ASHP Statement on Pharmacy Services to the Emergency Department

Position

The American Society of Health-System Pharmacists (ASHP) believes every hospital pharmacy department should provide its emergency department (ED) with the pharmacy services that are necessary for safe and effective patient care. Although the nature of these services will vary with each institution's needs and resources, the pharmacist's role may include

- Working with emergency physicians, emergency nurses, and other health care professionals to develop and monitor medication-use systems that promote safe and effective medication use in the ED, especially for high-risk patients and procedures,
- Collaborating with emergency physicians, emergency nurses, and other health care professionals to promote medication use in the ED that is evidence based and aligned with national quality indicators,
- Participating in the selection, implementation, and monitoring of technology utilized in the medication-use process,
- Providing direct patient care as part of the interdisciplinary emergency care team,
- Participating in or leading emergency-preparedness efforts and quality-improvement initiatives,
- Educating patients, caregivers, and health care professionals about safe and effective medication use, and
- Conducting or participating in ED-based research.

ASHP supports the expansion of pharmacy education and postgraduate residency training to include an emphasis on emergency care.

The purposes of this statement are to promote understanding of the pharmacist's contributions to the care of patients in the ED and to suggest future roles for pharmacists in providing that care.

Background

EDs across the nation treat approximately 114 million patients annually.[1] EDs are overcrowded because of a high percentage of uninsured patients, increased patient volume, increased complexity of patients presenting to the ED, and a hospital bed shortage that frequently results in the boarding of inpatients in the ED. The combination of interruptions, intense pressure, and a fast-paced environment can lead to medication errors and fewer error interceptions.[1] The Institute of Medicine (IOM) has estimated that as many as 98,000 people die each year as a result of medical errors and that adverse drug events (ADEs) occurred in 3.7% of hospitalizations.[2] Hafner et al.[3] reported a similar frequency of ADEs in the ED. Chin and colleagues[4] found that 3.6% of patients received an inappropriate medication in the ED and 5.6% were prescribed an inappropriate medication at discharge.

Pharmacy services in the ED have been documented since the 1970s.[5–8] These services initially focused on inventory control, cost containment, and participation on resuscitation teams but have since expanded to include clinical pharmacy services.[9] The effectiveness of clinical pharmacy services has been well documented in other settings. The participation of pharmacists in intensive care units and on internal medicine teams has improved patient outcomes by reducing preventable ADEs by 66% and 78%, respectively.[10–12] Similar effectiveness with pharmacist participation on emergency medicine teams has also been documented.[13] Despite this evidence, the 2005 ASHP national survey found that only 3.5% of the hospitals surveyed had a pharmacist assigned to the ED for any period of time, and only 5% had a formal policy requiring that pharmacists review and approve medication orders before administration in EDs.[14]

Pharmacy Services to the ED

All health care professionals share a commitment to and responsibility for providing safe and effective patient care. These shared objectives provide strong incentives for collaboration. Pharmacists and other health care professionals can collaborate in developing and monitoring medication-use systems that promote safe and effective medication use in the ED, including medication use in high-risk ED patients and procedures. Working together, pharmacists and other health care professionals can (1) ensure that medication use in the ED is evidence based, cost-effective, and adherent to national guidelines, (2) develop and implement emergency-preparedness plans and quality-improvement efforts, and (3) in many cases, foster the institution's education and research initiatives. The department of pharmacy should assume a leadership role in ensuring these collaborations.

When making decisions regarding pharmacy services to the ED, hospital leadership should consider the ED's need for medication therapy management services, medication-allergy assessment and clarification, medication-interaction assessment, reporting of and intervention on medication errors and ADEs, timely provision of drug information, and participation in formulary decision-making. Institutions should also keep in mind the Joint Commission's pharmacist first-review requirement[15] and National Patient Safety Goals[16]; the hospital's quality indicators related to medication selection, timing, and delivery; the potential effects of patient flow and technology on medication safety in the ED; and contributions pharmacists can make to continuity of care from ED admission through hospital discharge.

