An Innovative Approach to Student Internships on American Indian Reservations

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Personnel shortages are evident for a number of disciplines in the health professions, from physicians to nurses. Project CRISTAL (Collaborative Rural Interdisciplinary Service Training and Learning) was designed to immerse students in rural and reservation communities, expose students to the opportunities and need, encourage students to practice in underserved locations, understand the importance of working as a health care team, and address present and future health care workforce shortages. The project was also structured to help students develop the necessary skills to become culturally-sensitive providers. Working relationships among higher education institutions, health care facilities, and reservation communities were enhanced. Additionally, a culturally-appropriate, team-oriented curriculum for reservation settings was developed. Experiences gained from the North Dakota project provided valuable insight into interprofessional health training and health issues of American Indian populations.

Key Words: interprofessional education; multi-cultural awareness; student internships; service learning
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The United States will have a shortage of just under 100,000 physicians and 800,000 nurses by 2020 (National Center for Health Workforce Analysis, 2003) and will be most evident in rural and frontier areas of the country. According to the U.S. Department of Health and Human Services, hospitals will experience shortages of almost 810,000 nurses by 2020. This shortage represents a 29 percent vacancy rate compared with seven percent in early 2005 (Levine, & Marek, 2005). In 2004, the U.S. Department of Health and Human Services reported that 34.9 million Americans live in federally-designated health professional shortage areas where there is less than one primary care physician for every 2,000 persons in urban, suburban, and rural areas. The estimated shortage indicates that 16,000 physicians are needed to eliminate this deficiency (Paral, 2004). Furthermore, 44.4 million persons live in federally-designated mental health shortage areas where 4,000 professionals are needed to improve access to mental health services. The State University of New York Center for Health Workforce Studies (2005) also found a shortage of technologists in 56 percent of the states. To alleviate the shortage of clinical laboratory science professionals, 9,000 students would have to enter the discipline each year (Bureau of Labor Statistics, 2005).

Other issues compounding the shortage of health care providers are the lack of racial and ethnic diversity in occupational therapy, nursing, dietetics, and social work (Bureau of Labor Statistics, 2004). The lack of diversity among health professionals is addressed in Healthy People 2010 (Gamm, Hutchison, Dabney, & Dorsey, 2003). This document reported that one potential solution to improve access to care is to increase the number of minority health care professionals. According to Grumbach, Coffman, Munoz, and Rosenoff (2002, p.8), "the under representation of minorities in the health professions is a public health crisis.” While non-
Hispanic white physicians represented 73.2 percent of the workforce only 0.1 percent were physicians of American Indian/Alaska Native ethnicity. For registered nurses, non-Hispanic whites made up 81.7 percent of the workforce with American Indian/Alaska Native only 0.4 percent (Gumbach, et al. 2002). In the field of physical therapy, racial and ethnic diversity make up only 10 percent of the membership (APTA, 2006).

The Institute of Medicine report (2002) indicated that access to health care is an important step in eliminating racial and ethnic health disparities. The U.S. Commission on Civil Rights (2004) identified several social and cultural barriers affecting American Indians and Alaska Natives including racial and ethnic bias and discrimination, patient health behaviors, environmental factors, culturally appropriate health care delivery, language barriers, poverty rates, and lower educational levels.

The State of North Dakota has four reservations representing six tribes which are part of the Aberdeen Area Indian Health Service region. Historically, recruitment of health care providers for these tribal reservation communities has been challenging with a 30 percent turnover rate among providers (V. Bohling, personal communication, June 2005). Student internship opportunities on the reservations are anticipated to decrease the number of health care provider vacancies.

