AACP REPORTS

Report of the 2009-2010 Standing Committee on Advocacy

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INTRODUCTION

According to the Bylaws of the American Association of Colleges of Pharmacy (AACP), the Advocacy Committee:

“will advise the Board of Directors on the formation of positions on matters of public policy and on strategies to advance those positions to the public and private sectors on behalf of academic pharmacy.”

COMMITTEE CHARGE

President Jeffrey N. Baldwin charged the 2009-2010 Advocacy Committee to:

“examine the Academy’s ability to align education to support and enhance the strategic goals of the federal government’s agencies focused on meeting public need for primary health care.”

The strategic plan of the Health Resources and Services Administration contains seven goal statements:

As the Nation’s Access Agency, HRSA focuses on uninsured, underserved, and special needs populations in its goals and program activities:

GOAL 1: Improve Access to Health Care.

GOAL 2: Improve Health Outcomes.

GOAL 3: Improve the Quality of Health Care.

GOAL 4: Eliminate Health Disparities.

GOAL 5: Improve the Public Health and Health Care Systems.

GOAL 6: Enhance the Ability of the Health Care System to Respond to Public Health Emergencies.

GOAL 7: Achieve Excellence in Management Practices.

The committee conducted its business through a face-to-face meeting in October 2009, conference calls, a dedicated Google-site to facilitate the sharing of information and e-mail. Each member of the committee was asked to

select one of strategic goals of the Health Resources and Services Administration (HRSA) as their primary report submission effort. The committee determined that Goal 7 was not appropriate for consideration due to its focus on the internal management of HRSA. The committee agreed to a format for reviewing the Academy’s ability to support and enhance the HRSA strategic goals that included:

1. an assessment of evidence that the Academy is actively engaged in areas relevant to the goal;
2. determining that, if the Academy is not directly engaged in areas relevant to the goal, should it be?; and
3. a review of the literature, including American Association of Colleges of Pharmacy (AACP) educational policy and recommendations, and suggestions of AACP standing committees, to assist in the determination that if the Academy should be involved in areas relevant to the goal, what should that engagement be or how should it be presented to the Academy to create engagement?

Through a consensus process the committee agreed to a set of information-seeking questions that each would ask a self-selected group comprising 51 colleges and schools of pharmacy. The committee member selections took into consideration the diverse membership of the Academy. Information gained through contacting faculty at the selected institutions provided the appropriate response to the three questions listed above (Appendix I). Institutions participating in the information collection activity include:

Auburn University
Butler University

Campbell University
Creighton University
Drake University
Idaho State University
Loma Linda University
Mercer University
Midwestern University-Chicago
Northeastern University
Ohio Northern University
Oregon State University
Pacific University
Purdue University
St. Louis College of Pharmacy
Southern Illinois University Edwardsville
Texas A&M Health Science Center
Texas Tech University Health Sciences Center
The Ohio State University
The University of Arizona
The University of Findlay
The University of Montana
The University of New Mexico
The University of Tennessee
The University of Texas at Austin
The University of Toledo
The University of Utah
Touro University
Union University
University of Arkansas for Medical Sciences
University of California, San Diego
University of California, San Francisco
University of Colorado Denver
University of Florida
University of Illinois at Chicago
University of Michigan
University of Minnesota
University of Missouri-Kansas City
University of Nebraska Medical Center
University of Southern California
University of Southern Nevada
University of the Incarnate Word
University of the Pacific
University of Washington
University of Wisconsin
University of Wyoming
Washington State University
Western University of Health Sciences
West Virginia University

BACKGROUND

The Health Resources and Services Administration was established in 1973 and is an agency of the United States Department of Health and Human Services. Accord-

ing to the HRSA Web site, the agency “is the primary Federal agency for improving access to healthcare services for people who are uninsured, isolated or medically vulnerable.” The agency is comprised of 6 bureaus and 13 offices that individually focus on health services delivery and policy development. HRSA passes through most of its annual budget to states, localities, organizations and providers in the form of grants. These grants support activities that include rural and immigrant health, telemedicine, mental health, health professions education, maternal and child health, and HIV/AIDS. HRSA’s activities are supported by a large number of volunteer activities including grant review. Agency policy development is supported by several legislatively authorized advisory committees including those focused on primary care, interdisciplinary and community-based linkages, and nursing.¹

Over the last decade HRSA staff and leadership have been integral to the integration of clinical pharmacists into many of the programs mentioned above. HRSA recognizes the provision of high quality primary care services must include access to comprehensive pharmacy services. The clearest example of HRSA action related to integration of clinical pharmacy services into its programs is the Patient Safety and Clinical Pharmacy Services Collaborative. The Collaborative is a rapid-cycle quality improvement program for HRSA-supported safety-net organizations. This recognition provides a rationale for academic pharmacy to support the leadership of HRSA in its efforts to integrate clinical pharmacy services into primary care delivery. The Academy can assist HRSA in meeting its broad public health mission by sharing innovative teaching, research and service examples that are illustrated in this report.

RECOMMENDATION 1

AACP will work with HRSA to include a pharmacy faculty member on each of its advisory groups so that all HRSA programs might benefit from a broader interprofessional viewpoint.

GOAL 1: Improve Access to Health Care.

Description of HRSA programs related to this goal

Throughout its history, HRSA has been recognized as an agency with a broad mission. During the early years of the 21st century it referred to itself simply as the “access agency.” Increasing access to care remains one of the primary objectives of the agency. Programs associated with increasing access to care include the National Health Service Corps, Area Health Education Centers, community health centers, and health professions education programs that support the development and implementation of primary care health education programs. HRSA

telemedicine and rural health programs assist community infrastructure development that benefits practitioners in underserved, rural, and frontier areas of the United States by reducing their isolation and increasing their access to new information and professional interaction.

Most health professions will remain in high demand for the foreseeable future. HRSA leadership has consistently attempted to address this situation by supporting innovative programs through demonstration programs. To address the demand for clinical pharmacy services in safety-net sites, HRSA established a demonstration project early in the last decade that created the opportunity of clinical pharmacists to be integrated into community health centers. The evaluation of the demonstration provided the rationale for developing a more comprehensive program that has become known as the Patient Safety and Clinical Pharmacy Services Collaborative.² One benefit of this program is that participating entities improve efficiency and productivity across an entire organization allowing providers to see more patients and provided higher quality of care.

Evidence that the Academy is actively engaged in areas relevant to this goal

Within this goal, HRSA's objectives include:

- expand the capacity of the healthcare safety-net
- promote the development of a culturally diverse and representative healthcare workforce
- improve the distribution of health professionals in underserved areas, including rural and border areas
- promote access to health insurance and maximize use of available reimbursements for healthcare services

AACP policy statements that provide evidence for Academy-wide engagement include:

- Pharmacy curricula must adequately address contemporary issues associated with biotechnology advances in personalized medicine, including relevant competencies in cell and systems biology, bioengineering, genetics/genomics, proteomics, nanotechnology, cellular and tissue engineering, bio-imaging, computational methods, information technologies, and their psychological, social and economic implication. (*Source: Argus Commission, 2008*)
- AACP supports the teaching and clinical application of core competencies in primary care health services delivery which are community-based and fully interdisciplinary. (*Source: Professional Affairs Committee, 1994; amended by House of Delegates 2009*)

- AACP supports the elimination of legal, structural, social, and economic barriers to the delivery of primary care health services that prevent competent health professionals from providing necessary health care services. (*Source: Professional Affairs Committee, 1994*)

All of the member institutions surveyed are involved with various activities that support HRSA's objectives for this goal. Specifically, member institutions are involved with providing direct clinical pharmacy services to underserved/ rural areas either through consultation services or shared-faculty positions that provide clinical pharmacy services. More than half of the members institutions contacted indicated they are involved with health fairs that provide screenings, education and consultation services, including MTM, to underserved populations.

Many member institutions involve students with assisting in providing these services to the underserved. Students are involved with health fairs, immunization clinics, asthma education, and wellness education. Students are also involved through their required introductory pharmacy practice experiences (IPPE) and advanced pharmacy practice experiences (APPE) at rural health clinics and community health centers (CHC). Faculty and students increase access to prescriptions working through patient assistance programs.