Patient Care. The IOM report *Hospital-Based Emergency Care: At the Breaking Point* recommends the inclusion of clinical pharmacists on the ED care team to ensure patients' medication needs are appropriately met, lead system changes to reduce or eliminate medication errors, and evaluate the cost-effectiveness of medication therapy for the patient and

hospital.[1] As part of the interdisciplinary ED care team, pharmacists can provide care to critically ill patients by

- Participating in resuscitation efforts,
- Providing consultative services that foster appropriate evidence-based medication selection,
- Providing consultation on patient-specific medication dosage and dosage adjustments,
- Providing drug information consultation to emergency physicians, emergency nurses, and other clinicians,
- Monitoring for patient allergies and drug interactions,
- Monitoring patient therapeutic responses (including laboratory values),
- Continuously assessing for and managing adverse drug reactions, and
- Gathering or reviewing medication histories and reconciling patients' medications.

In addition to the above, pharmacists can provide care to ambulatory patients in the ED by

- Modifying medication regimens based on collaborative-practice agreements for management of specific patient populations who return to ED;
- Providing vaccination screening, referral, and administration;
- Offering patient and caregiver education, including discharge counseling and follow-up; and
- Providing information on obtaining medications through patient assistance programs, care funds, and samples.

The boarding of patients in the ED until an inpatient bed becomes available poses challenges for patients, caregivers, and health care professionals. The department of pharmacy should work with the health care professionals involved in the care of these patients to provide a seamless medication-use process.

Emergency-Preparedness Planning. ASHP believes that all hospital and health-system pharmacists must assertively exercise their responsibilities to prepare for and respond to disasters.[17] ASHP has insisted that emergency response planners at the federal, regional, state, and local levels call upon pharmacists to participate in the full range of planning issues related to pharmaceuticals. Hospital emergency preparedness plans, including ED components, must be developed with the assistance of departments of pharmacy. Pharmacists should play a pivotal role in emergency preparedness planning and as a member of the health care team that provides care to victims. Because treatment of disaster victims almost always involves the use of pharmacologic agents, ensuring the efficacy and safety of the medication-use process is a natural role for pharmacists.[18,19]

Quality-Improvement Initiatives. The department of pharmacy can collaborate with other health care professionals on a variety of quality-improvement initiatives in the ED, including

- Guiding the development of evidence-based treatment protocols, algorithms, and clinical pathways that are congruent with nationally accepted practice guidelines and quality indicators,
- Assisting in the development, implementation, and assessment of various technologies used throughout the ED medication-use process,
- Conducting failure mode and effects analysis and root-cause analysis on error-prone aspects of the medication-use process,
- Participating in ED-based and hospitalwide committees (e.g., pharmacy and therapeutics, infection control, disaster) whose decisions affect medication use in the ED,
- Maintaining compliance with standards of national accrediting bodies, such as the Joint Commission, and
- Assisting in surveillance and reporting of adverse drug reactions.

Education. The pharmacy department should support the pharmacist's role in providing education and information to health care professionals, patients, and the public in ED service areas. Specific activities could include

- Conducting educational forums for health care professionals and students on topics such as emergency preparedness, disaster management, poisoning prevention and treatment, immunizations, and use of medications in the ED and emergency situations,
- Providing health literacy-sensitive education to patients and caregivers regarding medication use, disease state management, and prevention strategies, and
- Offering ED-based educational opportunities to pharmacy students and residents.

The ED offers an enormous number of services, activities, and opportunities to train future pharmacists in all aspects of the medication-use process. Students and residents could participate in longitudinal experiences in ED-based services such as clinics, community services (e.g., health fairs), and satellite pharmacies, studying topics as varied as cultural follow-up, ADE monitoring and reporting, or toxicology services. Introductory experiences could focus on student training on specific skills or competencies, such as taking medication histories, medication reconciliation, or discharge counseling. Residency training of pharmacists in emergency care would provide more rewarding educational experiences, foster pharmacist involvement in emergency medicine research, and ultimately improve the quality of patient care. Such residencies should meet ASHP-accredited residency quality standards.[20] Achievement of the goals, objectives, and expected outcomes of such training would be supported by around-the-clock or on-call clinical pharmacist services in the ED.

ED-Based Research. Research on and publications about ED pharmacy, though plentiful, usually focus on specific clinical settings, such as toxicology, drug interactions, and infectious disease epidemiology. The literature lacks a broad representation of the varied scope and range of ED pharmacy practices. ASHP believes that there should be more research on and publications regarding medication use in the ED and ED-based pharmacy activities. Studies that generate data on therapeutic, safety, humanistic, and economic outcomes of pharmacist-mediated process changes are urgently needed.

