CHAPTER 4

Documentation of Pharmacy Services

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KEY CONCEPTS

1. Documentation of pharmacists' interventions, their actions, and the impact on patient outcomes is central to the process of pharmaceutical care.
2. Unless pharmacists in all practice settings document their activities and communicate with other health professionals, they may not be considered an essential and integral part of the healthcare team.
3. Manual systems of documentation for pharmacists have been described in detail, but increasingly electronic systems are used to facilitate integration with other clinicians, payer records, and healthcare systems.
4. Integrated electronic information systems can facilitate provision of seamless care as patients move among ambulatory, acute, and long-term care settings.
5. Medication reconciliation, a process of ensuring documentation of the patient's correct medication profile, has become a central part of patient safety activities in recent years.
6. Systems of pharmacy documentation are becoming increasingly important models in the United States as the Medicare Part D Prescription Drug Plan and accompanying Medication Therapy Management Services are implemented and revised.
7. Electronic medical records and prescribing systems have several advantages over manual systems that will facilitate access by community pharmacists and their participation as fully participating and acknowledged members of the healthcare team.

As the opportunities to become more patient-focused increase and market pressures exert increased accountability for pharmacists' actions, the importance of documenting pharmacists' professional activities related to patient care will become paramount in the years to come. Processes to document the clinical activities and therapeutic interventions of pharmacists have been described extensively in the pharmacy literature, yet universal adoption of documentation throughout pharmacy practice remains inconsistent, incomplete, and misunderstood.

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1 Documentation is central to the provision of patient-centered care/pharmaceutical care.[1] Pharmaceutical care is provided through a "system" in which feedback loops are established for monitoring purposes. This has advantages compared with the traditional medication-use process because the system enhances communication among members of the healthcare team and the patient. Pharmaceutical care requires responsibility by the provider to identify drug/medication-related problems (DRPs), provide a therapeutic monitoring plan, and ensure that patients receive the most appropriate medicines and ultimately achieve their desired level of health-related quality of life (HRQOL).

To provide pharmaceutical care, the pharmacist, patient, and other providers enter a covenantal relationship that is considered to be mutually beneficial to all parties. The patient grants the pharmacist the opportunity to provide care, and the pharmacist, in turn, must accept this and the responsibility it entails. Documentation enables the pharmaceutical care model of pharmacy practice to be maximized and communicated to vested parties. Communication among sites of patient care must be accurate and timely to facilitate pharmaceutical care. As discussed by Hepler and Stand,[1] documentation supports care that is coordinated, efficient, and cooperative.

Conversely, failure to document activities and patient outcomes can directly affect patients' quality of care. There are several reasons for failure to document in the medication-use system, and they are related to the process of documentation, the specific data collected on a consistent basis, how documentation is shared (e.g., other pharmacists, healthcare providers, patients, insurers), and methods by which the data are shared.

In describing the medication-use system, Grainger-Rousseau et al.[2,3] have proposed eight essential structures, or elements, that must be in place for medication therapy to be both safe and effective (Table 4–1). When interventions are being planned to improve the medication-use system, all eight elements must be considered. When one or more of these eight essential elements are missing in the care of a patient, the patient is at high risk for experiencing a DRP. One of these elements (no. 7) is documentation and communication.

The lack of a universal reimbursement model for cognitive services provided by pharmacists can serve as a roadblock for initiating documentation; however, the opportunity to demonstrate contributions to patient outcomes and safety should serve as a catalyst for pharmacists and pharmacy residents/interns/students to document their services provided in all practice settings. The reasons why pharmacists should document their patient care activities, along with the specific information that should be recorded, as well as examples of documentation systems and forms that have been used successfully, are illustrated in this chapter.

TABLE 4-1 Eight Elements of a Safe and Effective Drug Therapy System

Element	Examples
Timely recognition of drug indications and other signs and symptoms relevant to drug use with accurate identification of underlying disease	"Correct" therapy for a late or incorrect diagnosis cannot improve a patient's quality of life
Safe, accessible, cost-effective medicines	Safe and cost-effective (efficient) drug products must be legally and financially available
Appropriate prescribing for explicit (clear, measurable, communicable) objectives	Explicit therapeutic objectives simplify the assessment of prescribing appropriateness and are necessary for assessing (monitoring) therapeutic outcomes
Drug product distribution, dispensing, and administration with appropriate patient advice	Including (a) ensuring that a patient actually obtained the medicine, (b) negotiating a regimen that the patient can tolerate and afford, (c) ensuring that a patient (or caregiver) can correctly use the medicine and administration devices, and (d) advising to empower the patient or caregiver to cooperate in his or her own care as much as possible
Patient participation in care (intelligent adherence)	The ambulatory patient or caregiver should consent to therapeutic objectives and know the signs of therapeutic success, adverse effects, and toxicities; when to expect them; and what to do if they appear
Monitoring (problem detection and resolution)	Many failures can be detected while they are still problems and before they become adverse outcomes or treatment failures
Documentation and communication of information and decisions	Communication and documentation are necessary for cooperation in a system
Product and system performance evaluation and improvement	Practice guidelines, performance indicators, and databases are a useful approach to achieving and maintaining improved system performance (outcomes)

