A Rural Geriatric Health Experience[1,2]

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The Rural Consortium for Health Outreach Information and Screening for Older Adults, a federally-funded demonstration project, provides health information and screening services to older adults in rural communities while affording pharmacy students a multidisciplinary geriatric learning experience. The module, Safe Use of Medications in the Elderly, is described. Pharmacy, nursing, psychology and social work students learn about medication problems facing older adults, help teach Foster Grandparents/Senior Companions about the safe use of medications, and then travel with faculty to senior centers in Missoula and 10 rural western Montana communities to conduct medication review sessions and talk about safe medication use to 125 elderly clients. Students practice their interpersonal, small group and public speaking communication skills, obtain real-life health histories, and gain first-hand insight into the challenges facing the rural elderly. Round-trip travel times to rural sites of up to five hours detract from the overall educational value of the program.

INTRODUCTION

The 1990 U.S. census(l) revealed that 16.8 percent of the people living in urban communities are 60 or more years of age; in rural areas, older adults constitute a similar proportion of the population (17.0 percent). Until recently, little attention has been paid to the provision of health screening and health information services for older adults(2), and this problem is exacerbated for older adults living in remote rural communities(3,4). Combined with the health impacts associated with aging, this lack of health screening and education makes the rural elderly particularly vulnerable to poor health outcomes(2). In addition to these greater health concerns faced by the elderly residents of rural communities, the challenges faced by older adults everywhere as a result of low income, poor education, inadequate housing and deficient transportation systems are magnified for the rural elderly(5-8).

A total of five poster session abstracts(9-13) and four articles(14-17) comprise the entire universe of reports describing rural learning opportunities for US pharmacy students published in the Journal from 1980 through 1996, and no articles in *The Journal of Pharmacy Teaching* mention rural training experiences. These findings suggest that a paucity of rural educational experiences exist for pharmacy students. This article describes a demonstration project which provides pharmacy students with such a rural health educational experience.

PROGRAM DESCRIPTION

The Rural Consortium for Health Outreach Information

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and Screening for Older Adults (Rural CHOIS) is a federally funded rural health outreach demonstration project intended to meet the health information needs of rural older adults and the educational needs of pharmacy students. The mission of the Rural CHOIS project is to provide health information and screening services to people aged 60 years and older who reside in rural communities throughout four western Montana counties, while providing students in the helping professions with an opportunity to interact with elderly clients through an multidisciplinary approach. Three of the four counties served by the Rural CHOIS program are federally designated as either a Health Professional Shortage Area (HPSA) or a Medically Underserved Area (MUA)(18). Coordinated by the Montana University Affiliated Rural Institute on Disabilities, the Rural CHOIS steering committee includes staff from the Rehabilitation Medicine Department of a Missoula hospital, a representative from Missoula Aging Services, officials from the Area VI Agency on Aging representing the rural counties participating in the project, faculty from Montana State University's School of Nursing, and faculty from The University of Montana's Department of Psychology, Department of Social Work, and the School of Pharmacy and Allied Health Sciences. Other university-based health education programs declined invitations to join the consortium. Medical education is not represented on the consortium as there is no medical school in the state.

Each month during the academic year, students from pharmacy, nursing, psychology and/or social work participate in a Rural CHOIS module covering a different topic (Table I). Each module begins with students participating in a three-hour training session on that month's topic. During this training session, students are provided with background information regarding the topic, are introduced to the screening instruments to be used in the rural communities (data forms, devices or equipment), and practice using the screening instruments through role playing exercises. In the next component of each module students help conduct a four-hour inservice training session for older adults enrolled in Missoula County's federally-sponsored Foster Grandparent and Senior Companion programs. The final component of each module occurs over the next four weeks, with students representing the different disciplines traveling with faculty to senior centers or senior congregate meal sites in Missoula and 10 rural communities to conduct health screenings and to provide health information related to the month's topic.

Participation in the CHOIS project is required of final-semester BS pharmacy students undertaking their four-week community pharmacy externships in Missoula, about nine students per semester. While most pharmacy students participate in only one module during the semester because their externship rotation schedules do not coincide with the schedules of CHOIS modules, some are able to take part in two modules. Approximately three to five final-semester nursing students completing their community health rotations participate in two or three modules during a semester, depending upon their other course commitments. A similar number of senior Social Work students (with an interest in medical social work or gerontology) obtaining community service hours to meet a course requirement in their program, and two or three Psychology students participate in a like number of modules depending upon the number of Independent Study credits for which they are registered during a given semester. The Rural CHOIS project screening module, Safe Use of Medications in the Elderly, conceived and executed by pharmacy program faculty, is representative of the other modules presented as part of the CHOIS project and is described in detail below.