Several studies have been conducted in the field of medicine documenting the effect of rural training opportunities. Bowman (1996) for example, found that the most successful rural medical education projects emphasize a continuous approach to training that starts early during medical school. According to Norris, Coombs, and Carline (1996) about 60 percent of the nation's rural physicians took a rural clerkship in medical school. Norris et al. (1996) further indicated that enhancing medical education, either in medical school, residency training and/or
continuing medical education, positively influences recruitment and retention of family physicians interested in a rural practice. Pathman, Steiner, Jones, and Konrad, (1999) found that physicians who are prepared for the realities of a rural practice are retained longer in their rural location. Pathman et al. (1999) also supports that rural focused curricula better prepares students for the realities of rural practice, increases their clinical competence, and socializes them to rural communities.

The under-representation of American Indians in health careers indicates a need to train more students willing to practice in rural reservation areas in order to improve health outcomes. This concern was one of the major factors in the decision to develop a student learning project on the reservations in North Dakota. The project, known as Project CRISTAL, was a six-year collaboration among four agencies in North Dakota including the University of North Dakota (UND) in Grand Forks, Turtle Mountain Community College, Quentin N. Burdick Memorial Hospital in Belcourt, and Fort Berthold Community College in New Town. With an improved workforce, barriers to treatment such as access to health care, non-existent health service, cost factors, and cultural barriers, would be minimized. The need for programs like Project CRISTAL that are designed to train students to understand the value of working as a part of an interprofessional team parallel the Institute of Medicine's recommendations to provide quality through collaboration (2004). With a physician turnover rate of 25 percent nationally compared with 15 percent in non-Indian communities, student projects that provide service-based learning are critical to building local provider capacity.

**Project Description**

An article published by Slack, Cummings, Borrego, Fuller, and Cook (2002) discussed the challenges of preparing health care professionals for interprofessional practices with a focus
on rural placements, community-based experiences, and interprofessional curriculum. These authors noted that the training experience students receive is a strategy used to promote recruitment in rural communities. Although few publications were found that studied clinical, community-based experiences for health professional students on American Indian Reservations, a related project at the University of North Dakota’s Center for Rural Health, home of Project CRISTAL, found that student community-based programs were worthwhile and clearly had an educational function (Muus, & Amundson, 1999). Project CRISTAL (Collaborative Rural Interdisciplinary Service Training and Learning) was designed to develop innovative methods to train health care students on North Dakota reservations resulting in an increase in the number of health care practitioners for these areas. The project was developed as a four-week, summer internship and offered as an elective experience in addition to discipline-specific required internships. The primary goals of this project were to use new and innovative methods to train health care practitioners, demonstrate and evaluate the interdisciplinary methods and models designed to provide access to cost-effective, comprehensive health care, and increase the recruitment and retention of health care practitioners for reservation areas. Recruitment of participants for the project focused on providing information to students in each department and having former students share their experiences. Interested students completed an application and were selected for the project based on criteria developed by the Project CRISTAL committee. A financial stipend was provided for each student. A typical student group consisted of five to eight students, from different disciplines. Once the students were identified, they received an orientation to acquaint them with the logistics, goals, interdisciplinary team concepts, Indian Health Service, American Indian health care needs, and site specific information. This paper describes the process utilized in developing and implementing Project CRISTAL. Also included
is a discussion regarding the critical components such as the formation of the interprofessional team, community-academic collaboration, utilization and importance of an advisory council, site selection, local project coordinator, and development of the interprofessional curriculum.

**Forming the interprofessional faculty committee**

In 1996, University of North Dakota faculty members from the disciplines of medicine, clinical laboratory science, physical therapy, occupational therapy, and social work, organized to strategize and develop a student internship that would provide a clinical component, a service-learning element, and an opportunity to work across the various disciplines. Together, the team wrote a proposal to provide student experiences in rural North Dakota. Unfortunately, the first attempt was unsuccessful; however, faculty members worked with community representatives to revise and resubmit a proposal that was funded from 1999 – 2005 through the Quentin N. Burdick Rural Interdisciplinary Training Grant Program. The project elements remained the same in the revised proposal; however, the population focus changed to American Indian groups.