Two specific examples demonstrate the Academy's strong support of this goal to improve access to healthcare. The University of Arizona's Rural Health Professions Program is an interprofessional program that facilitates the placement of health profession students, including student pharmacists, into rural areas of the state. The objective is to increase the number of practicing pharmacists in the rural areas of the state. This program incentivizes students by offering priority placements and early placement in their APPEs. By allowing students early exposure to rural practice sites, students are able to develop an interest in rural health and seek a career in a rural community.

Several of the schools support a full-time faculty member to provide clinical pharmacy services within a CHC. Using The University of Utah as an example, a faculty member is paid by the College to provide full-time clinical pharmacy services at a CHC in an inner city area. This clinic provides healthcare services to mostly indigent, migrant workers. Students participating in APPEs through this site gain cultural competence through their caring for underserved patients. The services offered by the faculty member have helped to lower patient hemoglobin A1C and lipid levels. Patients are provided healthcare services that they could not have otherwise afforded, ultimately leading to improved health outcomes.³

If the Academy is not directly engaged in areas relevant to the goal, should it be? Although there is a demonstration project of Telehealth Pharmacy at North Dakota State University College of Pharmacy, there was very little additional evidence that any other member institutions were supported by HRSA in their involvement with this objective.⁴ Texas Tech University Health Sciences Center has published an article about their efforts to train telehealth pharmacists and incorporate students into these sites for one of their required APPEs.⁵

Telehealth is a viable and effective solution to improving access to healthcare in many of the rural/border areas. The Academy needs to be more involved with this objective in order to more fully meet the objectives of this goal. Looking further into the 21st century, telehealth will be one of the more common ways to meet the needs of rural populations. Pharmacists as the medication expert must be a member of these teams.

A second area that needs increased engagement is the recruitment and retention of pharmacists for rural/border areas. Our data collection revealed that The University of Arizona as the only member institution with an active program for this purpose. Member institutions should create or require IPPEs and APPEs that expose students to rural practice in an effort to increase practice recruitment.

If the Academy should be involved in areas relevant to the goal, what should that engagement be or how should it be presented to the Academy to create engagement?

While there are several HRSA funded grants to develop telehealth practices in many states, it is unknown at this time to what extent telehealth is in use and how many of these systems utilize pharmacist and pharmacy services. It is also difficult to say what impact a pharmacist can have utilizing telehealth technology. A recent presentation at the APhA Annual Meeting in 2009 suggests that pharmacists can have a significant impact on a patient's health.⁶

Faculty at member institutions should seek and reach out to telehealth sites to offer additional clinical pharmacy services, ranging from brown bags to MTM services. Students need to be incorporated into telehealth sites as a part of their IPPEs and APPEs. Students are the future of rural pharmacy health practices. However, it may be unrealistic to expect that there is a pharmacist available for every rural community within a 25 mile radius. It is difficult to recruit and retain pharmacist for very small communities. Telehealth is one way to bridge this gap. It can offer these communities assurance of a safe medication delivery system and allow pharmacists a more patient-centered practice.

RECOMMENDATION 2

It is recommended that Academy members be educated on the practice of telehealth.

AACP would need to partner with either APhA or ASHP to offer additional continuing education programs on the opportunities within telehealth. This program would include descriptions of the types of telehealth practices, any outcomes seen in patient's health, and funding opportunities. The ultimate goal of such a program is that Academy members could find partners within a rural community group to obtain a HRSA grant to offer telehealth pharmacy services.

RECOMMENDATION 3

It is recommended that AACP offer programming along with The University of Arizona on the development of rural recruitment programs.

The program would include discussions of recruitment tools, faculty involvement, discussions of career opportunity development and job satisfaction among rural practicing pharmacists. The goal of this program is to educate members how to partner with rural community agencies to develop the recruitment of students for these areas.

RECOMMENDATION 4

It is recommended that AACP partner with external stakeholders to further develop their information and resources about pharmacy careers.

This then can be utilized by the various members of the Academy to present to elementary, junior high schools in the rural/ underserved areas of their states since influencing a child's career decision needs to be presented as early as possible in their formative years.

GOAL 2: Improve Health Outcomes.

Description of HRSA programs related to this goal

In 2003, the Institute of Medicine published "Health Professions: A Bridge to Quality" that recommended that the competencies of health professionals include the ability to provide patient-centered, team-based care.⁷ Ensuring that patients have access to services and programs that delivered by a team of providers focused on meeting the individual needs of the patient is an essential element of HRSA programs. HRSA addresses the issue of patient-centeredness by supporting programs that focus on the needs of individuals and populations that it describes as underserved, vulnerable or special needs. Programs that support the overall goal and its objectives include those authorized under the Ryan White CARE Act, those with the intent of creating culturally competent healthcare professionals and maternal and child health programs. HRSA also attempts to integrate preventive and wellness care

throughout all its programs so that patients have ready access to immunizations, prenatal care and health screens.

Evidence that the Academy is actively engaged in areas relevant to this goal

Within this goal, HRSA's objectives include:

- expand the availability of health care, particularly to underserved, vulnerable and special needs populations;
- increase utilization of preventive health care and chronic disease management services, particularly among underserved, vulnerable and special needs populations

AACP policy statements that provide evidence for Academy-wide engagement include:

- AACP supports research, education, and development of practice models to promote safe medication practices as the standard of care in all practice settings. (*Source: Argus Commission, 2007*)
- AACP supports the inclusion of complementary and alternative therapies within the pharmaceutical curricula to support the development of the skills and knowledge necessary to understand the role complementary and alternative therapies play in the delivery of pharmaceutical care. (*Source: Professional Affairs Committee, 1998*)

A majority of member institutions providing input to committee outreach describe practice, education or research initiatives focused on improving health outcomes. A number of others were in a planning mode to initiate activities in the future. Most of those in planning focused on ambulatory populations and clinic-type services.

Types of activities relevant to this goal in which member institutions are engaged include:

Safety-net clinics- The University of Southern California has one of the most comprehensive models of this service. HRSA's objectives under this Goal focus on availability of healthcare to the underserved and preventative healthcare. Safety net clinics in metropolitan areas are superb examples of increasing underserved patient access to comprehensive pharmacy services. The focus on preventative care and disease management is exemplified in current academic-community partnerships. Those member institutions not currently involved in this type of service and who are suitably located should consider strategic partnerships with eligible community-based service providers.

Immunizations- A large portion of the respondents were involved in immunization provision to the general public as well as at risk populations across the United States. The exact extent to which our member institutions

currently offer immunization programs is unclear. Because immunization delivery is easily one of the most visible activities in which pharmacists participate, AACP should compile a more inclusive data base in this area.

Disease education- Our data collection revealed that faculty and students at member institutions promote public health messages of disease prevention and wellness to the general public through health fairs, health screenings and disease-specific public education programs. Programs vary from individual patient education sessions to larger group sessions for specific disease processes such as diabetes and hypertension. Disease prevention activities most often mentioned include HIV, asthma, diabetes, hypertension, heartburn, and alcohol abuse.

Cardiovascular risk reduction- Creighton University's outcomes-based cardiovascular risk reduction program has been successful in reducing cardiovascular risk in University employees after life-style interventions. University of Missouri-Kansas City has demonstrated significant improvements in clinical outcomes in diabetes and lipid disorders in pharmacist-run outpatient clinics.

Anticoagulation clinics- Drake University reports a successful pharmacist-run outpatient service focusing on appropriate anticoagulation. Improvements in in-range INRs and decreases in bleeding rates were noted.

Alcohol abuse- Idaho State University describes an alcohol abuse screening program that focuses on identification of alcohol addiction and referral to appropriate treatment.

Chronic disease clinics- Member institutions describe clinical services provided to ambulatory patients. Common services include asthma management, diabetes care, cholesterol management, hypertension treatment, and medication therapy management (MTM).

Increasing health manpower- Creighton University has received HRSA grant funding for developing health manpower in underserved rural areas through interprofessional education and training. Two Native American reservations were targeted in order to provide interprofessional (pharmacy, medicine, occupational therapy, physical therapy) clinical experiences at tribal and Indian Health Service health systems so that students might gravitate to these areas after graduation.

If the Academy is not directly involved in areas relevant to the goal, should it be?

