North Dakota Telepharmacy Project: An Update

North Dakota Pharmacist Association Convention
April 23-25, 2010, Minot, North Dakota

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North Dakota Telepharmacy Project

- Overview & update
- Community & hospital telepharmacy models
- Central pharmacy hub site: ePharmacist Direct
Community pharmacy closings: A rural health care crisis

2000-2001:
- 26 closed
- 12 at risk
State law allows telepharmacy

2002-2003:
- NDTP created to restore & retain
- Temporary rules
- 1st HRSA grant

2003-2004:
- Permanent rules
- 12 restored or retained
- 2nd HRSA grant
2010: 72 pharmacies
24 central sites  51 retail pharmacies
48 remote sites  21 hospital pharmacies

36 MUA counties in ND, 2 in MN
40,000 rural citizens served
$12.5 million to rural economy
50-60 new jobs
50% increase in prescription sales to retail operation
Telepharmacy Rules

- Allow a pharmacist to supervise a pharmacy technician at a remote site to process medications
- Mandatory verification and approval of each prescription/order by pharmacist
- Mandatory educational counseling (retail)
- Required monthly inspections
- Remote site visits
Pharmacist Responsibilities

- Performs final check of technician product preparation
- Performs medication profile review
- Performs final order/prescription verification and approval and releases medication
- Provides professional consultations to patients, nurses, and physicians
- Remote site visits
Pharmacy Technician Responsibilities

- Obtains medication order/prescription
- Enters medication order/prescription into computer
- Performs product selection, preparation, packaging, and labeling
- Provides digital images of medication order/prescription, drug, and label for verification and approval by pharmacist
Grant: Office for the Advancement of Telehealth/ORHP/HRSA/DHHS

- Technology
  - Standard PC’s and computer monitors
  - Audio/video equipment for videoconferencing
  - Networking equipment for virtual private network
  - XGA resolution document imaging camera
  - Rx software and audio video link run in parallel
  - Connectivity
  - Installation
- Personnel
  - Pharmacy technician (retail)
  - Nurse cross training (hospital)
- Remodeling
- Travel
Cost of Technology

- $11,000 Audio/Video Equipment for teleconferencing
- $1,100 PC Computer
- $800 2 LCD Monitors
- $1,200 XGA Resolution Document Imaging Camera
- $200 Networking Equipment for VPN
- $200 Networking Equipment for Wireless
- $350 Cabling & USP Power Supply
- $1,700 Connectivity for 1 year
- $750 Equipment Installation

$17,300 TOTAL COST/site

(Add $5,000 for Hospital Mobile Cart)
Verification of prescription by pharmacist
Document camera
CIPRO 500 mg T (80) bid x 5 days

Enderlin Pharmacy
Rx# [blank]
Patient Name [blank]
CIPROFLOXACIN HCL 500MG TAB TAKE ONE TABLET TWO TIMES A DAY FOR 5 DAYS

Quantity 10 Date Filled: 08/18/04
No Refills
Mandatory patient consultation
North Dakota Telepharmacy Model: Hospital
Hospital Telepharmacy Models

- Community pharmacist delivers pharmacy services to rural hospital
- Hospital telepharmacy network – rural hospitals share pharmacist staffing
- Hospital pharmacist delivers services from home
- Mobile telepharmacy cart
- Central pharmacy hub site provides clinical pharmacy services to rural hospitals
Order entry
Verification of order entry at desktop workstation
Verification of drug, label & order at mobile cart workstation
Pharmacist consultation at nurses’ station
Central Hospital Pharmacy Hub
Site Model

- Central pharmacy hub in Fargo with fast, secure electronic connectivity
- Review and verify physician orders
- Remote order entry
- Facilitate medication adjustments and interventions
- Observe medication preparation
- Monitor the “Five Rights”
- Facilitate standardization of medication protocols
Remote Pharmacist Consultation Services

- For nurses, pharmacy technicians, and physicians
- For patients at their bedside
Benefits of Hospital Telepharmacy

- **Quality and safety** *(1999 IOM Report)*
  - 3.13 medication errors for every 1,000 orders written
  - 1.81 of these are significant medication errors
  - Pharmacists’ clinical expertise and service for the hospital

- **Quality of life and job satisfaction**
  - Increased recruitment and retention of pharmacists & technicians

- **Regulatory requirements**
  - The Joint Commission - pharmacy areas accessible only to pharmacy personnel
  - The Joint Commission, Institute of Medicine and CMS - challenge hospitals to improve patient safety
    - If possible, 24/7 pharmacist review of medication orders
Assessment and Quality Assurance Research

- **Economic Outcomes**
  - Cost Analysis Study
  - Determine Financial Viability of Telepharmacies

- **Clinical Outcomes**
  - Medication Dispensing Error Study
  - Compare Error Rates Between Telepharmacy & Traditional Pharmacy Services

- **Humanistic Outcomes**
  - Patient Satisfaction Study
  - Determine Level of Customer Satisfaction with Telepharmacy Services
Medication Error Study Findings

- National studies in community pharmacies: average error rate of 2%
- North Dakota telepharmacies: error rates are less than 1%
- After 45 months: a lower overall medication error rate and a slight difference between telepharmacies and the comparison group
Telepharmacy References

www.ndsu.edu/telepharmacy

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