Doctor of Pharmacy Education
Program-Level Ability-Based Outcomes
North Dakota State University
College of Pharmacy, Nursing, and Allied Sciences

The mission of North Dakota State University College of Pharmacy, Nursing, and Allied Sciences is to **educate students and advance research and professional service**. To achieve this mission, the Pharmacy Doctorate curriculum must:

> "Prepare graduates with the professional competencies to enter pharmacy practice in any setting to ensure optimal medication therapy outcomes and patient safety, satisfy the educational requirements for licensure as a pharmacist, and meet the requirements of the university for the degree"; and
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> "Develop in graduates, knowledge that meets the criteria of good science; professional skills, attitudes, and values; and the ability to integrate and apply learning to both the present practice of pharmacy and the advancement of the profession. Graduates must be able to identify and implement needed changes in pharmacy practice and health care delivery."
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> (ACPE Accreditation Standards for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree. 2007. Standard No. 9: The Goal of the Curriculum)

The purpose of this document is to define a minimal set of clear, concise, program-level, ability-based outcomes for the Doctor of Pharmacy education at North Dakota State University College of Pharmacy, Nursing, and Allied Sciences. These outcomes are consistent with current ACPE standards and the American Association of Colleges of Pharmacy Center for the Advancement of Pharmaceutical Education (CAPE) Outcomes as well as other professional standards, guidelines, and codes.

Program-level, Ability-Based Outcomes are explicit statements of what students will be able to do as a result of the integration of knowledge, skills, and attitudes gained by completion of the Doctor of Pharmacy educational experience at North Dakota State University College of Pharmacy, Nursing, and Allied Sciences. They reflect the abilities of the students as a result of completion of the curriculum as a whole, rather than completion of a single course or course sequence. Furthermore, program-level Ability-Based Outcomes provide a basis to evaluate curriculum design and assess student competency.

Global competencies that must be achieved by graduates of the Doctor of Pharmacy curriculum are the abilities to: 1) Provide patient-centered care; 2) Manage and use resources of the health care system to provide, assess, and coordinate safe, accurate, and time-sensitive medication distribution and improve therapeutic outcomes of medication use; and 3) Promote health improvement, wellness, and disease prevention. Working cooperatively with patients, prescribers, and other members of an interdisciplinary team is central to all three global competencies.

The outcomes in this document are written to reflect competencies necessary of a **generalist, entry-level pharmacist**. A generalist, entry-level pharmacist is described as one who provides on-going, comprehensive, and coordinated patient-centered care to patients regardless of age, gender, disease, drug treatment category, or organ system in any practice setting (e.g. community, hospital, long-term care, home care) as an entry-level pharmacist.[1,2] Generalist entry-level pharmacists seek the expertise of specialist practitioners for the resolution of specific, complex drug therapy problems to ensure optimal drug therapy outcomes.[2]

It is important to note that students may achieve these ability-based outcomes with varying levels of competency as they progress through the curriculum. However, by graduation, all students should be able to competently perform the functions described in the outcomes at the level of a generalist, entry-level pharmacist entering pharmacy practice in any setting.

Glossary

Ability: The capacity to do something or perform successfully as a result of integrating knowledge, skills, and attitudes.

Attitude: A state of mind, manner, or disposition to act in a certain way towards an idea, object, person, or situation.

Knowledge: Acquired information necessary to perform the functions of a generalist, entry-level pharmacist.

Outcome: The results associated with instructional experiences

> **Ability-based outcome:** Explicit statement of what students will be able to do as a result of the integration of knowledge, skills, and attitudes gained from their instructional experiences.
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> **Course-level, ability-based outcome:** The knowledge, skills, and attitudes of students resulting from completion of a single course.
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> **Program-level, ability-based outcome:** Explicit statements describing what students will be able to do as a result of the integration of knowledge, skills, and attitudes gained by completion of the curriculum as a whole.

Skill: The ability to perform a task, usually gained through experience and training.

References

1. Cipolle RJ, Strand LM, Morley PC. *Pharmaceutical Care Practice: The Clinician's Guide*. 2nd ed. New York, NY: McGraw Hill; 2004.

2. Schwinghammer TL. Defining the generalist pharmacy practitioner. AJPE 2004;68(3):article 76.

ABILITY-BASED OUTCOMES

1. ATTITUDES AND VALUES

Students will integrate, apply, and reinforce professional attitudes and values across the curriculum.