Through our data collection, while it is apparent that the Academy is already involved in areas relevant to this goal, it could be much more aggressive in its involvement. The Academy can be helpful to our patients by continued development of academic models based on the examples noted above. The availability of grants to support

development of academic-based programs focused on improving health outcomes should be considered as a long-term strategy of AACP.

If the Academy should be engaged in areas relevant to the goal, what should that engagement be or how should it be presented to the Academy to create engagement?

A national effort to focus on outcomes of various types of pharmacist-provided healthcare delivery should be initiated. This could be in the form of support of practice-based research networks. While this report includes a number of programs directed at improving health outcomes, outcomes research on these practice patterns is not sufficient at this time. Successful programs, such as Creighton University's Cardiovascular Risk Reduction program, should be considered and implemented by other member institutions. A model such as this or others, can serve as a successful guide for a college/school of pharmacy to provide cardiovascular risk reduction services to the employees of the university. Finally, AACP should serve as a repository of information of this kind so it can be made available to other member institutions.

RECOMMENDATION 5

AACP should serve as a repository for information on patient-centered service-teaching programs.

A database should be developed and maintained to serve as an authoritative source of information on pharmacy faculty service teaching impact on health outcomes.

RECOMMENDATION 6

AACP should work with other like organizations to enhance the interprofessional service teaching models from which our students can learn to improve health outcomes from a team perspective.

RECOMMENDATION 7

AACP should support the development of more extensive research models relating to the examination of the impact of service teaching.

GOAL 3: Improve the Quality of Health Care.

Description of HRSA programs related to this goal

In its 2003 report, the Institute of Medicine drew attention to the role of health professionals to bridge the quality chasm.⁸ The IOM report stated that healthcare professionals should be competent to deliver care that is based on the need of the patient and that care should be delivered collaboratively among all the providers caring for the patient. If healthcare professionals were competent in the delivery of patient-centered, team-based care, a

higher level of quality would result. Improving the quality of care is important, yet getting healthcare professionals to collaborate effectively to provide the care patients need is difficult. It goes against professional norms that are established early on, all too often during the education of the professional.

HRSA has long supported the development of health professions education programs that are interprofessional in nature. While HRSA programs refer to these as interdisciplinary, this is merely a legislative artifact and has no impact on the agency's interest in creating educational opportunities that allow a variety of health professions students to understand and better appreciate roles and scopes of practice of all the professionals they will work with when caring for patients. To accomplish this, HRSA supports interprofessional education through the Area Health Education Centers (AHEC) and Geriatric Education Centers (GEC) programs. The Public Health Service Act still includes legislative language for the Quentin Burdick Rural Health Education program that focused on interprofessional education in rural settings, but this program has not had federal funding in years.

Description of academic programs supported by HRSA programs related to this goal

Member institutions have a history of participation in HRSA-supported programs relevant to this goal. The University of New Mexico had funding from 1992-1997 to support a Center of Excellence for Native American student pharmacists. In Montana, a pharmacy faculty member currently is involved with a HRSA-supported project with the goal of establishing community health centers that increase patient access to pharmacy services.

Evidence that the Academy is actively engaged in areas relevant to this goal

Within this goal, HRSA's objectives include:

- promote the effectiveness of health care services;
- promote patient safety and improve patient protections;
- promote access to and appropriate use of health care information; and
- promote the implementation of evidence-based methodologies and best practices.

AACP policy statements that provide evidence for Academy-wide engagement include:

- AACP supports the inclusion of the basic principles of clinical and translational research, including how such research is conducted, evaluated, explained to patients, and applied to patient care, in the professional pharmacy curriculum. (*Source: Section of Teachers of Pharmacy Practice, 2009*)

- The mission of pharmacy education is to prepare graduates who provide patient-centered care that ensures optimal medication therapy outcomes and provides a foundation for specialization in specific areas of pharmacy practice; participation in the education of patients, other health care providers, and future pharmacists; conduct of research and other scholarly activity; and provision of service and leadership to the community. (Source: *Academic Affairs Committee*, 2007)
- Research that explores the social, economic, organizational and clinical factors that influence the outcomes of drug therapy in prevention or treatment of disease should be central to the mission of all colleges/schools of pharmacy. (Source: *Board of Directors based on Educating Clinical Scientists Task Force #2*, 2008)

Member institutions are engaged in efforts to improve the quality of healthcare in a variety of contexts. First, the assurance and continuous improvement of quality is an integral part of Doctor of Pharmacy curriculum. In 2004, the Joint Commission of Pharmacy Practitioners (JCPP), of which AACP is a member, committed to a shared vision that “Pharmacists will be the health care professionals responsible for providing patient care that ensures optimal medication therapy outcomes.” To that end, pharmacy schools have committed to research, practice, and teaching in the optimization of patient-centered and population-based improvement of therapeutic outcomes and health promotion, wellness, and disease prevention. Accreditation standards, to which schools and colleges are held accountable by the Accreditation Council for Pharmacy Education (ACPE), require colleges to teach quality assurance and improvement of patient care practice management, medication dispensing and distribution, drug information, and medication safety, and to ensure that students become involved in the quality improvement and assurance programs at their advanced practice rotation sites.⁹

Improving patient safety, and in particular medication safety, is a central concern of pharmacy practice including the Institute for Safe Medication Practices (ISMP), a nonprofit organization devoted entirely to medication error prevention and safe medication use. At The University of Arizona, an elective course on quality improvement and medication error reduction is offered. At Idaho State University, St. Louis College of Pharmacy, and The University of Utah, students may select APPEs in the area of systems improvement, quality, and safety. Pharmacy faculty are actively engaged in safety improvement research. Auburn University manages a research program in the area of systems engineering to explore

how good design can significantly increase work efficiency, and reduce errors. The University of Arizona faculty are engaged in research in the area of medication reconciliation. St. Louis College of Pharmacy hosts an annual conference on medication safety.

A primary role of pharmacy practice faculty is to improve the quality of medication therapy. At St. Louis College of Pharmacy and the University of Missouri-Kansas City, faculty improve anticoagulant therapy outcomes through medication therapy management in partnership with a number of hospital systems. Our data collection revealed pharmacy care outcomes research that results in the improvement of medication therapy occurs at many sites including the University of North Carolina at Chapel Hill, The University of Utah, Creighton University, University of Florida, and the University of Wyoming.

Interprofessional collaboration to improve the quality of healthcare is a current focus of pharmacy education, practice, and research. At the educational level, member institutions are mandated to emphasize interprofessional teamwork in their curricula by ACPE.¹⁰ In 2009 an entire edition of the *American Journal of Pharmaceutical Education* (AJPE) was dedicated to education, designed to help colleges implement interprofessional educational initiatives.¹¹ Our data collection revealed that pharmacy practice faculty at the University of Illinois at Chicago, St. Louis College of Pharmacy, University of Missouri-Kansas City, and University of Nebraska Medical Center are actively engaged in the design, implementation, and continuous improvement of patient-centered medical homes based on the concepts of team-based care.

About \$177 billion annually is associated with improper medication use and poor adherence to medications may contribute to more than a quarter million deaths each year.^{12, 13} Interventions by pharmacists and pharmacy practice faculty such as health fairs, medication therapy management, immunization, disease prevention screenings, the improvement of health literacy, medication review, counseling, and outcomes evaluation are associated with lower rates of preventable adverse drug events and improved healthcare outcomes.^{14, 15} Faculty at St. Louis College of Pharmacy have developed the Asthma-Friendly Pharmacy program, which is being implemented at community practice sites in Missouri. At the University of Washington, students and faculty are engaged in developing culturally appropriate medication use information. At The University of Montana, public health education is a mandatory component of service learning. HIV education is provided through the University of California, San Francisco pharmacy program. Students at University of Missouri-Kansas City have access to a health and wellness Web site designed by the School of Pharmacy.

HRSA-supported poison control centers operate through a number of pharmacy schools, including the University of Arkansas for Medical Sciences and The University of Arizona.

The provision of comprehensive pharmacy services to underserved populations, especially if that care becomes sustainable, is a valuable contribution of pharmacists to improved healthcare quality. Our data collection revealed that an increasing number of faculty and students are engaged with safety-net clinics. Member institutions, including the University of Arkansas for Medical Sciences and Auburn University work with HRSA-supported Area Health Education Centers (AHEC) to provide primary care in underserved settings.

If the Academy is not directly engaged in areas relevant to the goal, should it be?