Professional Development of Pharmacists in Emergency Care

ASHP believes there should be an increase in the number of ED-based training opportunities for pharmacists, pharmacy students, and residents. Schools and colleges of pharmacy are encouraged to provide ED-based educational opportunities for students. Hospitals and health systems are encouraged to support ED-based educational programs that produce experts in the field. Postgraduate training of pharmacists will provide a pipeline of clinicians, educators, leaders, and scientists who are expert in and committed to quality emergency care.

Conclusion

Every pharmacy department should provide the ED with the pharmacy services required to ensure safe and effective patient care. These services must be tailored to match each institution's needs and resources, so pharmacy departments must decide the best way to safely provide medications to their ED patients. ASHP supports the expansion of pharmacy education and postgraduate residency training to include emphasis on emergency care in order to develop an adequate supply of pharmacists trained to deliver these essential pharmacy services.

References

1. Committee on the Future of Emergency Care: Hospital-based emergency care: at the breaking point. www.iom.edu/CMS/3809/16107/35007.aspx (accessed 2006 Sept 5).
2. Kohn LT, Corrigan JM, Donaldson MS, eds. To err is human: building a safer health system. Washington, DC: National Academy Press; 1999.
3. Hafner JW Jr, Belknap SM, Squillante MD et al. Adverse drug events in emergency department patients. *Ann Emerg Med*. 2002; 39:258–67.
4. Chin MH, Wang LC, Jin L et al. Appropriateness of medication selection for older persons in an urban academic emergency department. *Acad Emerg Med.* 1999; 6:1189–93.
5. Elenbaas RM, Waeckerle JF, McNabney WK. The clinical pharmacist in emergency medicine. *Am J Hosp Pharm.* 1977; 34:843–6.
6. Schwerman E, Schwartau N, Thompson CO et al. The pharmacist as a member of the cardiopulmonary resuscitation team. *Drug Intell Clin Pharm.* 1973; 7:299–308.
7. Kasuya A, Bauman JL, Curtis RA et al. Clinical pharmacy on-call program in the emergency department. *Am J Emerg Med.* 1986; 4:464–7.
8. Powell MF, Solomon DK, McEachen RA. Twenty-four hour emergency pharmaceutical services. *Am J Hosp Pharm.* 1985; 42:831–5.
9. Fairbanks RJ, Hays DP, Webster DF et al. Clinical pharmacy services in an emergency department. *Am J Health-Syst Pharm.* 2004; 61:934–7.
10. Leape LL, Cullen DJ, Clapp MD et al. Pharmacist participation on physician rounds and adverse drug events in the intensive care unit. *JAMA*. 1999; 282:267–70.
11. Kane SL, Weber RJ, Dasta JF. The impact of critical care pharmacists on enhancing patient outcomes. *Intensive Care Med*. 2003; 29:691–8.
12. Kucukarslan SN, Peters M, Mlynarek M et al. Pharmacists on rounding teams reduce preventable adverse drug events in hospital general medicine units. *Arch Intern Med.* 2003; 163:2014–8.
13. Ling JM, Mike LA, Rubin J et al. Documentation of pharmacist interventions in the emergency department. *Am J Health-Syst Pharm*. 2005; 62:1793–97.
14. Pedersen CA, Schneider PJ, Scheckelhoff DJ. ASHP national survey of pharmacy practice in hospital settings: Dispensing and administration—2005. *Am J Health-Syst Pharm*. 2006; 63:327–46.
15. Medication Management Standard MM.4.10–preparing and dispensing. In: Comprehensive accreditation manual for hospitals. Oakbrook Terrace, IL; Joint Commission on the Accreditation of Healthcare Organizations: 2006:MM–10.
16. Joint Commission. National patient safety goals. Available at: http://www.jointcommission.org/PatientSafety/NationalPatientSafetyGoals/ (accessed 2007 May 25).
17. American Society of Health-System Pharmacists. ASHP statement on the role of health-system pharmacists in emergency preparedness. *Am J Health-Syst Pharm.* 2003; 60:1993–5.
18. Burda AM, Sigg T. Pharmacy preparedness for incidents involving weapons of mass destruction. *Am J Health-Syst Pharm.* 2001; 58:2274–84.
19. Setlak P. Bioterrorism preparedness and response: emerging role for health-system pharmacists. *Am J Health-Syst Pharm.* 2004; 61:1167–75.
20. American Society of Health-System Pharmacists. ASHP residency accreditation regulations and standards. www.ashp.org/s_ashp/cat1c.asp?CID=3531&DID=5558 (accessed 2007 May 25).

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