Specific Competencies:

a. Demonstrate honesty and integrity in all situations.
b. Demonstrate sensitivity and tolerance for the values, dignity, and abilities of all individuals.
c. Make decisions and perform duties in accordance with legal, ethical, social, cultural, economic, and professional guidelines.
d. Self-assess learning needs and design, implement, and evaluate strategies to promote intellectual growth and continued professional competence in the areas of professional communication, scientific foundation, patient-centered care, systems management, and public health.

2. COMMUNICATION

Students will communicate in a caring and respectful manner in all situations using appropriate listening, verbal, nonverbal, and written skills.

Specific Competencies:

a. Communicate and collaborate with patients, caregivers, health care professionals, administrative and support personnel to engender a team approach to patient-centered care.
b. Demonstrate effective communication skills in interprofessional relationships to assure safe, efficient, cost-effective utilization of human, physical, medical, informational, and technological resources.

3. SCIENTIFIC FOUNDATION

Students will integrate and apply scientific knowledge of pathophysiology, medicinal chemistry, pharmaceutics, pharmacology, and pharmacokinetics across the curriculum.

Specific Competencies:

a. Use appropriate scientific terminology to convey concepts of pathophysiology, medicinal chemistry, pharmaceutics, pharmacology, and pharmacokinetics.
b. Demonstrate an understanding of scientific research and discovery.
c. Acquire, comprehend, synthesize, apply and/or evaluate information about biological, chemical, physical, pharmacologic, & pharmacokinetic properties of therapeutic agents.
d. Based on differences in chemistry, physical properties, pharmacology, pharmacokinetics, and pharmacogenomics, select pharmacotherapeutic regimens that minimize drug interactions, reduce side effects, and increase compliance.

4. PATIENT-CENTERED CARE

Students will provide evidence-based patient-centered care in cooperation with patients, prescribers, and other members of an inter-professional health care team taking into account relevant legal, ethical, social, cultural, economic, and professional issues that may impact therapeutic outcomes.

Specific Competencies:

a. Obtain, interpret and evaluate patient information to determine the presence of a disease or medical condition, assess the need for treatment and/or referral, and identify patient-specific factors that affect health, pharmacotherapy, and/or disease management.
b. Design, implement, monitor, evaluate, and adjust patient-centered care plans that are evidence-based.
c. Provide information regarding the selection, use and care of medical/surgical appliances and devices, self-care products, and durable medical equipment, as well as products and techniques for self-monitoring or health status and medical conditions.
d. Document patient-centered care activities to facilitate communication and collaboration among the health care team.
e. Retrieve, analyze, and interpret the professional, lay, and scientific literature to provide drug information to patients, caregivers, and other involved health care providers.

5. SYSTEMS MANAGEMENT

Students will manage and use resources of the health care system, in cooperation with patients, prescribers, other health care providers, and administrative and supportive personnel, to promote health; to provide, assess, and coordinate safe, accurate, and time-sensitive medication distribution; and to improve therapeutic outcomes of medication use.

Specific Competencies:

a. Accurately select, prepare, and dispense medications in a manner that promotes safe and effective use.
b. Accurately compound, store, and assure the quality of non-sterile and sterile dosage forms.
c. Manage human, physical, medical, informational, fiscal, and technological resources using relevant legal, ethical, social, cultural, economic, and professional principles/issues to assure efficiency and cost-effectiveness.
d. Apply patient and population-specific data, quality assurance strategies, and research processes to: 1) minimize medication misadventuring and optimize patient outcomes and 2) develop medication use policy, and design pharmacy benefits and formulary systems.

6. PUBLIC HEALTH

Students will promote health improvement, wellness, and disease prevention in cooperation with patients, communities, at-risk populations, and other members of an inter-disciplinary team.

Specific Competencies:

a. Deliver effective health promotion and disease prevention services to promote public awareness of health and disease (including poison control information, immunizations and health-related screenings).
b. Develop and implement population-specific, evidence-based disease management programs and protocols based upon analysis of epidemiologic and pharmacoeconomic data, medication use criteria and review, and risk reduction strategies.
c. Retrieve, analyze, and interpret the professional, lay, and scientific literature to provide drug information to the public.
d. Apply population-specific data, quality assurance strategies, and research processes to identify and resolve public health problems.

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