



Dr. Michael C. Brown, Pharm.D.
Associate Professor of Pharmacy Practice
Chair, Department of Pharmacy Practice
Concordia University Wisconsin School of Pharmacy

Dr. Brown began his current position as Chair of the Department of Pharmacy Practice at Concordia University Wisconsin School of Pharmacy in July 2009. He also serves as an Associate Professor in the department. Prior to this, Dr. Brown served for 9 years at the University of Minnesota College of Pharmacy as an Associate Professor in the Department of Pharmaceutical Care and Health Systems and Director of the Pharmaceutical Care Learning Center. His instructional expertise includes patient interviewing and education, health record documentation, product preparation technique, drug literature evaluation, and pharmaceutical calculations. Dr. Brown's scholarship focuses on using innovation, including technology, to enhance students' education and assessment. His scholarship has been recognized nationally through the receipt of two Innovations in Teaching awards from the American Association of Colleges of Pharmacy in 2002 and 2006. He has also been recognized as a 2008 inaugural inductee into the University of Minnesota Academic Health Center's Academy for Excellence in the Scholarship of Teaching and Learning. Dr. Brown is a graduate of the University of Wisconsin School of Pharmacy where he received his B.S.-Pharmacy degree in 1995 and his Doctor of Pharmacy degree in 1998. He completed a one-year pharmacy residency at the William S. Middleton Veterans Affairs Medical Center in Madison, Wisconsin from July 1999 - June 2000.

Dr. Andrew P. Traynor, Pharm.D., BCPS
Assistant Professor of Pharmacy Practice
Director of Residencies and Practice Development
Concordia University Wisconsin School of Pharmacy

Andrew P. Traynor, Pharm.D., BCPS is Assistant Professor and Director of Residencies and Practice Development at Concordia University Wisconsin School of Pharmacy, where he teaches and coordinates in the Applied Patient Care Lab series as well as the Servant Leadership focus of the program. In his current role, he also works to coordinate the teaching skill development of pharmacy residents in the Milwaukee area and works with faculty and practice sites to bolster pharmacist involvement in patient-centered care. Prior to this, Dr. Traynor served for four years as Assistant Professor and Assistant Residency Director for the Ambulatory Care Residency Program at the University of Minnesota College of Pharmacy, Duluth campus. His instructional expertise includes the development of patient care and leadership skills. Dr. Traynor's scholarship has focused on access to pharmacy services in rural areas and the development of curriculum to prepare students to lead change in pharmacy. His leading change curriculum work has been recognized nationally through the receipt of an Innovations in Teaching award from the American Association of Colleges of Pharmacy in 2010. His rural pharmacy work has resulted in publications, research grants, testimony at government committee hearings and presentations to local and national audiences, including a plenary session at the 2009 National Conference on Medication Use in Rural America conference. In 2005, Dr. Traynor collaborated with the Minnesota Pharmacists Association to present and advocate the passing of the 2005 Rural Pharmacy Preservation Act. This act made pharmacists eligible for loan forgiveness for practice in rural areas and established a planning and development grant program to enhance patient care in rural areas. Dr. Traynor is a Doctor of Pharmacy graduate of the University of Minnesota and completed a two-year residency in ambulatory care at the University of Minnesota.

Concordia University Wisconsin School of Pharmacy

Doctor of Pharmacy Curriculum Overview

Case

- Mr. Rodgers is a 56 year old gentleman coming in to see his pharmacist today. Mr. Rodgers shares with his pharmacist during a medication follow-up that he is concerned about muscle pain in his legs that started about 2 months ago and has been getting progressively worse.