Understanding the health care needs of the community and recognizing local provider requests for services were critical to determining what disciplines were involved in the project. Keeping in mind the local provider needs, the project expanded to include the disciplines of nutrition, dietetics, radiologic technology, and psychology during the fourth year of the project. A significant factor in working on a proposal with our American Indian colleagues was developing a relationship built on trust. Putting their needs first and ensuring equal input during the entire process was vital to the success of this project.

**Community-Academic Collaboration.**

An important component in developing collaboration between the community and the university was the formation of an advisory council comprised of American Indians from the
Turtle Mountain Reservation and community college, and directors from the University of North Dakota Native American Program and National Resource Center on Native American Aging. The goal was to gain community input as well as utilize existing networks to implement the project objectives. The council assisted in recruiting community representatives, supporting the development of the student interprofessional projects on the reservation, and integrating the project in several university departments.

Continued development of collaborative relationships among the various project partners was essential for ongoing improvements. Initial barriers such as the university faculty members’ unfamiliarity with tribal and Indian Health systems have been overcome through a series of meetings and ongoing communications with the advisory committee and other community partners. Although there have been some changes in developing student internships, the networking among the partners has overcome the barriers to develop a quality internship for students.

Project CRISTAL initially began by forming a partnership with the Turtle Mountain Community College on the Turtle Mountain Reservation. The reservation measures twelve miles by six miles and has 29,161 enrolled members of the Chippewa Indian tribe. Approximately 8,000 American Indians live on the reservation and 40 percent are under age 18. A large number of tribal members reside in four border towns due to a housing shortage on the reservation. The same is true for our most recent partner, the Mandan Hidatsa Arikara Nation of the Fort Berthold Reservation. This reservation includes ten communities (four located off the reservation) with a population of 10,400 covering over 900,000. Both Project CRISTAL sites are located in federally designated Health Professional Shortage Areas over a six-county area.

Local coordinators overseeing activities from the reservations were essential to the
success of Project CRISTAL. The coordinators were selected by the tribal college faculty based on their skills and interest in developing a student-based community experience. Coordinators were also the students’ link with community agencies to expand their knowledge of local resources. Reservation visits for university faculty were planned prior to the implementation of the project to initiate networking and development of relationships with the reservation partners. Different faculty members were on-site weekly to supervise students during their internship with specific activities carried out by the local coordinator.

Housing students on the reservations was a major concern as lodging options are often limited. However, opportunities that allowed students to live together in the communities totally immersed the students into the culture and further enabled their participation in community activities.

**Curriculum Development**

A primary function of the project was to prepare these future professionals to provide culturally competent health care to an increasingly diverse population. To accomplish this, we developed a curriculum designed to provide interprofessional training for health professional students that would improve health care services for people living on North Dakota Indian Reservations. Students gained practical experience in health care by participating in patient chart reviews, patient interviews, medical rounds, specialty clinics, ambulatory care clinics, dental clinics, emergency room, social services, physical therapy, occupational therapy, and the review and/or provision of laboratory, x-ray, and dietary services. As part of the interprofessional curriculum, students participated in case-study presentations, team building exercises, discussed ideas for community projects, worked one-on-one with discipline-specific preceptors, and rotated through a variety of providers throughout their experience. Students gained an understanding
and appreciation that each discipline brings to solving health care issues for their patients and saw how their profession would interact in each of these areas.

As part of the experience, students were involved in paper case studies modeled after the University of North Dakota School of Medicine and Health Sciences’ patient-centered learning curriculum. Faculty and site preceptors facilitated discussions of case studies and provided opportunities to interview patients with related conditions. The use of video conferencing during the fourth year of the project assisted our group in understanding the importance of utilizing case studies and technology to expand discussion among the sites. One Project CRISTAL student reported that, “the case study is definitely making us work together as a team even though we come from different backgrounds and different fields of study.”

**Cultural Curriculum**

While in their respective internships, students were immersed in the local community and culture. Connected by telecommunications, students at both sites attended sessions focused on history, social-political aspects, culture, and activities specific to the American Indian population ranging from traditional medicine to the art of flute making. Presentations regarding the cultures of the Mandan, Hidatsa, Arikara, and Chippewa tribes gave students opportunities to strengthen their knowledge of the communities and the American Indian culture.