Table I. Monthly topics covered in the modules[a] of the Rural CHOIS Project.

Self-Managed Care/Safety With Medications	Naturopathy[b]
Nutrition for the Elderly	Podiatry
Mobility/Home Safety	Stress and Coping
Arthritis/Pain Managemen	First Aid
Massage Therapy[b]	Depression
Horticulture Therapy[b]	Audiology
Forgetfulness/Memory Loss/ Alzheimer's Disease	Oral Health
Cardiovascular and Diabetes Risk Assessment I, II	Cancer
Health Insurance Issues	

[a]Each module consists of a three-hour training session for pharmacy, nursing, psychology and social work students, a four-hour inservice session for seniors serving as Foster Grandparents and Senior Companions, and screening/educational sessions in 11 different rural communities throughout western Montana. Topics are repeated approximately every two years depending upon the interest of the seniors and requests for specific topics.

[b]Students unavailable to participate during summer modules.

STUDENT TRAINING SESSION

The objectives for the Safe Use of Medications in the Elderly student training session are provided in Table II. Two major challenges confronted faculty in designing a curriculum for this training session: (*i*) to identify material that was general enough to be useful to the nursing, psychology and social work students, while serving as more than a review for the pharmacy students who had already covered much of the material earlier in their curriculum; and (*ii*) to encourage students to participate in the session in an multidisciplinary fashion.

Faculty decided to present general information about safe medication use in the elderly which might help a nurse, social worker, psychologist or pharmacist who was conducting a visit to a client's home determine whether the client was at risk for, or actually suffering from, a medication misadventure. (These clients would then be advised to contact their physician or pharmacist as soon as possible to have their entire prescription medication and nonprescription drug regimen reviewed.) Pharmacy students supplement faculty presentations by sharing their knowledge and experiences with the rest of the students. Student reticence to interact with colleagues from other disciplines is overcome by assigning seating in these sessions.

After the faculty presentations, students engage in a role playing exercise, with students from all three disciplines taking turns as clients and interviewers. Each "client" is provided with one of four patient histories which had been developed by the authors prior to the present project. (An example is provided in the Appendix.) Each interviewer receives a brief synopsis of their client's current situation. Interviewers then question their "client" about her/his medical history and medication use, transcribing the client's responses onto the health history form or medication information sheet identical to those the students subsequently

Table II. Objectives in the "Safe Use of Medications in the Elderly" module

1. Describe the physical changes associated with the aging process which can impede communication with the elderly. Suggest techniques for improving communication for each condition identified.
2. Identify factors which can create problems for elderly persons trying to take their medications. Recommend remedies for each factor.
3. List physical, social and behavioral characteristics of the elderly patient which increase their risk of drug misadventures.
4. Identify symptoms which an elderly person might exhibit or complain about which could be caused by the client's medications. Propose how a caregiver might determine whether or not each symptom is medication-related.
5. Provide a complete patient scenario to a student who will play the role of a client; a second student playing the caregiver's role will interview the "patient" to complete a Rural CHOIS medical history form or a Brown Bag Clinic medication review form.

use in the remote sites. Faculty members at the session observe the role playing interactions and provide feedback to the students regarding their interviewing skills.

INSERVICE FOR SENIOR ORGANIZATIONS

As noted in the introduction, the second phase for each module of the Rural CHOIS project consists of a presentation and screening session conducted during a four-hour inservice program for 80 older adults participating in Missoula County's federally-funded Foster Grandparent and Senior Companion (FG/SC) programs. Foster Grandparents serve as friends and mentors to elementary school-age children in the classroom. Senior Companions make regular visits to homebound elderly in the community. These programs mandate that seniors who receive federal money for serving as Foster Grandparents or Senior Companions undergo monthly inservice training which the Rural CHOIS program provides.

During the Safe Use of Medications in the Elderly inservice session, pharmacy students join the nursing, psychology and social work students in assisting FG/SC participants to complete their individual medical history forms and medication profile sheets. This provides the students with an opportunity to "field-test" the screening instruments and their interviewing skills. Several pharmacy, nursing, psychology and social work faculty members are available onsite to assist with student questions.

The second segment of this inservice session, moderated by a pharmacy faculty member, involves each pharmacy student making a ten-minute oral presentation to the entire FG/SC group on a medication-related topic (Table III). The FG/SC participants then discuss the session's content in groups of eight to ten, each group being moderated by two students from different disciplines. Pharmacy students and faculty field questions from the groups during the discussion period.

