

North Dakota Institute for Pharmaceutical Care (NDIPC) Annual Report, 2010-11

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)], have strengthened the Institute's economic and management assessment capabilities. 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 improve their practice and providing them with a ready source of health and drug information and assessment skills.

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For assessment questions, contact NDIPC Director David.Scott@ndsu.edu, phone 701-231-5867

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. The survey was mailed to 686 North Dakota pharmacists and 412 (60.0%) surveys were returned. A manuscript has been published (J Rural Health: 2010 26:90-96).

On a second project to measure the current level of technician use in ND (Action Step 1), the director has worked with the Northland Association of Pharmacy Technicians (NAPTA) to conduct the **ND Pharmacy Technician Wage, Benefits and Responsibilities Survey**. Dr(s) Friesner and Scott second manuscript "Identifying characteristics to assume unconventional technician roles" has been published (JAPhA, 2010 50:580-91).

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. While the UND Center for Rural Health was awarded the contract to evaluate the project, the Institute is also conducting an independent assessment. On a 2nd project, Dr(s). Friesner and Scott are working with Dr. Steig on a **Pain Management Program** for WSI patients. Clinical, humanistic, and economic 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). Scott, Friesner and Dewey conducted the evaluation of the **Medication Therapy Management (MTM) in Assisted Living Facilities**. The project was supported by a \$50,000 grant from the Minnesota Department of Health (subcontract \$7,000 for assessment). A manuscript by Scott DM, Friesner DL, Dewey M, Johnson T, Kessler M: Preliminary Evaluation of Medication Therapy Management Services in Assisted Living Facilities in Rural Minnesota. The Consultant Pharmacist 2010 25(5):305-319 was published.

On a 5th 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. Over the next year, this poster will be turned into a technical report and submitted for publication. 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 assessed the economic impact of the Pharmacy Ownership Law in a manuscript titled "Institutional Policy Making In Action: **The Case of Pharmacy Ownership in North Dakota**" which was published in 2009 in the Journal of Economic Issues (Vol. 43, No. 4, pp. 1025-1042).

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 in 2010, 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** reported a lower overall rate (1.0%) and a slight difference in medication dispensing error rates between remote telepharmacy sites (1.3%) and comparison pharmacies (0.8%), with both rates being comparable with nationally reported levels. The study was conducted in North Dakota among pharmacy staff at 14 remote telepharmacy sites and 8 comparison community pharmacies. During a 45-month period, the remote telepharmacy group reported 47,078 prescriptions and 631 quality-related events (QREs) compared with 123,346 prescriptions and 1,002 QREs in the standard pharmacy group. Results for near misses (pharmacy discovery) and errors (patient discovery) for the remote and comparison sites were 553 and 887 and 78 and 125, respectively. Both rates were less than the previous national reported level (1.7% error rate for 50 pharmacies, JAPhA, 2003 43:191-200). A manuscript comparing remote and comparison groups has been accepted (JAPhA, 2011 51). A second manuscript comparing the remote and central sites has been submitted (JAPhA, 2011).

Dr(s). Scott and Friesner are working on a project, **Medication Adverse Drug Event (ADE) and Error Reporting Network in Rural Hospitals**. This study is being conducted in conjunction with the North Dakota Telepharmacy Project and rural hospitals (n=17) including 10 in ND in the North Region Health Alliance (NRHA), and possibly another 7 owned by the Catholic Health Initiative (CHI). We developed with NASPA, a web-based reporting system for all rural hospitals participating in the Project, beginning with the nine initial remote hospital sites. The reporting system comprises two programs, the first to detect ADEs and medication errors (MER-ND) and the second to track quality measures (QM-ND). Funding includes the \$7,500 earmarked for ADE/medication error reporting and a \$2,700 NDBOP grant to fund the project. Types of ADEs/medication errors and quality measures will be monitored for 36 months.

Dr. Scott is conducting the **ASHP Survey of Hospital Pharmacy Services in Rural Hospitals**. We are using the ASHP national hospital pharmacy survey to assess the rural hospitals in North Dakota and components include: dispensing, monitoring, and patient education. This survey was sent to all critical access hospitals (CAH) in ND and will be repeated at 36 months. Response rate is 64.1% (25 of 39). Results will be compared with national data.

3. Humanistic outcomes

Status: Dr(s). Friesner and Scott conducted the **Patient Satisfaction Survey with the North Dakota Telepharmacy Project**. Two central pharmacies each with four remote telepharmacy sites administered the satisfaction survey to patients who received one or more prescriptions. A manuscript (JAPhA, 2009 49:48-5) was published. A review of this study has been published in Medscape (<http://www.medscape.com/viewarticle/719950>).

Dr. Albano's smoke-free policy and related research studies are included in **Appendix 1**.

Appendix 1.

Two technical Reports were submitted to Fargo Cass Public Health:

Albano, CA. Tobacco-Free Campus: A Collaboration between North Dakota State University (NDSU) and the College of Pharmacy Nursing and Allied Sciences (CPNAS) and Fargo Cass Public Health (FCPH). July 2010

Albano, CA. Evaluating Fargo/West Fargo Bars 2008 Smoke-Free City Ordinances: A Compliance Study. June 2010