culture. The Director will have an oversight and administrative role as well as a role to facilitate interdisciplinary curricular work. The director will develop and manage the Center's budget, supervise Center staff, establish policies and procedures for the Center, and establish short and long-range operation goals for the Center. In addition, the Director will ensure that the AHC schools/colleges have active participation in the development of interdisciplinary curricular activities through the Center and that the Center is responsive to the curricular needs of the AHC schools/colleges.

As mentioned earlier in this proposal, a coordinator for the SP program is needed to recruit, train, and schedule SPs, but also to coordinate the development of the SP program such that it is responsive to the curricular needs of the AHC schools/colleges. Successful SP programs have hired a person with a background in theater for this role.

We anticipate that the Center will be in constant use. The large volumes of students who will participate and the specialized approach to teaching necessitates support for faculty. We are proposing that two persons, referred to as Center Learning Facilitators (CLFs), be hired for the Center to assist faculty with small group interdisciplinary learning activities. For example, as many as 300 students may participate in the interdisciplinary curriculum module related to smoking cessation. While faculty may be able to teach the didactic portion of the module to large student groups, they will not be able to manage the multiple small student groups that will be formed to participate in the OSCEs or related case study seminars. Rather, the CLFs would

facilitate the OSCEs and seminars. There will be other functions for the CLFs to assist faculty with the development and implementation of interdisciplinary and intradisciplinary learning sessions that will occur in the Center. The CLFs may be assigned to faculty interdisciplinary curriculum teams to ensure coordination and consistency. The CLFs may also provide coverage for the Center on weekends. The CLFs will require experience in health professional education and special skills in group facilitation.

Support staff will be needed for the Center. Specifically, an administrative assistant will be needed for such activities as maintaining databases, ordering supplies and equipment, and coordinating scheduling for the Center. A technician will be needed to set-up and maintain equipment for the Center as well as provide website development and support services.

Governance for the Center. The Center is a resource for all the AHC to address curricular needs in their respective programs. To that end, AHC faculty should have a significant role in the following:

- Establish goals for the Center
- Establish policies/procedures for the Center
- Address issues which impeded successful interdisciplinary education efforts (e.g. schedules, tuition, and credit allocation)
- Facilitate interdisciplinary curricular design, planning, implementation, and evaluation for primary care education
- Identify resource needs for the Center
- Establish a means of communication to faculty, staff, and students regarding activities of the Center
- Address accountability of the Center (e.g. to the Schools/Colleges; to the AHC Senior VP Office)
- Determine a role and a process for community advisement for interdisciplinary and intradisciplinary primary care education
- Determine a role and a process for student advisement for interdisciplinary and intradisciplinary primary care education

Initially we propose that the Intercollegiate Primary Care Education Council continue to function as the governance body for the Center. By-laws may be a useful tool to assist the Council in identifying the structure and function of the Council. The Council should immediately address membership and leadership issues as it enters into this next phase (implementation).

Timetable. Interdisciplinary education activities will be implemented in academic year 1999-2000, however, it may be on a small scale. We anticipate that it will require at least six months to identify and secure space for the Center and hire staff. Ideally, we would like to have an equipped Center ready by Spring semester, 2000. The following grid outlines the objectives for the development and implementation of the Center and corresponding activities, including a timetable.

Objectives and Activities for the Center	Date to be Accomplished
Objective 1: Recruit and hire Center staff	
• Recruit/hire a Center Director	June 1999
• Recruit/hire an administrative assistant	July 1999
• Recruit/hire a SP Coordinator	July 1999
• Recruit/hire Center Learning Facilitators	September 1999
• Recruit/hire technician	September 1999
Objective 2: Identify a location for the Center and set up and equip Center	
• Location with adequate space is identified	June 1999
• Center is equipped and functional	January 2000
Objective 3: Establish a governance structure for the Center	
• Council identified membership and leadership	May 1999
• Council approves by-laws	September 1999
• Accountability for Council is determined	September 1999