Each module uses a different presentation approach, depending upon the preference of the faculty member responsible for the module. In the Forgetfulness/Memory Loss/Alzheimer's disease module, for example, the faculty member (a psychologist) presents a brief lecture about a specific topic (*e.g.*, "forgetfulness"), followed by several minutes of small-group discussion about the topic moderated by the student teams as described above. The small-group activity is then followed by another brief lecture on the next topic (*e.g.*, "Alzheimer's disease"), followed by additional small-group discussion. The Arthritis/Pain Management module features devices designed to assist arthritis patients in reaching high places or opening jar lids. These devices are distributed among the several small groups of seniors. After a general presentation by the faculty member (in this case an Occupational Therapist) about availability, cost and use of the various devices, the seniors, under supervision of the student teams, have the opportunity to try the different devices for themselves.

Table III. Examples of topics for ten-minute oral inservice presentations in the "Safe Use of Medications in the Elderly" module of the Rural CHOIS Project[a]

1. Educational requirements and capabilities of pharmacists and pharmacy technicians.
2. Information that patients should know about each of their medications.
3. The dangers of "polypharmacy" and the importance of using the same pharmacy for all prescription and nonprescription medication purchases.
4. Medication compliance issues.
5. Money concerns: Generic drugs, therapeutic substitution and pharmaceutical manufacturer-based assistance programs.
6. Non-drug alternative therapies.
7. Proper medication storage, childproof caps and other safety Issues.
8. Personal medication profiles (*e.g.*, personal drug inventory cards, Vial of Life[R], Medic Alert[R]).

[a]Each module uses a different presentation approach, depending upon the preference of the faculty member responsible for the module. In other modules for example, students may moderate a discussion of a topic among 8-10 seniors following a brief presentation on the topic by the faculty member to the entire group.

Some modules, such as the Safety With Medications module, are repeated about every two years, depending upon the interest of the seniors and requests for particular topics. After a module has been conducted for the FG/SC participants, it is repeated in surrounding rural communities as described below.

SCREENING SESSIONS AT RURAL SITES

Providing health information and health screening services to older adults in remote rural communities is one of the main goals of the Rural CHOIS project. Communities are selected to participate in the Rural CHOIS project based upon geographic location and the availability of a congregate meal site.

Students accompany a pharmacy practice faculty member, a Rural CHOIS staff member and either a nurse or social worker from the hospital affiliated with the Rural CHOIS project to conduct medication review sessions for senior citizens in the 11 Rural CHOIS communities. Each pharmacy student generally attends two or three clinics, one near Missoula and one or two in remote communities. Students, faculty and Rural CHOIS staff travel together to each of the remote sites in a vehicle leased for the project. As some of the Rural CHOIS communities are located 2.5 driving hours from Missoula, conducting two-hour screening sessions in each of two different remote communities on the same date occasionally requires more than an eight-hour day. Travel time between sites permits students and faculty

time to discuss and reflect upon their experiences from the previous site.

Materials transported to each site include Brown Bag Clinic client data sheets and client consent forms(19), geriatric medication information sheets which were developed previously by one of the authors (GAC), standard prescription and nonprescription drug information references, the *Rx Triage* computer program(20) running on a Zenith 486-33 laptop computer for checking for drug interactions in clients' drug regimens, a Canon VJ-10 bubblejet printer for producing medication instruction sheets from the *Rx Triage* program for drugs not covered by the faculty-developed instruction sheets, and samples of medication reminder "dosette" boxes and other compliance aids.

Nursing, psychology and social work students assist each client in completing the client's individual health history form prior to the client's interview with the pharmacy student. The nursing, psychology and social work students then accompany the client during their medication regimen interview to help the client answer questions or provide additional information on the client's behalf. Pharmacy students spend from 10 to 45 minutes interviewing each client about their medications. A pharmacy practice faculty member checks each student's completed medication regimen review before permitting the client to leave the site. Approximately 65 rural clients participate in the Safety With Medications program each year.

PEDAGOGICAL CONSIDERATIONS

The pedagogical advantages of the Rural CHOIS program include opportunities for pharmacy students to practice their interpersonal, small group and public speaking communications skills in real-world settings, to review real-life medication regimens, and to gain first-hand insight into the challenges faced by the rural elderly. The program also provides pharmacy students an opportunity to work with students and professionals from other health-related disciplines and learn how these different disciplines can interact to meet a wide range of client needs.

No pedagogical approach is without its drawbacks, and the Rural CHOIS program is no exception. It is not feasible to tailor pharmacy student clinical rotation schedules to mesh with the CHOIS program timetable, reducing the opportunities for these students to participate in more CHOIS modules. Other concerns include the tendency for students to cluster together by discipline during the training sessions, at the remote sites, and during travel between sites. This has been overcome during subsequent modules by assigning seating during training sessions and by assigning only one student from each discipline to a travel team.