– Current Condition List and Medications

- High cholesterol - simvastatin
- High blood pressure – hydrochlorothiazide, diltiazem
- Previous heart attack - aspirin

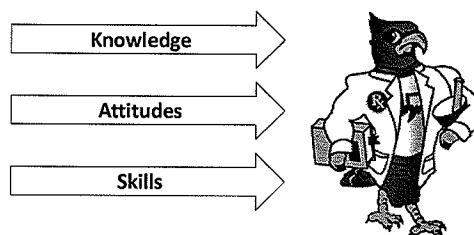
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CUWSOP Doctor of Pharmacy (PharmD) degree

- PharmD is current minimum requirement pharmacist licensure
 - 70 pre-pharmacy credits
 - 2-3 years to complete
 - Biology, chemistry, physics, communication, liberal arts / humanities, math and statistics
 - 148 professional degree credits
 - 4 years full-time to complete program


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Pharmacy Education



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CUW SOP Curricular Domains

Biomedical Sciences	Drug Delivery	Drug Action
Drug Information		Social and Administrative
Therapeutics	Applied	Experiential

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Pharmaceutical Science Domains

- Biomedical Sciences 3 courses, 13 credits
 - How does the human body work?
 - How do "bugs" work?
- Drug Delivery 4 courses, 11 credits
 - How do medications get into the body?
 - How do medications get out of the body?
 - How do interactions alter medications getting in and out of the body?
- Drug Action 3 courses, 11 credits
 - What do medications do while in the body? (molecular level)

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Administrative Science Domain

- Social and Administrative 6 courses, 15 credits
 - How does the U.S. Health Care System work?
 - How do pharmacists contribute as a partner in the health care provider team?
 - How do pharmacists manage personnel and the business of pharmacy?
 - What laws and regulations govern the practice of pharmacy?
 - What ethical dilemmas do pharmacists face and how might these be resolved?
 - What challenges do patients face in the health care system?
 - How do patients' culture, beliefs, and religion influence their use of medication and health care?
 - How do patients' economic status influence their use of medications and health care?

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Pharmacy Practice Domains

- Drug Information 2 courses, 4 credits
 - How does a pharmacist retrieve and apply information to make and help others make medication use decisions?
 - How does one practice evidence-based medicine?
- Therapeutics 6 courses, 18 credits
 - What do medications do while in the body? (patient, organ system level)
 - Once the diagnosis is made by the prescriber, what is the best medication to treat the condition?
 - How do individual patient's attributes (e.g., age, weight, other conditions, kidney and liver function) influence the selection of the best medicine?
 - What adverse effects do medicines cause and how can these be minimized?

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Therapeutic Conditions

Course	Focus
Pharmacotherapy I	Self-care
Pharmacotherapy II	Pain Cardiovascular Cerebrovascular Renal
Pharmacotherapy III	Infectious Disease Oncology Rheumatic Diabetes Thyroid Disease
Pharmacotherapy IV	Respiratory Neurologic Psychiatric
Pharmacotherapy V	Gastrointestinal Women's and Men's Health Hematologic Transplant

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Applied and Experiential Domains

- Applied 9 teaching labs, 17 credits
 - What skills must a pharmacist have to care for patients?
 - Communication and interpersonal skills
 - Patient interviewing
 - Health history retrieval
 - Medication list retrieval
 - New medication education
 - Care plan development and delivery
 - Case presentation
 - Clinical documentation
 - Sterile and non-sterile product preparation

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Applied and Experiential Domains

- Experiential 11 courses, 52 credits
 - 2000 hours
 - 48 full-time weeks in the field
 - Introductory Experiences
 - Integrated in first 3 years of program
 - 320 hours minimum
 - Four 2-week full-time blocks
 - Advanced Experiences
 - 42 weeks full-time
 - 1680 hours minimum
 - Entire 4th year of curriculum

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Experiential (Site) Training

- Hospital
- Community
- Ambulatory Care
- Long-term Care
- Hospice
- Research
- Professional Engagement/Advocacy
- Academia

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Challenges and Opportunities

Profession of Pharmacy

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Societal Impact of Problems Related to Medication Use

- 177,000,000,000
 - Amount of \$ spent on problems related to drug therapy
 - Physician/Urgent Care Visits \$ 14 billion
 - Added Medications \$ 3 billion
 - Emergency Room Visits \$ 6 billion
 - Hospital Visits \$ 121 billion
 - Long-term Care Stays \$ 33 billion
- 198,800
 - Number of people that die each year due to drug therapy related problems

Ernst FR et al. J Am Pharm Assoc 2001;41:192

Johnson JA, Bootman JL. Arch Intern Med 1995;155:1949

Societal Impact of Problems Related to Medication Use

- 1.30
 - Money spent to solve drug therapy problems for every dollar spent on drugs
- "The most expensive medication is the one that doesn't work appropriately."*