The Academy is directly and extensively engaged in improving healthcare quality by increasing access to comprehensive pharmacy services.

If the Academy should be engaged in areas relevant to this goal, what should that engagement be or how should it be presented to the Academy to create engagement?

Ultimately, quality improvement should be a conspicuous aspect of every pharmacy practice. The development of quality assurance and improvement systems should be a part of the practice management curriculum. This will require that all practice faculty engage in practice design and outcomes research. A significant barrier to the advancement of practice-based research is the fact that students and many pharmacy practice faculty have little exposure to outcomes research methods. The professional curriculum and faculty development ought to be revised to this end.

Suggestion 1

Colleges and schools of pharmacy should ensure that the professional curriculum includes student exposure to health services and outcomes research.

GOAL 4: Eliminate Health Disparities.

Description of HRSA programs related to this goal

During the first Clinton Administration, HRSA leadership regularly stated the agency's mission was "100% access and 0% disparities." Since then, the agency has maintained its interest in and concern for improving access for underserved and uninsured patients to a culturally competent health professions workforce that provided high quality care. Several programs associated with health professions education are administered through the HRSA Bureau of Health Professions. Grant funding supports

health professions education institutions creation and implementation of programs that improve the educational completion rates of individuals from underserved and disadvantaged backgrounds. These programs put into practice the reality of improved outcomes and adherence to treatment plans when patients are cared for by individuals from their same ethnic or cultural background. The Health Careers Opportunity Program (HCOP) and the Diversity Centers of Excellence (COE) program are intended to create a pipeline of diverse individuals interested in pursuing health professions education.

Health disparities are not just the result of ethnic differences between patients and providers. Access and care intensity disparities negatively impact many populations including women and older adults. HRSA programs, such as the geriatric education centers (GEC), support health professions education institutions development and implementation of interprofessional educational programs focused on the care of older adults. Federal agencies, including HRSA, are developing Offices of Women's Health to address disparities experienced by women.

Evidence that the Academy is actively engaged in areas relevant to this goal

Within this goal, HRSA's objectives include:

- focus resources and services on diseases and conditions with the greatest health disparities;
- promote outreach efforts to reach populations most affected by health disparities; and
- promote the integration of cultural competency into HRSA programs, policies and procedures.

AACP policy statements that provide evidence for Academy-wide engagement include:

- Students, faculty and practitioner educators should work to achieve cultural competence and to deliver culturally competent care as part of their efforts to eliminate disparities and inequalities that exist in the health care delivery system. (*Source: Argus Commission, 2005*)
- AACP endorses the competencies of the Institute of Medicine for health professions education and advocates that all colleges and schools of pharmacy provide faculty and students meaningful opportunities to engage in interprofessional education, practice and research to better meet health needs of society. (*Source: Professional Affairs Committee, 2007*)

Types of activities in which schools and colleges of pharmacy are engaged include:

Centers of Excellence- While not all are supported by the HRSA diversity COE program, many of our member

institutions are engaged in collaborative partnerships with health systems and other organizations that focus relevant expertise on care improvement that can lead to reducing care disparities.

Howard University School of Pharmacy received a Center of Excellence grant in 2000 to initiate programs for K-12 students, partnerships with community colleges and four year institutions. The School of Pharmacy provides summer enrichment for middle and high school students, Pharmacy College Admissions Test (PCAT) preparation and other remedial programs to assure student success in their academic progression.

The Native American Center of Excellence at The University of Montana provides services and support for faculty, students, staff, and professionals. The University of Montana's Health Careers Opportunity Program (HCOP) provides academic and support services for disadvantaged students who want to pursue a career in pharmacy, physical therapy, or other health sciences.

Geriatric Education Centers- Older adult populations present care delivery challenges. These include their ability to access care due to age-related disabilities as well as the amount or type of care to which they have access. These challenges are the focus of HRSA-supported geriatric education centers that establish interprofessional, team-based practice approaches to improving the care of older adults. Our data collection revealed that Geriatric Education Centers, while not all supported by HRSA grants, engage pharmacy faculty, professionals and students at The University of Montana, St. John's University, West Virginia University, Nova Southeastern University, University of Rhode Island, University of North Carolina at Chapel Hill and The University of New Mexico.

Disparities in care and outcomes can be a direct result of living in a rural or underserved area in which access to necessary care may be limited or non-existent. Rural health professions programs such as those at the University of Illinois at Chicago, The University of Arizona, and University of Nebraska Medical Center provide training for pharmacists and student pharmacists to prepare them for and encourage them to practice in rural and under-resourced areas.

Our data collection reveals that many of our member institutions have clinic programs that provide care to underserved populations (Hispanic, Native American, African American, Asian American) with low or no-cost comprehensive pharmacy services. Services include immunizations, asthma and pulmonary disease management, diabetes management, hypertension clinics, smoking cessation clinics, medication safety training, HIV and hepatitis management, reproductive health, and other student pharmacist or faculty-run outreach programs. The increas-

ing diversity of student pharmacists allows outreach and referral programs to be delivered in multiple languages, addressing the cultural and literacy barriers that exist in both rural and metropolitan areas.

If the Academy is not directly engaged in areas relevant to the goal, should it be?

The Academy is engaged and should be working to increase its engagement. Healthy People 2010 has served as a driving force in preparing pharmacists and student pharmacists for their patient care roles.¹⁶ A central theme of many professional and interprofessional curricula center on the ten leading health indicators and twenty-eight focus areas of this report. Many IPPEs and APPEs, co-curricular, and extracurricular projects of student pharmacists and faculty address Healthy People goals. Outreach efforts to underserved populations offer exceptional learning opportunities for all health professions programs. Cultural competency training and opportunities for pharmacy practice in diverse communities should be enhanced.

If the Academy should be engaged in areas relevant to this goal, what should that engagement be or how should it be presented to the Academy to create engagement?

Interprofessional, team-based education opportunities should be developed and implemented. Member institutions that do not have relationships or affiliations with medical or allied health sciences schools should be encouraged and assisted in creating interprofessional learning experiences. Enhanced cultural competency training for pharmacists and student pharmacists should be encouraged, and models for training should be more broadly disseminated. Efforts to enhance the recruitment and retention of minority populations in pharmacy schools may have the following outcomes:

- Raise the profile of the profession and the institution within underrepresented communities locally and nationally;
- Increase the number of qualified underrepresented student applications;
- Create retention incentives for underrepresented students to accept and commit to our programs earlier in the admissions process;
- Create a comprehensive recruitment and retention package for underrepresented students involving faculty and staff, current students, and alumni from underrepresented groups;
- Outreach to a greater number of secondary schools, junior colleges, churches, and other institutions serving underrepresented groups;

- Develop and utilize a comprehensive marketing package to advertise scholarship and financial aid opportunities that would reduce loan indebtedness;
- Implement programs such as Students Helping Students: professional students conducting programs at elementary and junior high schools to expose prospective students to health sciences education; and
- Create a professional mentoring network of pharmacists from underrepresented groups to advise, counsel and guide students from underrepresented groups.

GOAL 5: Improve the Public Health and Health Care Systems.

Description of HRSA programs related to this goal

Healthcare reform initiatives place a strong dependence on increasing access to clinical and community-based preventive care and wellness services. Public policy recognizes that our current approach of caring for patients after they are sick is an unsustainable approach to healthcare delivery. The public health concepts of health promotion and disease prevention are centuries old, yet overshadowed by the increased dependence on medications, acute care improvements and technologic advancements. Through its stated commitment to communities and special populations, HRSA encourages the integration of prevention and wellness across all its programs including those that support health professions education. While specific programs are aimed at addressing the public health workforce, HRSA supports collaborative efforts between health systems and communities so community-identified needs can be more effectively and efficiently addressed. The development and maintenance of collaborative approaches for improving public health and healthcare systems is dependent on increasing the use of health information technologies such as electronic records for improved patient care, as well as trend analysis useful in population health.

Evidence that the Academy is actively engaged in areas relevant to this goal

Within this goal, HRSA's objectives include:

- utilize trend data to assist in targeting program resources toward goals;
- increase collaborative efforts to improve the capacity and efficiency of the public health and health care systems; and
- accelerate the development and use of an electronic health information infrastructure.