From Grainger-Rousseau et al.[2] and MacKinnon.[3]

NEED FOR PHARMACIST DOCUMENTATION

The 1999 Institute of Medicine (IOM) report *To Err Is Human: Building a Safer Health System* detailed the finding that as many as 98,000 Americans die unnecessarily every year as a result of medical mistakes and errors, of which 7,000 deaths were attributable to medication errors, costing upwards of $9 billion.[4] In 2006, the IOM issued the report *Preventing Medication Errors*, focusing specifically on errors associated with medication use. It was estimated that a patient will experience, on average, more than one medication error per day while hospitalized. This report highlighted that handwritten prescriptions, orders, notes, and other methods of communication are fraught with the potential for misinterpretations/errors within the current medication-use process in the United States. Also, it is the "handoffs" in the delivery of care between providers and among systems that are problem prone. Furthermore, the 2006 IOM report suggested that the use of well-designed technologies, such as electronic medical records (EMRs)/electronic health records (EHRs), including computerized physician/prescriber order entry (CPOE) and clinical decision-support systems, are steps in the right direction to reduce the incidence of medication related errors.[5]

Through professional obligations, pharmacists in all settings (e.g., community, hospital, long-term care) play a pivotal role in ensuring the appropriate use of medications through prescription procurement or compounding, verification of the appropriateness of prescribed products (e.g., dose, duration, dosage form, and intended use) with prescribers, processing of prescription insurance-related claims, counseling of patients, and, ultimately, followup and monitoring. The ability to continue to support uncompensated professional services and act as a critical safety net with respect to medication use in the healthcare system is now at a critical juncture and requires the profession's immediate attention and subsequent action.

2 Documentation is the primary method to demonstrate value within an organized healthcare system. More importantly, it is the accepted method by which healthcare providers communicate with one another with respect to patient care decision making and clinical outcomes. Thus, if pharmacists in all practice settings are not communicating data/information routinely with other providers, they may not be considered an essential and integral part of the healthcare team. As Cipolle et al.[6] have suggested, "if you are not documenting the care you provide in a comprehensive manner, then you do not have a practice."

FORCES AFFECTING CLINICAL DOCUMENTATION

- The need for enhanced communication among healthcare providers
- A focus on reducing redundancy and the potential for fatal and nonfatal medical errors and preventable medication-related morbidity in all practice settings
- The emergence of EMRs/EHR in healthcare, thereby facilitating the sharing of data and aiding in clinical decision making
- The need to maintain secure patient and provider data while making this information available to other key individuals
- The desire of patients to communicate more regularly with healthcare providers and to obtain healthcare information in a more convenient manner

In the community setting, pharmacists may be one of the most accessible healthcare providers seen by patients on a regular basis (e.g., when medications are dispensed or over-the-counter products and diagnostics are purchased). By actively participating in the management of prescribed and nonprescribed medication products, as well as monitoring associated clinical outcomes, pharmacists can make a valuable contribution to patient care and demonstrate their impact on clinical and economic outcomes. Although such activities presently are occurring in community practice, the provision of timely documentation to other providers and patients alike often is lacking.

STRUCTURE AND ORGANIZATION OF DOCUMENTATION

3 A great deal has been written about documentation systems in the pharmacy literature, both in clinical practice and in education, but these systems tend to be individualized applications in which the transfer of data to other providers is nonexistent or quite limited.[7–10] Many documentation systems in pharmacy focus on the generation of reports for workload analysis or accreditation purposes. Unfortunately, the information gathered and analyzed in such applications does little, if anything, to improve patient care if it is not in a real-time format.