Community projects were another way to engage students in local activities. On-site coordinators and preceptors assisted students in the identification of community projects. Some activities examined breastfeeding data which were useful for the providers and their patients while other students conducted blood glucose and cholesterol screenings, and provided nutritional information during a local Pow-Wow (an American Indian dance event) and the opening of a walking trail. One group of students participated in a diabetes conference, setting
up a display for participants that emphasized the effect of drinking just three cans of soda every day had on their health. Students also participated in youth activities and served as mentors for children in organizations such as the Boys and Girls Club, and the sports project at the Turtle Mountain Community College. Another group of students participated in the Belcourt Community Wellness Fair setting up an informational booth that helped conference attendees recognize signs and symptoms of stroke. Participation in community projects not only benefited tribal members, but also Project CRISTAL students through their building of face to face teaching skills and ability to interact with local community members.

**Outcomes**

Throughout the six years of Project CRISTAL, 46 students from the disciplines of medicine (4), clinical laboratory science (9), physical therapy (9), occupational therapy (7), nutrition and dietetics (4), radiology technology (5), social work (7) and psychology (1) participated in the internship. This experience emphasized a connection with the community, learning about the American Indian culture, and the importance of interprofessional team work. Several student, university, and community outcomes were identified and provided valuable insight for further interprofessional work with reservation communities.

**Student Outcomes**

Students gave feedback via faculty-guided journaling throughout their Project CRISTAL experience. Many students reported gaining more insight into their own specialty as well as learning about other disciplines and how reservation health care providers work together. One student observed that, “by following the different disciplines it has made me more aware of how we all work together within the hospital, which prepares me for the future.”

Students reflected on their learning experiences related to a culture different from their
own. One student commented that, “I got to observe what we have been told about eye contact in the Native American culture ... I have probably seen it before but have been too busy to take notice of it.” Another student reported that, “the experience that I obtained at the CRISTAL site is the kind of experience that most aspiring medical professionals dream of experiencing. The staff at the hospital was wonderful and they were all very anxious to assist us in the learning process.”

**University Outcome**

As a result of this project, dedicated faculty members saw a need for training students and educating faculty members on interprofessional concepts to encourage more collaboration across the disciplines. One faculty member said “we have the opportunity to interact with other disciplines ... my understanding and respect for the work of other professions has grown as has my understanding of the learning needs for students in other professions.” The faculty experience with Project CRISTAL helped to establish the organizational framework for implementing the interprofessional education course on the University of North Dakota campus. The disciplines of medicine, nursing, occupational therapy, physical therapy, clinical laboratory science, physician assistant, social work, speech-language pathology, and dietetics are involved in this course.

**Community Outcomes**

Project CRISTAL was successfully implemented at the Turtle Mountain Reservation for six years and the Fort Berthold Reservation for three years. During this time, positive working relationships were established among university and reservation faculty, the Indian Health Service providers, community agencies, tribal representatives, and community members. A realized benefit for the community as a whole was that the internship provided students an
opportunity to learn more about the Indian Health Service, the American Indian culture, and the tribal communities of Belcourt and New Town. A community member indicated that “the students are energetic and self-directed; there was good exposure of local population to students and students to local population”. Through a variety of activities, Project CRISTAL students served as mentors to the youth on the reservation. During the summer camp, CRISTAL students educated second graders on the importance of eating right and staying healthy through a number of games and activities. Students provided information on heart attacks and strokes to participants at the annual wellness fair in Belcourt. Working with the Boys and Girls Club of America on the Fort Berthold Reservation, Project CRISTAL students encouraged the high school students to continue with their education and think about going on to college and provided insight as to why they chose their profession and how their profession can benefit the community. Future successful recruitment of health care professionals to reservations is improved when students see and learn about these communities first-hand. Project CRISTAL opened the door for further university projects on the reservations, rural health dialogues, and policy forums with community/tribal leaders. Although tracking of the participating students is not completed, seven of the 46 students have entered rural or semi-rural communities with one student returning as a service provider to the American Indian population.