AACP policy statements that provide evidence for Academy-wide engagement include:

- AACP and colleges and schools of pharmacy should assure that students, faculty and alumni have sophisticated and continuous preparation in the design and use of health information technology (HIT) and systems and are prepared to apply HIT in evidence-based decision-making at the point of patient care. (*Source: Board of Directors based on Argus Commission, 2008*)
- AACP supports the teaching and clinical application of core competencies in primary care health services delivery which are community-based and fully interdisciplinary. (*Source: Professional Affairs Committee, 1994; amended by House of Delegates 2009*)
- AACP supports interdisciplinary and interprofessional education for health professions education. (*Source: Professional Affairs Committee, 2002*)
- AACP will support member colleges and schools in their efforts to develop pharmacy professionals committed to their communities and all the populations they serve, by facilitating opportunities for the development and maintenance of strong community-campus partnerships. (*Source: Professional Affairs Committee, 2001*)
- AACP encourages its member colleges and schools to develop or enhance relationships with other primary care professions and educational institutions in the areas of practice, professional education, research, and information sharing. (*Source: Professional Affairs Committee, 1994*)

Member institutions are engaged in efforts to improve public health and healthcare systems at several levels. First, public health is an integral part of the Doctor of Pharmacy curriculum, being articulated in the educational outcomes established by the Center for the Advancement of Pharmaceutical Education (CAPE), the accreditation standards of the Accreditation Council for Pharmacy Education (ACPE), and the North American Pharmacist Licensure Exam (NAPLEX).^{17, 18, 19} To meet these educational, accreditation and licensure expectations, member institutions teach students various elements of public health and healthcare systems in both required and elective classes. For example, Midwestern University Chicago College of Pharmacy requires a course on quality assurance that includes an analysis of infrastructures, pharmacists' functions and drug therapy outcomes. Idaho State University and others have advanced pharmacy practice experiences available in public health and patient safety programs. The University of Montana requires students to perform a service learning project with a community agency where they provide information regarding a public health issue.

Many schools are offering and requiring interprofessional courses with medical students and other health professions. These courses are intended to build bridges and develop teamwork between the various health professionals represented. For example, The University of Arizona requires interprofessional courses on topics such as healthcare collaboration, cultural competency, and communications. These courses provide the opportunity for dialogue between students of the various health professions to solve patient and systems problems.

Not only are faculty engaged in educating students regarding public health, but they are also providing education to Pharm.D. graduates through fellowships and residency programs. For example, the Medical College of Virginia and Virginia Commonwealth University sponsor a Health Policy and Advocacy Fellowship that trains pharmacists for careers in public health or the Academy, and Samford University's PGY1 residency program has a focus on public health.

Faculty are also engaged in improving public health through their clinical, research, and service activities. Clinical pharmacy faculty across the country are collaborating and providing services in free clinics and community clinics such as immunizations, diabetes care, smoking cessation programs, and medication therapy management. For example, the University of Minnesota and University of Southern California collaborate with safety-net organizations to provide primary care. Immunization services are particularly noteworthy. Our data collection revealed all member institutions we contacted were involved with immunization services. Faculty engage students in the provision of these services through IPPEs, APPEs, and extracurricular activities such as health fairs, health screenings, and diabetes education programs. Other faculty are involved in developing technology to improve patient safety. Creighton University recently filed a patent for an electronic health coordination tool. Faculty at the University of Michigan are also working on technology to improve patient safety. Health literacy, an important element in improving patient safety and addressing other public health issues, is a focus of faculty research and service at St. Louis College of Pharmacy and Northeastern University.

Faculty are also involved in non-clinical service activities that support HRSA's public health goals. For example, at the University of Arkansas for Medical Sciences, faculty members work with the state board of pharmacy in analyzing system errors for individual pharmacists and pharmacies and assisting them in establishing procedures to correct these errors. Member institutions are involved in activities such as developing patient safety institutes (University of Illinois at Chicago), providing

public health information through a Web site (Butler University) and poison control (University of Arkansas for Medical Sciences and The University of Utah).

If the Academy is not directly engaged in areas relevant to the goal, should it be?

Academic pharmacy is directly engaged in this HRSA goal as a result of its curriculum standards. Student pharmacists upon graduation recite the Oath of a Pharmacist. Students pledge to, "Consider the welfare of humanity and relief of suffering my primary concerns." This pledge reflects a professional commitment to both individual patients and patient populations. The pledge reflects and supports the CAPE education outcomes, the ACPE Doctor of Pharmacy curricular standards, and the NAPLEX blueprint. Students learn about public health and health systems in traditional classroom based learning activities, and are also engaged in experiential courses regarding patient safety and other public health issues.

If the Academy should be engaged in areas relevant to this goal, what should that engagement be or how should it be presented to the Academy to create engagement?

Clearly, the Academy's engagement at the curricular level is defined and well executed. Faculty engagement appears to be largely driven by curricular requirements, individual interest and expertise. Clinical faculty are directly involved in public health initiatives through patient education, clinical services, patient safety initiatives and research. A review of the data collected in this random sample indicates that pharmacy education should be proud of their support of this goal.

Many of the initiatives described are local in nature. AACP may want to consider supporting mechanisms for practice-based research networks to enable faculty to collect and analyze data on a more macro level.

Suggestion 2

AACP should consider supporting mechanisms for practice-based research networks to enable faculty to collect and analyze data on a more macro level.

GOAL 6: Enhance the Ability of the Health Care System to Respond to Public Health Emergencies.

Description of HRSA programs related to this goal

The public policy pendulum continues to swing back and forth on the issue of public health preparedness. Prior to the terrorist attacks in 2001, public health advocates had long sought increased attention and support for programs that would better organize and sustain national, state and local preparedness for both disease and disaster related emergencies. In its March 2001 testimony prepared

for the House and Senate Appropriations Subcommittee on Labor, Health and Human Services and Education, the Coalition for Health Funding stated, "We risk disaster if we do not continue to strengthen our seriously weakened public health infrastructure at the local, state and federal levels to prepare for a bioterrorist attack, a major outbreak of infectious disease such as the world experienced in the 1918 with pandemic flu, and to curb rapidly growing resistance to antibiotics used to treat serious bacterial infections."²⁰ After September 2001, the federal government redirected billions of dollars toward strengthening the public health infrastructure and HRSA was a direct recipient of this redirected funding. While the programs developed have provided substantial information and resources aimed at improving the capacity of health systems and healthcare professionals to better prepare for a variety of public health disasters and threats, the pendulum is now swinging back to a level of complacency with HRSA budget justification for the 2011 fiscal year void of any reference to bioterrorism, all-hazards preparedness, or emergency preparedness.²¹

Yet, in spite of this reduced interest, academic pharmacy remains committed to improving the capacity of pharmacy graduates to address public health emergencies and to participate as a member of the public health team.

Evidence that the Academy is actively engaged in areas relevant to this goal

Within this goal, HRSA's objectives include:

- enhance the ability of hospitals, health centers, emergency medical systems, poison control centers, and health professionals to respond to bioterrorism and other public health threats in a timely and effective manner; and
- evaluate the capacity of the health care system to plan for and respond to potentially urgent/emergent health care issues.

AACP policy statements that provide evidence for Academy-wide engagement include:

- AACP supports the development and implementation of curricular components and associated instructional strategies that assure a common set of core competencies and knowledge concerning population-based epidemiology, the determinants of health, effective programs in health promotion and disease prevention, and primary health care services delivery for all health professionals. (Source: *Professional Affairs Committee, 1994*)

The Academy is engaged in this goal, both indirectly by preparing its graduates to contribute in this arena and directly in terms of providing manpower in response to public health emergencies. In preparing graduates to

respond to public health emergencies, a large percentage of colleges and schools of pharmacy require immunization training as part of the required curriculum. Additionally, several schools and colleges incorporate emergency preparedness, and bioterrorism training and education into required and/or elective curricula. Student engagement in public health and public health emergency response also extends to the experiential curriculum with many schools offering rotations with public health districts and emphasizing immunization promotion and emergency preparedness in community pharmacy rotations. Moreover, as noted in a recent study by Westrick, et al., pharmacy college/school affiliations with community pharmacies increase the likelihood that the community pharmacy is engaged in immunization and emergency preparedness as compared to community pharmacies that are not affiliated with a pharmacy college/school.²²

The Academy is also actively engaged in assisting their local health districts and communities prepare for and response to public health emergencies. Notable examples in this arena include Southern Illinois University Edwardsville faculty members who participate in mock emergency drills and assist with National Strategic Stockpiling efforts. The University of Arkansas for Medical Sciences, which has contracts with the state to provide a call center for emergency readiness volunteers, trains students for emergency readiness and maintains a database in this regard. The University of Missouri-Kansas City has a cooperative agreement with the Kansas City Health Department to assist with the health department's mass prophylaxis dispensing efforts as a response to public health emergency within the city limits of Kansas City. Likewise, Washington State University has an agreement with the Spokane Regional Health District that commits a response team of faculty and students to public health emergencies in any of the seven counties in eastern Washington.

