

North Dakota Institute for Pharmaceutical Care (NDIPC) Annual Report, 2011-12

Since 2003, Dr. David Scott has been the Director of the NDIPC. Two faculty members added in 2008 [Dr. Daniel Friesner (economics) and Dr. Christian Albano (management and public health)] and in 2011-12 three additional faculty members [Dr. Mark Strand (epidemiology and health behavior), Dr. Donald Warren (health disparities), and Dr. Wendy Brown (About the Patient)], have strengthened the Institute's assessment capabilities. In 2012, the Institute has reorganized to expand its mission of promoting and assessing public health activities. The mission statement, action plan steps and status are described next.

Mission Statement

The North Dakota State University's (NDSU) College of Pharmacy, Nursing, and Allied Sciences serve the state and region through its programs in pharmaceutical education, research, patient care, and public services. The North Dakota Institute for Pharmaceutical Care is an outreach arm of the College. The Institute exists for the purpose of helping pharmacists and other health professionals improve their practice and providing them with a ready source of assessment skills.

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Action Plan Steps: The status of each action step follows.

1. **Assess the current level of pharmaceutical care and technician use in ND**
 - a. **Assess the need for pharmaceutical care and training areas in ND**
 - b. **Compare rural vs. urban areas**

Status. Pharmacist's needs were assessed by the **North Dakota Pharmaceutical Care Survey** described in Action Steps 1a and 1b. A manuscript has been published ([J Rural Health: 2010 26:90-96](#)).

2. **Respond to the needs of practicing pharmacists in North Dakota by working with them to upgrade their knowledge, skills, and practices through the Institute's outreach programs.**
 - a. **Identify existing training programs that meet pharmacists' needs (i.e., asthma, diabetes).**

Status: Ongoing process – National training programs have been identified and pharmacists are referred to them, unless there is a substantial group to train.

- b. **Develop and implement disease state management certificate programs in areas where there is a significant number of pharmacists with a need, or in areas where programs are not yet developed.**

Status: In 2007, the North Dakota House of Representatives Bill 1433 was passed that allows

pharmacists to provide Disease State Management (DSM) to public employees that suffer from diabetes. The Institute has worked with a planning group to develop a **Pharmacist Diabetes Management Program for the NDPERS Project** to assess the outcomes. On a 2nd project, Dr(s). Friesner and Scott are working with Dr. Brown on a **Pain Management Program** for WSI patients and outcomes will be measured over 16 weeks. On a 3rd project, a 2 year grant for the **Implementation and Assessment of Asthma Care in Rural North Dakota** by Dr(s) Brown, Friesner, and Scott has been funded by a \$25,000 Pharmacy Practice Seed Grant.

On a 4th project, Dr(s). Friesner and Scott are working with Dr(s). Johnson and Dewey on a funded project titled **Medication Therapy Management: Pharmacists Preventing Hospital Admissions**. Peters Institute, University of Minnesota, \$12,000 grant, \$3,500 subcontract to NDSU. The project is being completed in a series of stages, with each stage producing a deliverable. A poster paper was presented at the 2011 APhA meeting in Seattle which examines how physicians and registered nurses respond to recommendations made by the consultant pharmacist. An extension of this project is currently under way to extend this study by examining how pharmacist interventions (particularly NSAID use) prevent adverse outcomes including (but not limited to) hospitalizations is under way. Data collection is currently being analyzed. These two preliminary projects will be combined with additional data being collected to examine how the provision of pharmacist-provided MTM services reduces hospital re-admissions.

c. Assess the impact of the ND pharmaceutical care services through the ECHO (economic, clinical, humanistic outcomes) model approach.

1. Economic outcomes

Status: To address the economic outcomes, several projects have been either initiated or completed.

Dr. Friesner and Ms. Samantha Buck (NDSU PharmD. student) obtained a \$9,000 grant from the North Dakota Board of Pharmacy to estimate the **economic impact of community telepharmacies** in North Dakota and northwestern Minnesota. The project was completed including a technical report which was submitted to the North Dakota Board of Pharmacy, and a poster presentation on the project was presented at the 2011 APhA meeting.

2. Clinical outcomes

Status: To address clinical outcomes, a number of projects are completed or underway.

The **Medication Dispensing Error Study** in North Dakota study reported a lower overall rate (1.0%) and a slight difference in dispensing error rates between remote telepharmacy sites (1.3%) and comparison sites (0.8%). Both rates were less than the previous national reported level (1.7% error rate for 50 pharmacies, JAPhA, 2003 43:191-200). One manuscript has been published (JAPhA, 2011, 50(4) and a 2nd manuscript (remote vs. central sites) has been accepted by JAPhA.

Dr(s). Scott and Friesner are working on a project, **Medication Adverse Drug Event (ADE) and Error Reporting Network in Rural Hospitals**. The plan is to establish a reporting system for all rural hospitals participating in the Project, beginning with the 10 remote hospital pharmacy sites. We are working with Tara Modisett at NASPA (National Alliance Society of Pharmacy

Associations) and PQC to develop 2 software components: one to detect ADEs and medication errors reporting (MER-ND) and the second to track quality risk measures (QRM-ND). Funding will be the \$7,500 set aside for ADE/medication error reporting and a request was funded by the NDBOP (\$2,700). The rates and types of ADEs and medication errors will be assessed and the results will be compared with national data for small and large hospitals. A number of quality indicators (n=15, standard measures) were monitored at baseline (11-15-10) and periodically (every 3 months for 24 months).

Dr. Scott is conducting the **ASHP Survey of Hospital Pharmacy Services in Rural Hospitals**. The plan is to use the American Society of Health-Systems Pharmacy (ASHP) national hospital pharmacy survey to assess the small rural hospitals in North Dakota. Survey components include medication safety initiatives, technology, prescribing practices, transcription, acquisition costs, and inpatient staffing. This survey was sent to all critical access hospitals (CAH) in ND, including the 10 CAHs with telepharmacy services, both prior to implementation of telepharmacy services (pre-phase), and at the completion (post-phase) of the project. The results will be compared between CAHs that use telepharmacy services with standard rural CAHs in North Dakota and also with national ASHP data for hospitals with less than 50 beds. The response rate for the pre-phase was 71.1% (27 of 38) with 10 of 10 NDTP CAH (100%) responding. The follow-up survey was mailed in 2011 and 20 of 38 (52.6%) with 10 of 10 NDTP CAH and 10 of non-NDTP CAHs responding. A working paper is underway with a goal of publication.

3. Humanistic outcomes

Status: To address humanistic (quality) outcomes, a number of projects have been completed and are listed in previous annual reports.

Dr. Albano's studies are included in **Appendix 1**.

Appendix 1.

Two poster papers were accepted by AACCP:

1. Albano CB, Scott DM, Miller DR, and Peterson CD. An integrated, interprofessional, and innovative pharmacy experience. 2012 American Association of Colleges of Pharmacy Annual Meeting, Orlando/Kissimmee, FL. July 14, 2012.
2. Albano CB, Fitz A, Ottney A, Patel A, Yan A, Buckley T, and Jones J. Incorporation of a Health Literacy Tool into the Pharmacy Curriculum. 2012 American Association of Colleges of Pharmacy Annual Meeting, Orlando/Kissimmee, FL. July 15, 2012.