Lessons Learned

Several key lessons were learned from Project CRISTAL that provide valuable insight for others choosing to develop and implement internships on American Indian Reservations.

1) The support of faculty and college administration is essential to move any new idea forward. Everyone involved with the project was extremely flexible, excellent at problem solving, and dedicated to success.
2) What looks easy on paper isn’t always easy to implement and transpose into reality. The challenge to coordinate health care facilities and providers, students, and faculty from nine disciplines, two tribal community colleges, and two state universities took a tremendous amount of interaction and commitment. Having adequate preparation is extremely important to the success of the project and providing a balance of structure and flexibility is essential. One area of concern for students was loosely defined roles for students, preceptors, and faculty. This insight allowed project faculty and staff to make the appropriate adjustments such as the development of a student manual and a more in-depth orientation session for students, to continually improve the project.

3) Working with reservations can be challenging due to paper work requirements for students. Project staff needed to start early by gathering necessary information for federal background checks. If these documents were not submitted before the project start date, students would not be allowed patient contact. Tribal resolutions in support of the project were also vital as tribal governments are the ultimate authority within reservation boundaries. The resolution not only provided documentation for services, but also allowed the students to participate in tribal meetings and observe tribal court.

4) Faculty initially believed that students living together was beneficial; however, one group reported they “never stopped discussing the day’s activities” and as a result, had little down time to relax and enjoy the experience. Others reported the interaction helped students get to know one another which strengthened their performance as a team. Additionally, students who lived with family usually facilitated activities and outings in the community for the other students. The decision of where to house students’ needs to be made based on their circumstances and type of housing available.
5) During the six-year implementation of Project CRISTAL, local coordinator turnover proved to be a disruption in the flow of the project. Repeated orientation and training of the four coordinators set the project back in regard to time and coordination efforts. Nonetheless, a local coordinator remains critical to achieving the project goals. These individuals have the expertise at the community level that is vital to the success of a community-based project.

6) Communication among faculty was critical as they rotated each week throughout the project period. A smooth transition from one faculty member to the other was necessary to avoid relying on the students to keep faculty updated regarding project activities. To bridge the gap between incoming and outgoing faculty, information through emails and/or personal telephone calls provided a mechanism to share the necessary information for a smooth transition.

7) With the addition of a second site, the use of technology became a valued aspect of the project activities. Grant funds were utilized to provide the tribal college with a privacy compliant internet-based video conferencing unit that enhanced the students’ education of the various disciplines represented in the entire project. This technology provided the capability for joint meetings between the two reservation sites and the university which permitted sharing of cultural education by cultural experts from the two reservations.

Conclusion

Students indicated that they had a good learning experience, were more confident working with different health care professionals, and reported improved patient interaction skills. They also appreciated the presentations and experiences specific to the American Indian tribes and culture. During the course of the project, faculty increased their level of insight into the process, strengths, and needs of the project, as well as what the student needs were to ensure a
good internship. One faculty member stated that another benefit of being involved in the project was that the experience provided “... a greater cultural understanding on a personal level”.

During the six-year period, faculty, staff, medical providers, and administration became much more comfortable with one another making project implementation easier. When issues or problems surfaced, they were quickly resolved and consensus reached through peer interaction. The strong community support, positive, energetic, committed students, dedicated faculty, health care providers, and staff attributed to the success of the project. The challenges faced throughout the project became benefits and were turned into learning opportunities.

Evidence from this project suggests that establishing interprofessional student internships on American Indian Reservations is an excellent learning process for students, faculty, health care providers, and the community. Lessons learned provide others with a basic framework from which to establish student clinical and community-based internships on American Indian Reservations and explore ways to work together and learn from each other’s culture, experiences, and interaction.
References

American Family Physician, 54(2), 471-479.


Personal communication (2005). Aberdeen Area Indian Health Service.


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