

College of Pharmacy

UNIVERSITY OF MINNESOTA

Professional Practice-Based Educational Outcomes

This document is a revised version of the College's 2000 Professional Practice-Based Educational Outcomes. Revisions include consideration of the 2004 Center for the Advancement of Pharmaceutical Education (CAPE) document and the Accreditation Council for Pharmacy Education (ACPE) Standards and Guidelines (adopted January 2006, effective July 2007). Headings are modified version of the 2004 CAPE headings. It is expected that Professional Practice-based Educational Outcomes are incorporated throughout the curriculum as appropriate. These outcomes do NOT prescribe proportions or amounts of content devoted to each outcome.

The College of Pharmacy's College Assembly has also approved General Ability-Based Educational Outcomes, which are detailed in a separate document.

- I. PHARMACEUTICAL CARE** Students will provide pharmaceutical care in cooperation with patients, prescribers, and other members of an interprofessional health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social, economic, and professional issues, emerging technologies, and evolving pharmaceutical, biomedical, sociobehavioral, and clinical sciences that may impact therapeutic outcomes.
- a. Students will be able to use a *systematic approach* to **conduct an Assessment** of a patient's drug-related needs and utilize the information obtained from the assessment to determine appropriateness of drug therapy, evaluate and identify problems.
 - b. Students will be able to integrate their knowledge, skills, and values as needed to design **and implement a patient's pharmaceutical care plan** to ensure that all drug therapy is indicated, effective, safe and convenient for the patient. Students will be able to design, implement, monitor, evaluate, and adjust pharmaceutical care plans that are patient-specific and evidence-based in order to prevent or resolve medication related problems.
 - i. Use appropriate critical pathways and clinical practice guidelines when appropriate for development of a patient's care plan.
 - ii. Optimize patient therapeutic self-management.
 - iii. Recommend medication doses and dosage schedules based upon relevant patient factors such as pharmacodynamic, physiologic, and pharmacokinetic parameters.
 - iv. Determine the appropriate drug delivery system for the patient based upon individual patient needs and characteristics.
 - v. Select appropriate medical goods and devices for the patient.
 - c. Students will be able to conduct **follow-up assessments** with their patients.
 - i. Monitor the outcomes.
 - ii. Identify additional drug-related problems.
 - iii. Evaluate and implement changes in the pharmaceutical care plan.
 - d. Students will be able to document the pharmaceutical care activity (goals, interventions, and outcomes) in the patient's medical record.
 - i. Record information related to the provision of pharmaceutical care to individual patients.
 - ii. Develop and maintain a comprehensive database of information relative to each patient.
 - iii. Document pharmaceutical care activity to facilitate communication and collaboration among providers.
 - iv. Communicate pertinent patient information from the patient's medical record.
 - e. Students will be able to communicate and collaborate with prescribers, patients, care givers, and other involved health care providers to engender a team approach to patient care.
 - f. Students will be able to retrieve, analyze, and interpret the professional, lay, and scientific literature to provide drug information to patients, their families, and other involved health care providers. Make referrals to other health care agencies or professionals where indicated.
 - g. Students will be able to carry out duties in accordance with legal, ethical, social, economic, and professional guidelines.
 - h. Students will be able to maintain professional competence by identifying and analyzing emerging issues, products, and services that may impact patient-specific therapeutic outcomes.



- II. SYSTEMS MANAGEMENT** Manage and use resources of the health care system in cooperation with patients, prescribers, other health care personnel to promote health and quality of life, to provide and coordinate safe, accurate, and timely medication distribution, and to improve therapeutic outcomes of medication use.
- a. Manage human, physical, medical, informational, and technological resources.
 - i. Apply relevant legal, ethical, social, economic, and professional principles/ issues to assure efficient, cost-effective utilization of human, physical, medical, informational, and technological resources in the provision of patient care.
 - ii. Communicate and collaborate with patients, prescribers, other health care personnel to assure efficient, cost-effective utilization of human, physical, medical, informational, and technological resources in the provision of patient care.
 - b. Manage medication use and distribution systems.
 - i. Apply patient- and population-specific data, quality assurance strategies, and research processes to assure that medication use and distribution systems minimize drug misadventuring and optimize patient care.
 - (1) Design, select, implement, and/or manage drug distribution systems for various practice settings.
 - (2) Select high quality drug products for patients, considering bioequivalence and therapeutic equivalence.
 - (3) Maintain records of drug storage, turnover, and security in drug distribution.
 - (4) Identify and report medication errors and adverse drug reactions to appropriate individuals and organizations.
 - (5) Manage the incidence of medication errors and adverse drug reactions.
 - ii. Apply patient- and population-specific data, quality assurance strategies, and research processes to develop drug use and health policy, and to design pharmacy benefits.
 - (1) Implement and manage formulary systems.
 - (2) Develop a business plan (budgets, pricing, contract development, and yearly reports) that assures financial success of the practice.
 - (3) Identify actual and potential personnel, technological, financial, or regulatory changes that may impact the practice of pharmacy.
 - iii. Communicate and collaborate with prescribers, patients, caregivers, other involved health care providers and administrative and supportive personnel to identify and resolve medication use problems.
 - c. Develop and manage appropriate product preparation systems for sterile and non-sterile compounding.
 - d. Carry out duties in accordance with legal, ethical, social, economic, and professional guidelines.
 - e. Maintain professional competence by identifying and analyzing emerging issues, products, and services that may impact management of human, physical, medical, informational, and technological resources in the provision of patient care.



III. Public Health Issues and Drug Related Needs of Society

- a. Provide drug information and education regarding drug-related issues to society at large and assure availability of effective health and disease prevention services.
 - i. Provide pharmaceutical information to health professionals and the general public.
 - (1) Determine the nature and specific aspects of the request.
 - (2) Use information resources available that are applicable to the specific question.
 - (3) Communicate and collaborate with prescribers, health care providers, administrators, policy makers, and members of the community or at-risk populations to identify and resolve public health problems.
 - (4) Respond to information requests and provide current and accurate literature research.
 - (5) Conduct epidemiological or survey-based research to answer specific questions and identify and analyze emerging issues, predict and serves that effect the efficacy and quality of disease prevention services.
 - ii. Design, develop, and present educational materials tailored to the needs and educational background of a given audience and conduct research to develop, identify, and resolve public health problems
 - (1) Identify the educational needs and background of the intended audience.
 - (2) Choose appropriate media to communicate effectively and optimize health education strategies.
 - (3) Choose health education strategies that are appropriate to the type of health care education program in accordance with legal, ethical, social, economic, and professional guidelines.
 - (4) Demonstrate effective oral and written communication tailored to the individual needs of the audience and type of setting.
 - (5) Evaluate the impact of an educational program via immediate surveys and monitor the behaviors/performance of program participants.
- b. Promote public awareness of health and disease by participating in the provision of disease prevention/detection programs to the public and take an active role in public health policy issues.
 - i. Maintain professional competence by identifying and analyzing emerging issues, products, and service that may affect public health policy with a goal to amend existing policies or develop additional policies that relate to pharmacy practice.
 - ii. Be able to participate in activities such as screenings, health fairs, and seasonal immunizations that provide disease prevention and detection to the public.