Objective 4: Develop and implement four interdisciplinary curriculum modules which focus on selected health issues enabling students to learn interdisciplinary team care for individuals, families and communities.	
• Convene a faculty work group for 4 curriculum modules to:	
1. Develop modules	Summer 1999
2. Address logistics of how (e.g. equipment needs, number of students, scheduling of students, facilitator roles) and when modules will be implemented in AY 1999-00.	Summer, 1999
3. Implement modules	Fall/Spring 99-00

Objective 5: Determine how health assessment competencies can be developed in students through the Center through both intradisciplinary and interdisciplinary learning activities.	
• Bring together faculty from AHC programs who are the primary teachers of health assessment in their programs	
1. Develop a plan for how the Center and its resources could be used to meet the health assessment curricular needs for the AHC programs emphasizing opportunities for how students from different health professions could learn these competencies together.	August 1999
2. Pilot test this plan with a small group of student from at least two health disciplines.	Fall semester 1999
3. Based on the results of the pilot test, determine how interdisciplinary health assessment could be implemented through the Center.	January 2000
Objective 6: Develop and implement a Standardized Patient Program to support intra and interdisciplinary primary care curricular efforts.	
• Develop a process to identify SPs required to support intra and interdisciplinary curricular needs including scripting of case scenarios.	October 1999
• Develop a system for recruiting, training, scheduling, and evaluating SPs	November 1999
• Use SPs in the Center to support intra and interdisciplinary curriculum needs	January 2000
• Establish an on-line database of SPs	January 2000
Objective 7: Develop and implement a process to use OSCEs to facilitate intra and interdisciplinary student learning experiences	
• Use the interdisciplinary OSCE from the Rural Health School as a model for developing interdisciplinary OSCEs to meet interdisciplinary primary care curricular needs.	September 1999

Objective 8: Develop additional interdisciplinary community-based clinical education sites and experiences.	
• Continue the development of the University of MN Physicians Primary Care Clinic and Bethesda Clinic as interdisciplinary clinical education sites.	June 1999
• Implement the two clinics as interdisciplinary clinical education sites.	June 2000
• Evaluate the interdisciplinary primary care practice and education model used in these to clinical sites, including the implementation of an OSCE.	June 2000
• Continue to support and expand the three current interdisciplinary clinical education sites/experiences (MnPFT, CUPES, MRHS)	Ongoing
• Initiate plans for an AHC community-based clinical site on-line database	October 1999
• Implement an on-line clinical site database for faculty and student use	February 1999
Objective 9: Develop and implement a faculty development program to facilitate interdisciplinary primary care education.	
• Convene a team of faculty to plan a faculty development program for interdisciplinary education	April 1999
• Propose a faculty development program for the summer	May 1999
• Implement the faculty development program	August 1999
• Continue to offer faculty development activities	ongoing

Budget

The budget proposed for the Center reflects funding needed to equip the Center (a one time initial expense) and funding to staff and operate the center (an ongoing expense). The budget request does not include the physical space for the Center, which may include leasing space and/or remodeling space. The budget and a brief budget justification are included in appendix B.

The Future and Continued Funding for the Center

The Center and its associated activities to support intra and interdisciplinary curricular efforts in the AHC will undoubtedly go through a developmental and growing process. By the third or fourth year, it should be a viable and valuable resource for all of the AHC education programs. As it responds to the curricular needs of the AHC education programs, its growth and development will be defined. Evaluation of the Center and curricular activities will be imperative and the Center's Governance Council will need to address this early on in the process.

To continue to staff and operate the Center beyond the first year, the AHC school/college budgets should support the use of the Center for each school/college's **intra**disciplinary curricular needs and contribute to supporting the use of the Center for **inter**disciplinary curricular use. The Center's Governance Council and Director should also explore external funding opportunities to support various aspects of the Center (e.g. interdisciplinary curriculum modules; interdisciplinary OSCEs; evaluation).