If the Academy is not directly engaged in areas relevant to this goal, should it be?

Although there are pockets of involvement across the Academy, it is important that colleges and schools of pharmacy become even more engaged and committed to training its students and providing support to public health emergency response systems. As recently noted by Washington State University faculty member Dr. Brenda S. Bray, "Pharmacists can be really instrumental in setting up a medication dispensing system and they have knowledge of the legal and regulatory aspects of such a system, as well as the therapeutic value of the medications."²³ Acknowledgement of the importance of the pharmacist's role and the pharmacist's unique and

comprehensive knowledge of medications and medication dispensing systems amounts to a clarion call to the Academy to ensure that graduates of colleges and schools of pharmacy are prepared to contribute to public health emergency response systems. Moreover, in line with the conclusions of Westrick, et al., it is the Academy that will push the profession forward into a more active role in this regard.

If the Academy should be engaged in areas relevant to this goal, what should that engagement be or how should it be presented to the Academy to create engagement?

It is important that colleges and schools of pharmacy look to enhancing public health emergency content in their didactic curricula and become more involved in seeking out opportunities for students to participate in these activities in the experiential curricula as well as identifying public health system partners to more fully engage faculty members and students as participants of emergency response teams. Moreover, members of the Academy that are currently engaged in public health emergency response systems should serve as models that could be replicated in colleges and schools across the country. Faculty and students from these colleges/schools, along with their collaborators at the public health districts, should be encouraged to promote their activities highlighting the role that pharmacists can play. Finally, where members of the Academy are engaged in this goal, attention should be given to demonstrating the impact of pharmacy school faculty, students, and pharmacists on public health emergency response systems through scholarly research and publication.

Recommendation 8

AACP should support the development of a curriculum resource/curriculum guide for bioterrorism/emergency preparedness.

CONCLUSION

In light of increased access to healthcare services engendered by healthcare reform, establishing innovative approaches to patient-centered, team-based care will be of greater importance in regard to improved quality of care and the increased demands this will place on an already stressed health professions workforce. This report makes clear the benefit to HRSA and our nation of engaging academic pharmacy in meeting the agency's public health mission as stated in its strategic goals. HRSA can better position the Academy in partnering toward this end by establishing a stronger working relationship and

communication with AACP staff regarding grant funding, committee nominations and other activities related to ongoing implementation of programs and services. In turn, AACP member institutions should make every effort to participate in the programs that HRSA administers so that public health and primary care service delivery can be improved. The strength of this relationship can, as reflected in the examples included in this report, result in improved health outcomes for the general public and those populations with special health needs.

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Appendix 1.

School Name*	Goal 6: Enhance the Ability of the Health Care System to Respond to Public Health Emergencies				
	Goal 1: Improve Access to Health Care	Goal 2: Improve Health Outcomes	Goal 3: Improve Quality of Health Care	Goal 4: Eliminate Health Disparities	Goal 5: Improve Public Health and Health Care Systems
Auburn University	Rural community care; Prescription assistance				
Butler University	Campus-based wellness program; Community asthma management clinics; Faculty research on obesity management	Campus faculty and staff support local health departments; h1N1 Immunization clinic; IPPEs/APPEs at underserved clinics		Required IPPE: underserved population clinic; Faculty serve in underserved family practice centers; Faculty volunteer at community free clinics	Campus-based smoking cessation program; Public health website
Campbell University	Campus-based Wellness Institute; Focus on community outreach for screenings and education; Participants in county health program	Faculty-operated medical home practice; Campus-based health education and screening clinic			Medication error elective course; related topics covered in two required courses
Creighton University	Campus-based cardiovascular risk reduction and wellness program; Immunization clinics for underserved; Liaison- Native American health facilities for provider services	Immunizations demonstrating reduced CV	Immunizations; Campus-based programs on IPE at international clinics and the Clarion Project	Faculty provide clinical services to the underserved and Native Americans	Immunizations
					Immunizations; Participation in disaster relief and preparedness; Campus-based center designated as a Patient Safety Organization (PSO)

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Appendix 1. (Continued)

School Name*	Goal 6: Enhance the Ability of the Health Care System to Respond to Public Health Emergencies				
	Goal 1: Improve Access to Health Care	Goal 2: Improve Health Outcomes	Goal 3: Improve Quality of Health Care	Goal 4: Eliminate Health Disparities	Goal 5: Improve Public Health and Health Care Systems
Drake University	Campus-supported community access pharmacy with immunization services and access to contraception for low-income women	Anticoagulation clinic; JHACO safety goal	Polk County Senior Services; Continuity of Care; Ambulatory care clinics	Community Access Pharmacy; Diversity Service Learning;	Campus-based health screenings; Pertussis counseling; Smoking cessation counseling
Howard University				Center of Excellence grant to initiate programs for K-12 students and partnerships with community colleges and 4-yr inst	
Idaho State University	HRSA PSCPSC participant: HIV Clinic and a Community Clinic that serves mainly Hispanic population with a focus on Hep C and DM	Student pharmacist flu clinics; Health screenings for diabetes and heartburn awareness; Future initiative will add Alcohol Intervention Screening	Patient Safety is integrated throughout the curriculum and the campus supports an APPE elective that focuses on patient safety	Community Clinic serves Hispanic underserved population; disease states that are a focus include DM and Hep C	Restructuring of the CoP will now make it part of the Health Sciences Division, offering more opportunities for inter-professional education
Loma Linda University	Hep C and DM Medicare Part D assistance	Tobacco dependence clinic to qualify patients for transplants	SACHS interprofessional education and care of uninsured patients		Student pharmacist immunization clinics at Walgreens; Health fair participation; Farmer's Market BP screening
Mercer University	Students provide MTM services at assisted living facilities	Provide immunizations for students at places of employment and health fairs			Students study patient safety in elective courses and required courses

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Appendix 1. (Continued)

School Name*	Goal 6: Enhance the Ability of the Health Care System to Respond to Public Health Emergencies			
	Goal 1: Improve Access to Health Care	Goal 2: Improve Health Outcomes	Goal 3: Improve Quality of Health Care	Goal 4: Eliminate Health Disparities
Mid-western University - Chicago	Faculty-guided Interprofessional student group provide education to free clinics	Faculty and students provide vaccinations at health fairs, clinics, work with state on 10-City Challenge with focus on diabetes	Faculty develop medical home model of practice; Students work with patients in longitudinal rotation	Students take quality assurance course (required); Elective rotations in patient safety available
North-eastern University	Faculty and students participate in community health clinics; DM Passport program		Medical home initiative; Participate in community health clinics; DM Passport program; MTM; Harbor Health Services, Inc (Crystal Apple Award)	Health literacy; advisory to Patient Health Education; outreach patient education; low-income women's access to contraception
Oregon State University			Oregon State Infectious diseases research; Major funding partners: NIH, Smithsonian Institute, AACP, Linus Pauling Institute, Medical Research Foundation of Oregon; Merck Oregon Sea Grant; Northwest Health Foundation, College of Pharmacy; Investigators in pharmaceuticals	Student Sandra Widows wins 2009 USPS award, recognized for advancing healthcare among underserved populations. Her demonstrated leadership and advocacy for pharmacist-led care provides a model coupling empathy and expertise for all pharmacists
				Medical reserve corps, prepared for pandemic response
				Immunization clinics

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Appendix 1. (Continued)