Travel times to some communities (as long as five hours driving time per round trip) may be excessive for the educational benefits realized. This can prove particularly problematic for faculty members who must travel to the several remote sites during their respective modules to supervise students at the screening sessions. Such is the nature of providing students with this type of educational experience in the remote corners of rural America. Efforts have been made to minimize the number of trips required by any one student to the more remote sites served by the Rural CHOIS program. To reduce faculty travel time, attempts have been made to recruit professionals living in the rural communities, such as local pharmacists for the medication review module, to help spread the supervisory responsibilities at the remote sites. These efforts have met with little success, however, as many of the Rural CHOIS towns have only one pharmacist and no funds are available to hire relief coverage for these individuals while they participate in the Rural CHOIS program.

CONCLUSIONS

The Rural CHOIS for Older Adults program provides students with real-world experience interacting with elderly clients living in rural areas while providing older adults living in remote rural communities with health information and screening services that they would not otherwise receive. Pharmacy students are able to work with students from different healthcare disciplines in providing these services. The Rural CHOIS for Older Adults project can serve as a model for providing pharmacy students with a multidisciplinary geriatric training experience in rural settings while providing health information and screening services to older adults residing in remote rural communities. Such programs require extensive multidisciplinary cooperation and coordination, and may require substantial travel time commitments by students as well as by faculty.

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APPENDIX

PRACTICE INTERVIEW: STUDENT PLAYING THE PATIENT

Note: Students from different disciplines may vary in their familiarity with medical terminology; therefore, medical terms used in this scenario are defined as they are appear. Likewise, both generic and trade names, where appropriate, are given for each of the drugs in the scenario. Answer questions easily and do not withhold information.

If your are female: You are a 58-year-old post-menopausal waitress.
If you are male: You are a 61-year-old waiter with benign prostatic hypertrophy (a non-cancerous enlargement of the prostate).

You have just been to the clinic complaining of mild headache, frequent urge to urinate (urinary urgency), burning upon urination (dysuria), and the presence of pus in your urine (pyuria). Past medical history shows that you have mildly elevated blood pressure (mild hypertension) and have suffered two attacks of gout in the past three years. Both the high blood pressure and gout are well controlled. Your current diagnosis is mild but recurrent urinary tract infection. Your social history reveals a recent divorce; no children. Your interests include cooking and raising violets.

Your current prescription medications include:
Allopurinol (a generic form of Zyloprim) lOOmg; you take one tablet by mouth 3 times daily to prevent gout attacks; prescribed by Dr. Brown, an emergency room doctor.
HCTZ (hydrochlorothiazide — your "water pill") 50mg; you take 1 tablet once daily to control your high blood pressure; prescribed by Dr. Harris, your usual doctor.
Bactrim (a combination sulfa drug to fight infection); you take 1/2 tablet each night at bedtime to prevent your recurring urinary tract infections; prescribed by Dr. Harris.
Dalmane (flurazepam) 30mg; you take one capsule at bedtime only if you have trouble getting to sleep; prescribed by Dr. Harris.
Darvocet N-100; you take 1 tablet as often as every 4 hours if needed to relieve headaches, prescribed by Dr. Jones, a doctor at an urgent care center.

Your current nonprescription (over-the-counter or OTC) drugs include:
Ex-Lax for occasional constipation.
Triaminic tablets for colds.
Robitussin cough syrup for coughs from colds.
Echinacea (eck-i-NAY-she-uh); you just started taking 1 capsule a day because you heard it can strengthen the body against infection.

Diet: Low cholesterol diet.
Allergies: None to drugs.
Alcohol: Usually one beer at night before meals.
Caffeine: None.
Cigarettes: 1 pack a day for 10 years.
Compliance with medications: Fair; occasionally forget to take all doses of your gout medicine.
Adverse drug reactions: None that you notice.

PRACTICE INTERVIEW: STUDENT CONDUCTING THE INTERVIEW

Note: Students from different disciplines may vary in their familiarity with medical terminology; therefore, medical terms used in this scenario are defined as they appear.

You are to interview a 58-year-old post-menopausal waitress (if patient is female) or a 61-year-old waiter with benign prostatic hypertrophy (if patient is male). Past medical history shows that the patient has mildly elevated blood pressure (mild hypertension) and has suffered two attacks of gout in the past three years. Both the high blood pressure and gout are well controlled. The patient has just been seen in the clinic for mild complaints of frequent urge to urinate (urinary urgency), burning upon urination (dysuria), and the presence of pus in your urine (pyuria). Urine cultures report moderate E. coli sensitive to all antibacterial agents tested. The diagnosis is that of a mild recurrent urinary tract infection.