Appendix A

An Interdisciplinary Approach
Tobacco Use: Curriculum for Prevention and Cessation
Three Hour Workshop

I. Overview of Tobacco Use and Cessation — **Responsible School Faculty**

STRATEGY: Didactic Lecture - CD ROM and Web Page (45 minutes)

CONTENT:

- Epidemiology — ***Public Health***
  - Prevalence of tobacco use
    International
    US - age, gender, education, SES, race
    Other tobacco use - cigar, pipe, smokeless tobacco
  - Smoking initiation rates
  - Quitting rates
- Health effects (systemic and oral) of tobacco use and benefits of cessation — ***Medicine, Dentistry, Nursing***
  - Cardiovascular - coronary artery disease, lipo-protein profile, hypertension
  - Pulmonary disease - COPD, lung cancer, asthma
  - Other diseases associated with tobacco use
  - Effects of secondhand smoke
  - Oral effects - cancers, other oral mucosal conditions, periodontal diseases
- Benefits of cessation — ***Public Health, Medicine, Dentistry, Nursing***
  - Health benefits
  - Financial and social benefits
  - Reduction of environmental tobacco smoke

II. Model of Interdisciplinary Team Approach

Responsible
School Faculty

STRATEGY : Interdisciplinary Team Panel: Approach to a Tape of a Patient Trying to Quit Smoking. Cover the Content Below. (45 minutes)

CONTENT:

Psychology

- Nicotine addiction, stages of change and related behavior
  - Biology of nicotine addiction - reinforcing effects, tolerance, withdrawal
  - Behavioral aspects of addiction to nicotine
  - Implication for treatment of addiction to nicotine

- Clinical interventions for health care providers

Nursing, Medicine, Dentistry, Pharmacy

  - AHCPR guidelines - Ask, Advise, Identify, Assist, Arrange, pharmacological interventions
  - Tailored messages
  - Cessation resources
  - Effective behavioral interventions
  - Evaluation of interventions

- Pharmacology

Pharmacy

  - Review of relevant nicotine pharmacology; pharmacokinetics; effects on neurotransmitters, tolerance, withdrawal
  - Principles of nicotine replacement, e.g. integration with counseling
  - Specific nicotine replacement products

	Responsible School Faculty
– Antidepressants	
– Clinical overview - individualization of therapy	
• Role of health care providers in tobacco use prevention and cessation	*Nursing, Medicine, Dentistry, Public Health*
– Do health care providers intervene with their tobacco using patients? - survey results	
– Effectiveness of cessation interventions in medical and dental practices	
– Role of health care providers in tobacco policy and media advocacy	
• Role of health care administrators, insurers and purchasers	*HMO Administrators*
• Integration of tobacco use cessation into practice	
– Office protocols for tobacco use cessation	*Medicine, Nursing, Dentistry, Pharmacy*
– Strategies for implementation	

III. Hands-On Experience of an Interdisciplinary Team Approach

STRATEGY: Skills Lab In the Primary Care Resource Center (1 hour)

CONTENT: *Medicine, Nursing, Dentistry, Pharmacy Public Health*

- Skills lab with standardized patients
  - Students are divided into interdisciplinary teams of eight (two nursing, two medicine, two public health, two pharmacy) and interview a standardized patient for 20 minutes about smoking cessation.
  - Students as a team provide a plan together with the patient for 30 minutes and present to the entire group and faculty.

PATIENT CASE EXAMPLE

Deborah is 55 years old; she is widowed and lives in a small rural town in Central Valley. She has worked for 25 years on an assembly line at a local manufacturing plant. She drives to work in an old car.

Deborah was married at 15 and had three children before age 20 and did not graduate from high school. She started smoking at the age of 14. Her husband died five years ago of a heart attack and left her with a $70 monthly pension from his work on the railroad. She lives on her family's farm with her 85 year old mother. Her children are all now away from home. Her two eldest children live out of state and her youngest daughter lives in San Francisco.

Medical History

Her blood pressure is 150/90, her weight is 150 lbs, her height is 5'5".

She has smoked a pack per day for almost 30 years. She has a morning cough. Some of her lower teeth have been extracted at age 40, she rarely can get to the dentist. She works long hours on the family farm and is beginning to show signs of fatigue and difficulty keeping up with the work. She claims she does not drink alcohol.