School Name*	Goal 6: Enhance the Ability of the Health Care System to Respond to Public Health Emergencies				
	Goal 1: Improve Access to Health Care	Goal 2: Improve Health Outcomes	Goal 3: Improve Quality of Health Care	Goal 4: Eliminate Health Disparities	Goal 5: Improve Public Health and Health Care Systems
Pacific University Oregon	The Regence Foundation grant for its Inter-disciplinary Diabetes Clinic with a focus on providing affordable care to Latinos and other underserved populations with diabetes	Patient Safety and Clinical Pharmacy Services Collaborative in conjunction with Virginia Garcia Memorial Health Center and Tuality Hospital			Student Matthew Maglalang received USPS award for the creation of an oral contraceptive patient brochure featuring drug interactions issues and enhancing the pharmacy services provided to clinical staff and patients
Southern Illinois University Edwardsville	FQHC, free clinic, home mental health, home health initiatives; SNPhA initiatives	Care in CF, HIV/AIDS, asthma; Immunization training	MTM services	Care of patients with health disparities – diabetes, HIV, mental health; Cultural sensitivity education of students; needs assessment	SIUE – faculty participate in National Strategic Stockpiling; Mock emergency drills
St. Louis College of Pharmacy	St. Louis Community Health Partnership grant; Missouri Foundation for Health St. Louis College of Pharmacy Health Literacy	St. Louis Community Health Partnership grant	St. Louis Community Health Partnership grant	St. Louis Community Health Partnership grant; Missouri Foundation for Health St. Louis College of Pharmacy Health Literacy	Missouri Foundation for Health St. Louis College of Pharmacy Health Literacy

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Appendix 1. (Continued)

School Name*	Goal 6: Enhance the Ability of the Health Care System to Respond to Public Health Emergencies				
	Goal 1: Improve Access to Health Care	Goal 2: Improve Health Outcomes	Goal 3: Improve Quality of Health Care	Goal 4: Eliminate Health Disparities	Goal 5: Improve Public Health and Health Care Systems
Texas A&M Health Science Center	Texas A&M Service Learning requirements serve under served patients in South Texas.	Texas A&M service learning requirements provide immunization clinics, screenings, and health fairs to community	Texas A&M service learning requires participation in health fairs and patient education programs; Faculty provide clinical pharmacy services in 5 different primary care clinics in the region	Texas A&M requires medical Spanish in two IPPE courses	Students do APPE rotations in public health
Texas Tech University Health Sciences Center	Texas Tech offers poison control services to districts in Texas; Medication disposal clinics offered to public; Immunization clinics to underserved	Immunization clinics to underserved	Immunization clinics to underserved	Immunization clinics to underserved	Immunization clinics to underserved
Touro University					Student Pharmacist Lindsey Rich wins USPS award for excellence in health science and public policy in pharmacy practice for the improvement of public health in local and global communities

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Appendix 1. (Continued)

School Name*	Goal 6: Enhance the Ability of the Health Care System to Respond to Public Health Emergencies				
	Goal 1: Improve Access to Health Care	Goal 2: Improve Health Outcomes	Goal 3: Improve Quality of Health Care	Goal 4: Eliminate Health Disparities	Goal 5: Improve Public Health and Health Care Systems
The University of Arizona	Rural Health Professions Program; Rural APPE Program; Several PSCPSC HRSA grants; Future grant activities on children's access to asthma medications	Student groups offer outreach screenings (diabetes, asthma, HTN, brown bags, heartburn education and eventually cholesterol screenings, skin cancer awareness/ education, and immunization education/ awareness)	Elective course on Quality Improvement & Medication Error Reduction (will be required in 2011); Publications on med rec., Health Information Exchange from AZ Medicaid, and e-prescribing	Rural Health Professions Program; Rural APPE Program; Several of the PSCPSC HRSA grants; Arizona Health Sciences Center (AHSC) at the University of Arizona has Centers of Excellence in Valley Fever and Women's Health in which pharmacy students and faculty participate	Active interprofessional education program; Pubs on med rec., Health Information Exchange from AZ Medicaid on e-prescribing; National survey looking at body weight in peds and adult ICUs; Clinical pharmacist is called when CF patient admitted - transitions patient from acute to outpatient care post discharge
University of Arkansas for Medical Sciences	Partner with AHEC to provide primary care in rural settings; Requires students in longitudinal IPPE to provide 4-12 hours of service in free clinics	Contract with state to run poison control center and to provide preferred drug list	Contract with state to run poison control center and to provide preferred drug list; Students learn about patient safety in a variety of courses and rotations; Faculty work with Board of Pharmacy and individual pharmacists on med errors	Students learn about patient safety in a variety of courses and rotations, Faculty work with Board of Pharmacy and individual pharmacists on med errors	Contract with state to provide call center for readiness volunteers, trained students, and maintain the database

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Appendix 1. (Continued)

School Name*	Goal 6: Enhance the Ability of the Health Care System to Respond to Public Health Emergencies			
	Goal 1: Improve Access to Health Care	Goal 2: Improve Health Outcomes	Goal 3: Improve Quality of Health Care	Goal 5: Improve Public Health and Health Care Systems
University of California, San Diego	Youth Friendly Pharmacy Initiative	Faculty study details complex Health Care needs of Medicaid's highest-need, highest-cost populations; Youth Friendly Pharmacy Initiative	Faculty study details complex Health Care needs of Medicaid's highest-need, highest-cost populations; Youth Friendly Pharmacy Initiative	Faculty study details complex Health Care needs of Medicaid's highest-need, highest-cost populations; Youth Friendly Pharmacy Initiative
University of California, San Francisco	Clinics for general public/underserved in SF area; Nat'l HIV/AIDS telephone consulting service; MTM clinics in CHCs	Major effort in HIV/AIDS education. MTM clinics, asthma clinics	Major effort in HIV/AIDS education. MTM clinics, asthma clinics	Major effort in HIV/AIDS education. MTM clinics, asthma clinics
University of Illinois at Chicago	Recipient of 2 senior outreach grants; Blood pressure checks, health education on campus with student pharmacists and faculty; Student orgs involved in health fairs	Contract with state to administer immunizations to state employees = 10,000 given in 2009	Various faculty working in V/A system medical home model	Illinois Patient Safety Institute; Inter-professional educ.; Patient safety in Pharm.D. management/communications course and APPEs
University of Michigan	Students provide H1N1 immunizations; Community-based wellness screenings, health education; Partner with free clinic; Work with College of Nursing on AHEC grant	Students assigned to patients in assisted living home; 6-7 faculty working in medical home model		Patient safety within curriculum; Faculty working on using technology to improve safety

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Appendix 1. (Continued)

School Name*	Goal 6: Enhance the Ability of the Health Care System to Respond to Public Health Emergencies				
	Goal 1: Improve Access to Health Care	Goal 2: Improve Health Outcomes	Goal 3: Improve Quality of Health Care	Goal 4: Eliminate Health Disparities	Goal 5: Improve Public Health and Health Care Systems
University of Minnesota	Safety net organizations collaborator on primary care activities; Immunizations offered to public and underserved	Safety net organizations collaborator on primary care activities; Immunizations offered to public and underserved	Safety net organizations collaborator on primary care activities; Immunizations offered to public and underserved	Safety net organizations collaborator on primary care activities; Immunizations offered to public and underserved	Immunizations offered to public and underserved
University of Missouri-Kansas City	UMKC Health Sciences Health and Wellness Fair; Kansas City Free Health Clinic; Nursing home and 22 pharmacy faculty placements; Jackson County Free Health Clinic Patient Assistance Program (PAP)	Kansas City Free Health Clinic; Jackson County Free Health Clinic	Numerous articles and abstracts; Inpatient Medicine-based activities; Jackson County Free Health Clinic	Immunizations offered to public and underserved	Cooperative agreement with the Kansas City Missouri Health Department to assist with the health department's mass prophylaxis dispensing efforts as a response to public health emergency
The University of Montana		Health care screenings provided in conjunction with GEC and an interprofessional, interdisciplinary team; Screening site for lipids, HbA1C, bone density, and blood pressure	Student pharmacist service learning projects; Immunization clinics; Faculty involved with HRSA to establish CHC's and increase pharmacy services	Faculty involved with HRSA to establish CHC's and increase pharmacy services; The Native American Center of Excellence; Health Careers Opportunity Program	Student pharmacists trained to give immunizations; Faculty members have grants related to bioterrorism training and education
University of Nebraska Medical Center	Faculty actively engaged in the design, implementation and continuous improvement of patient centered medical homes based on team-based care	Faculty actively engaged in the design, implementation and continuous improvement of patient centered medical homes based on team-based care	Faculty actively engaged in the design, implementation and continuous improvement of patient centered medical homes based on team-based care	Faculty actively engaged in the design, implementation and continuous improvement of patient centered medical homes based on team-based care	