Ernst FR et al. J Am Pharm Assoc 2001;41:192

Drug Therapy Problems Identified

(n=5,136 patients)

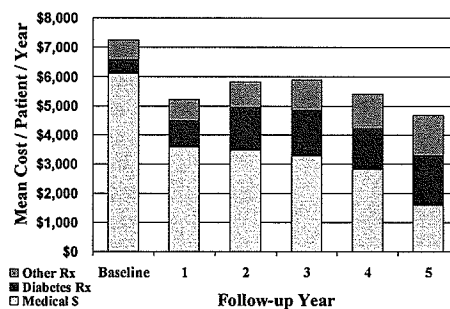
		Number of Drug Therapy Problems	% of Drug Therapy Problems
Indication	Unnecessary Drug Therapy	688	6%
	Needs Additional Drug Therapy	3,246	28%
Effectiveness	Ineffective Drug	882	8%
	Dosage Too Low	2,328	20%
Safety	Adverse Drug Reaction	1,704	14%
	Dosage Too High	602	5%
Compliance	Noncompliance	2,276	19%
Total		11,726	100%

Pharmaceutical Care Practice, A Clinician's Guide. 2nd edition McGraw-Hill Companies, 2004.

Pharmacists Can Help Solve Drug Therapy Problems

- Benefits
 - Health care costs savings
 - Improved patient outcomes
 - Asheville, NC
 - Minnesota Medicaid Medication Therapy Management (MTM) Program

Asheville Total Health Care Costs



Cranor CW, Bunting BA, Christensen DB. The Asheville Project: Long-term clinical and economic outcomes of a community pharmacy diabetes care program. J Am Pharm Assoc. 2003;43:173-84.

Minnesota Medicaid MTM Program

- Minnesota QCare Project
 - Optimal care for patients with diabetes for 2006
- Minnesotans achieving optimal care in 2004 without MTM
 - 6%
- Minnesotans receiving MTM achieving optimal care in 2007
 - 36%

Societal Impact of Problems Related to Medication Use

- 36,000
 - Number of people that die from influenza per year
 - Vaccines are drugs
 - WI Pharmacists can administer vaccines to patients 18 and older.
 - Percent of children 2-17 years who received an influenza vaccination during the past 12 months:
 - 33%

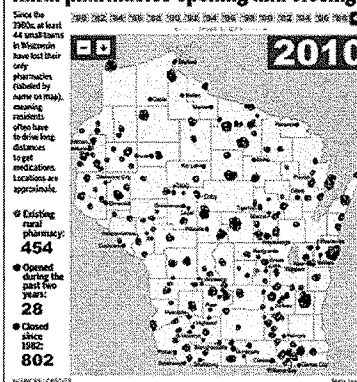
Thompson WW, Shay DK, Weintraub E, et al. JAMA 2003;289:179-86.
<http://www.cdc.gov/nchs/fastats/>

Opportunities Related to Positively Impacting Medication Use

- 275,000,000
 - Number of visits to a pharmacy in a week.
 - 114 million visits to emergency departments in a year
 - 902 million visits to physician offices in a year

Doucette WR, McDonough RP. JAPhA 2003;42(2):183-94.
<http://www.cdc.gov/nchs/fastats/>

Rural pharmacies opening and closing



Summary

- Pharmacists are the medication use experts.
- Our education is rigorous, comprehensive and preparing us to solve drug therapy problems.
- Drug therapy problems are dangerous and expensive.
- Pharmacists can work with the health care team to solve drug therapy problems.
- Nearly, the equivalent of the entire US population visits a pharmacy each week.
- We're losing pharmacies, especially in rural WI.
- Consider pharmacists, pharmacies and medication use in policy decisions.

Rural pharmacies opening and closing

Since the 1980s, at least 44 small towns in Wisconsin have lost their only pharmacies (labeled by name on map), meaning residents often have to drive long distances to get medications. Locations are approximate.