What team members should be involved with this case?

What are Deborah's most important health issues and who should be involved in managing these issues?

Develop a management plan for this patient.

As a team, put the plan together with the patient included.

Be prepared to present your team plan to the entire group.

Appendix B

AHC Intercollegiate Primary Care Education and Resource Center Budget

Operations

Personnel	Salary	Benefits	Total
Director	60000	16800	76800
Standardized Pt Program Coordinator	40000	11200	51200
2 Center Learning Facilitators	80000	22400	102400
Administrative Assistant	30000	8400	38400
Technician	30000	8400	38400
Standardized Patients	30000		30000
Consultation	5000		5000
(e.g. statistical analysis, data entry)			
Equipment for staff			
Computers (6)	15000		15000
Printers (2)	1500		1500
Scanner	500		500
Copy machine	10000		10000
Fax machine	400		400
Expenses for Center staff			
Office Supplies	2000		2000
Telephone and ethernet recurring costs	1000		1000
Long-distance/fax	500		500
Postage	300		300
Meetings (e.g. food)	2000		2000
Travel			
Faculty Development	5000		5000
Director	1500		1500
Faculty Development			
Consultant(s)			5000
Retreat Center			3000
Faculty time for participation			30000
Faculty Time			
Development of 4 interdis Curr Modules	20000		20000
Interdisciplinary ethics planning	10000		10000
Pharmacy Faculty for Primary Care clinic interdisciplinary experience	23800		23800
Subtotal			**473,700.00**

Setting up Center

Furniture and Equipment for Center	
Video cameras (18)	18,000.00
VCRs (2)	500.00
Monitors (18)	50,000.00
Computer (4)	10,000.00
Furniture and equipment to outfit exam rooms	114,200.00
Furniture for conference/classroom areas	19,000.00
Desks, chairs, file cabinets for staff	10,000.00
Overhead projectors (2)	4,100.00
Slide projector (1)	500.00
Subtotal	**226,300.00**
Grand Total	**700,000.00**

Budget Justification

Personnel

The proposal outlines the six full time staff for the Center and specifies their responsibilities. Salary support is requested to support the first year of their position.

Standardized patients

As outlined in the proposal, the average hourly rate to compensate persons as standardized patients is $10.00/hour. Recruitment and training of standardized patients will occur in the fall and the use of such patients will begin in the later part of the fall semester or the beginning of the Spring semester. Thus, the budget request to compensate standardized patients is approximately half of what it will be in subsequent years.

Consultation

Initial evaluation activities, particularly those planned for the student learning experiences in the two primary care clinics, will requires some statistical and data entry support and consultation.

Equipment for staff

Staff will require office equipment to do their work. Support is requested for computers, printers, a scanner, copy machine and fax machine.

Expenses for Center staff

$3,800 is requested for office supplies, telephone/ethernet, and postage.

Food for meetings

There will be numerous meetings for the Council and interdisciplinary curricular planning during the first year. $2,000 is requested to provide refreshments at these meetings.

Faculty Development

To ensure that faculty are able to participate in the intensive faculty development program during the summer, funding is requested to support their release time or salary (if they are on a 9 month appointment). We anticipate there may be as many as 20 faculty involved in the summer program.

Funding is also requested to support national interdisciplinary education experts' participation in the faculty development program.

Funding is requested for the space and food associated with the faculty development retreat.

Faculty Time for Interdisciplinary Curricular planning

As outlined in the proposal, faculty would be supported to fully develop the four interdisciplinary curricular modules as well as support for faculty to develop mechanisms for interdisciplinary education efforts for ethics. This support would provide the release time for them to do this work or provide salary support during the summer for those on 9 month appointments. While we anticipate significant support by individual schools for faculty involved in this teaching, this additional support is intended for added faculty time required to plan interdisciplinary rather than intradisciplinary teaching in these content areas.

Furniture and Equipment for the Center

The proposal outlines the types of equipment necessary to use the Center for teaching and learning purposes.