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Appendix 1. (Continued)

School Name*	Goal 6: Enhance the Ability of the Health Care System to Respond to Public Health Emergencies				
	Goal 1: Improve Access to Health Care	Goal 2: Improve Health Outcomes	Goal 3: Improve Quality of Health Care	Goal 4: Eliminate Health Disparities	Goal 5: Improve Public Health and Health Care Systems
The University of New Mexico	Safety net collaborative in Taos; Quentin Burdick Rural Health Inter-disciplinary Program			HRSA-funded Student Center of Excellence for Native American student pharmacists from 1992-1997	
University of Southern California	Safety net clinics for underserved in LA under grant from HRSA; Immunization clinics	Activities in safety net clinics; Immunization clinics	Activities in safety net clinics; Immunization clinics	Activities in safety net clinics	Immunization clinics
University of Southern Nevada	Health screenings (BP, blood glucose) at regularly scheduled health fairs in Nevada and Utah				Student pharmacists and faculty support health district staff in immunization clinics for H1N1 in the Las Vegas Valley; Faculty part of district responders for medical emergencies Immunization clinics
The University of Tennessee					
The University of Texas at Austin				Affiliated with Colleges of Pharmacy at The University of Texas, Texas A&M, and The University of Houston, Central Texas Veterans Health Care System was named a Mental Health Center of Excellence in 2006	Faculty provide pharmacy-related services to the Southern Nevada Health District including clinical pharmacy services to its TB, women's health, immunization, diabetes, STD and HIV/AIDS clinics

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Appendix 1. (Continued)

School Name*	Goal 1: Improve Access to Health Care	Goal 2: Improve Health Outcomes	Goal 3: Improve Quality of Health Care	Goal 4: Eliminate Health Disparities	Goal 5: Improve Public Health and Health Care Systems	Goal 6: Enhance the Ability of the Health Care System to Respond to Public Health Emergencies
	Partners in D program; Immunizations by student pharmacists; Youth Friendly Pharmacy Initiative; Operation	Partners in D program; Immunizations by student pharmacists; Youth Friendly Pharmacy Initiative; Operation	Partners in D program; Immunizations by student pharmacists; Youth Friendly Pharmacy Initiative; Operation	Partners in D program; Immunizations by student pharmacists; Youth Friendly Pharmacy Initiative; Operation	Partners in D program; Immunizations by student pharmacists; Youth Friendly Pharmacy Initiative; Operation	Partners in D program; Immunizations by student pharmacists; Youth Friendly Pharmacy Initiative; Operation
University of the Pacific	Immunization, Operation Diabetes, Heartburn Awareness in public health fairs; Campus certification in diabetes, BP, cholesterol, and bone density screening and smoking cessation and pulmonary device training; Pharmaceutical Care Clinics; Medication Use Safety Training for Seniors (MUST™); Osteoporosis and Fall Prevention Screening, Education, and Intervention for Seniors; Asthma Clinic; multi-disciplinary clinic for MTM	Partners in D program; Immunizations by student pharmacists; Youth Friendly Pharmacy Initiative; Operation	Partners in D program; Immunizations by student pharmacists; Youth Friendly Pharmacy Initiative; Operation	Partners in D program; Immunizations by student pharmacists; Youth Friendly Pharmacy Initiative; Operation	Partners in D program; Immunizations by student pharmacists; Youth Friendly Pharmacy Initiative; Operation	Partners in D program; Immunizations by student pharmacists; Youth Friendly Pharmacy Initiative; Operation

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Goal 6: Enhance the Ability of the Health Care System to Respond to Public Health Emergencies											
School Name*	Goal 1: Improve Access to Health Care		Goal 2: Improve Health Outcomes		Goal 3: Improve Quality of Health Care		Goal 4: Eliminate Health Disparities		Goal 5: Improve Public Health and Health Care Systems		Emergencies
	Rural/under-served clerkships at Assoc. of Utah Clinics; Faculty provides CPS in a CHC; Published activities and findings; HRSA PSCPCS expansion grant recipient		Pharmacy student groups offer outreach screenings (diabetes, heartburn awareness) and flu clinics; Pharmacy students hold a fundraiser for the Maliheh Clinic; Study funded by the Mariner S. Eccles Foundation – on pharmacists providing asthma education		Several elective APPEs on quality and safety; Pharmacotherapy Outcomes Research Center; Several publications; Medicaid Transformation Grant funded by the Mariner S. Eccles Foundation – on pharmacists providing asthma education		Faculty member provides CPS full-time in a CHC focused on the Hispanic population and diabetes; Published activities findings; Medicaid Transformation Grant		Required interdisciplinary course on cultural competency and mutual respect for all health sciences students; Pharmacotherapy Outcomes Research Center; Several publications; HRSA grant to develop a PCC Collaborative Communication Training Program		
The University of Utah											HRSA grant: Poison Control Enhancement and Stabilization; Poison Control Center is a member of the Clinical Stockpile Emergency Preparedness Team; Practice emergency preparedness; Student pharmacists trained to give immunizations
University of Washington	Student pharmacists provide MTM and smoking cessation education to patients; Translation of health literature; Pharmacy Access Partnership; Pharmacy Forward fellows at Reproductive Health 2009; Pacific Institute for Women's Health (part of Pharmacy Access Partnership)		Student pharmacists provide MTM and smoking cessation education to patients; Translation of health literature; Pharmacy Access Partnership; Pharmacy Forward fellows at Reproductive Health 2009; Pacific Institute for Women's Health (part of Pharmacy Access Partnership) clinical conference; Pacific Institute for Women's Health		Student pharmacists provide MTM and smoking cessation education to patients; Translation of health literature; Pharmacy Access Partnership; Pharmacy Forward fellows at Reproductive Health 2009; Pacific Institute for Women's Health (part of Pharmacy Access Partnership) clinical conference; Pacific Institute for Women's Health		Student pharmacists provide MTM and smoking cessation education to patients; Translation of health literature; Pharmacy Access Partnership; Pharmacy Forward fellows at Reproductive Health 2009; Pacific Institute for Women's Health (part of Pharmacy Access Partnership) clinical conference; Pacific Institute for Women's Health		Washington Pharmacy Access Partnership; Pacific Institute for Women's Health (part of Pharmacy Access Partnership); Student Theresa Valluzzi, USPS award for advancing the healthy People 2010 goals by participating in a number of initiatives that increased awareness of disease prevention activities in medically underserved communities		Immunization clinics; UW's Center for Public Health Preparedness (CPHP); Recipient of one of 13 curriculum development grants by HRSA's Bioterrorism Training and Curriculum Development Program (BTCDP)

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Appendix 1. (Continued)

School Name*	Goal 1: Improve Access to Health Care	Goal 2: Improve Health Outcomes	Goal 3: Improve Quality of Health Care	Goal 4: Eliminate Health Disparities	Goal 5: Improve Public Health and Health Care Systems	Goal 6: Enhance the Ability of the Health Care System to Respond to Public Health Emergencies
Washington State University			Washington State Drug Information Center serves health care professionals in the state with over 2000 calls per year.		Student Christina Yoshihara - 2009 USPS award for pharmacist's role in the management of diabetes in the pediatric population	Immunization clinics; Partnership with UW for a multi-disciplinary curriculum in bioterrorism and public health emergency preparedness; WSU student pharmacists volunteer on the emergency response team for Spokane's Public Health District
West Virginia University				WV's only federally designated Center for Excellence in Disabilities; WVU School of Pharmacy is affiliated with the Geriatric Center of Excellence		
Western University of Health Sciences			Faculty research on cultural competency of health care providers, ethnic disparities in access and utilization of health services, ethnic disparities in health literacy	Faculty research on cultural competency of health care providers, ethnic disparities in access and utilization of health services, ethnic disparities in health literacy	Faculty research on comparative pharmacoeconomics of psychopharmacological medications	Immunization clinics