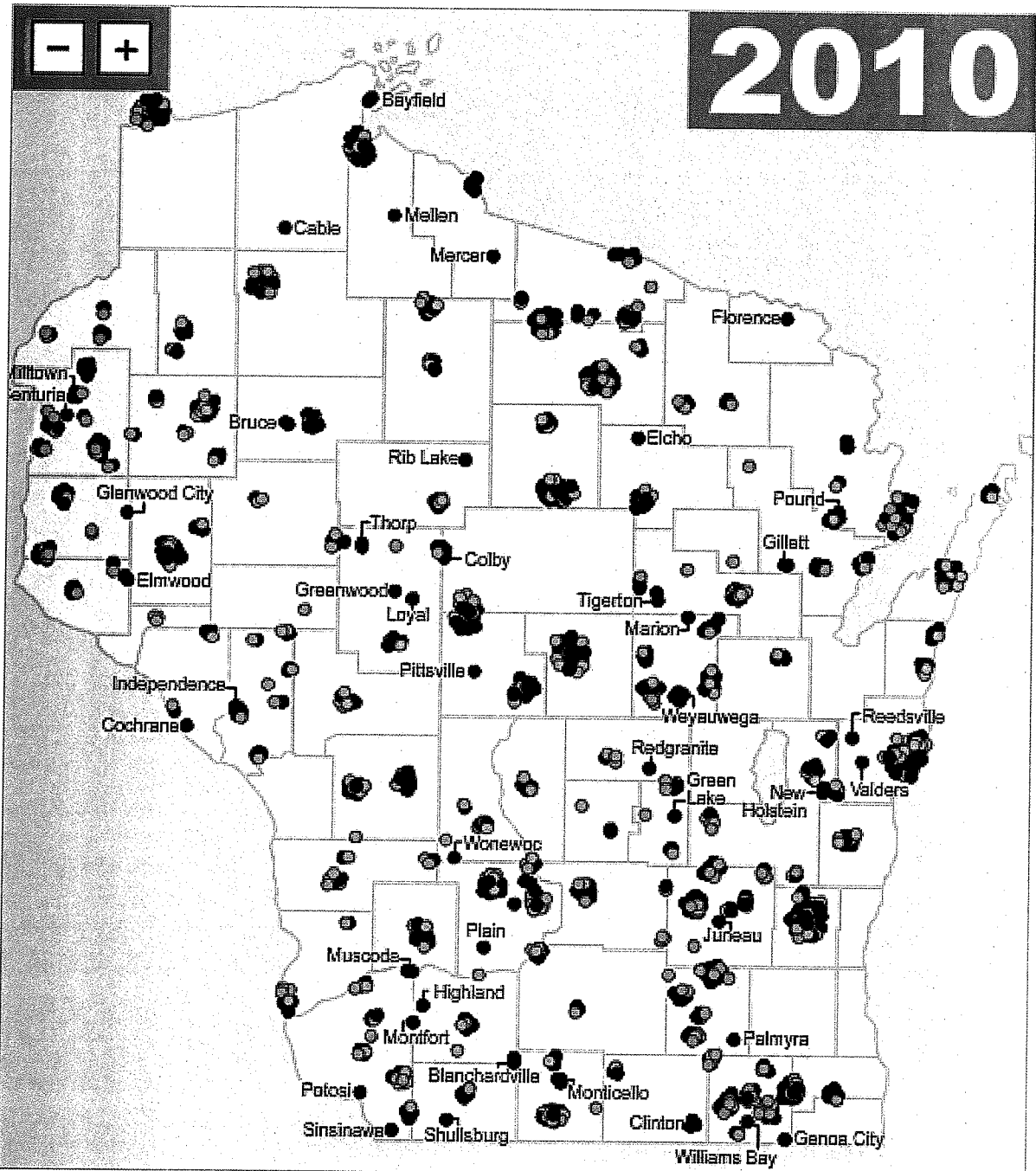
● Existing rural pharmacy:
454

● Opened during the past two years:
28

● Closed since 1982:
802

'80 '82 '84 '86 '88 '90 '92 '94 '96 '98 '00 '02 '04 '06 '08 ◀▶

← MOVE SLIDER →



SOURCES | CREDITS

State Journal