The principal purpose of clinical documentation is to provide a record of what a practitioner does, why it is done, and, when possible, what outcomes are achieved. It is essential to document

succinctly the patient-specific recommendations and actions taken by pharmacists and why these decisions were made. Functions performed by pharmacists—such as obtaining medication histories, counseling patients, performing patient assessment and monitoring, conducting medication regimen reviews, and providing medication information—are direct services that benefit patients, pharmacists, and other healthcare providers in various practice settings. The provision of these services by pharmacists and their associated outcomes need to be documented and communicated on a consistent basis. Documentation that occurs in a vacuum and devoid of real-time dissemination ultimately may not benefit patient care.

KEY CHARACTERISTICS OF CLINICAL DOCUMENTATION

- The primary purpose of clinical documentation is to provide a record of what a practitioner does, why it is done, and, where possible, what outcomes are achieved. It should be clear and concise yet comprehensive.
- Clinical documentation should provide a real-time trail of care provided to patients.
- Documentation systems and applications must be easy to use, portable, produce useful reports, be replicated by others consistently, and allow for knowledge sharing with other providers.

Although convenient and easy to use, paper documentation forms can be time consuming to complete accurately, are inefficient in terms of producing useful information, and often result in inconsistent reporting because of great variance in their format and use among practitioners. Efficient and effective documentation systems capable of capturing data supporting the involvement of the profession in direct patient care activities must be developed, tested in clinical settings, and used uniformly in practice. A survey of documentation practices was conducted in 106 community pharmacists providing expanded pharmaceutical care services in North Carolina in 2003.[11] The 48 pharmacists who responded spent an average of 14.9 hours per week providing patient care, with an average of 3.9 of these hours (approximately one fourth of patient care time) devoted to documentation. The majority of pharmacists (54%) were using a paper documentation system, whereas 27% reported using a commercially available computer system, and 15% used a personally developed computer system. The remaining 4% did not have a documentation system in place. The top five characteristics of an ideal documentation system identified by these pharmacists were comprehensiveness, affordable cost, time efficiency, ease of use, and ability to produce patient reports.

TYPES OF PATIENT INFORMATION TO DOCUMENT

A well-designed documentation system serves a multitude of purposes. It encompasses a complete and comprehensive archive of the patient's medication-related information and a record of pharmaceutical care interventions, care plans, and outcomes.[12] It also may serve as a legal record of the care that has been provided and as a useful backup in the event of third-party payer auditing.

PROBLEM-ORIENTED MEDICAL RECORD

Information within a patient's file must be organized in a fashion that facilitates quick retrieval. One commonly used and efficient method of organization is the problem-oriented medical record (POMR) format, whereby documents within a patient's file are organized according to a list of problems.[13] This process, pioneered by Dr. Lawrence Weed, consists of four major components: a defined database, a problem list, an initial plan, and progress notes. Each document is to be filed according to the source from which it comes, typically physician orders, nursing notes, and laboratory and diagnostic results. The clinical notes for each medical problem commonly are organized according to the SOAP approach: *s*ubjective and *o*bjective data, *a*ssessment, and therapeutic *p*lan.

Subjective data are related to the identified problem and associated symptoms as described by the patient himself or herself (or in some cases by the caregivers of the patient). *Objective data* include observations made and information acquired by the healthcare practitioner that is determined to be relevant to the identified patient problems. The *assessment* refers to the practitioner's clinical opinion or judgment about the problem based on subjective and objective data, as well as the practitioner's previous experiences related to similar clinical problems and patients. The *plan* is the course of action deemed appropriate for each identified problem given the data available to the clinician.

MEDICATION-RELATED PROBLEMS

Although the SOAP approach is very practical and systematic, it may not be appropriate for many pharmacists because of limitations with respect to consistent access to certain data elements available in many practice settings. Additional concerns relate to the redundancy created in a patient record if the pharmacy documentation is to become part of an existing record. Such patient medical records already are voluminous, and only succinct, essential information needs to be added. Thus, the contributions of pharmacist-generated documentation should be supportive of a patient's care plan, to assist in achieving defined therapeutic objectives and avoiding DRPs where appropriate.[14] The American Society of Health-System Pharmacists (ASHP) has published guidelines on the documentation of pharmaceutical care in the patient's medical record.[15]

DRUG/MEDICATION-RELATED PROBLEMS

- Untreated indication
- Improper medication selection
- Subtherapeutic dosage
- Overdosage/toxicity from the medication(s)
- Failure to receive medication
- Adverse drug reactions/events
- Interactions with the medication(s)
- Medication use without indication

When a pharmacist identifies a DRP, it may be listed and counted among the documents for an existing problem (e.g., subtherapeutic dose of a proton pump inhibitor for treatment of an ulcer), or, if the cause is not readily identifiable, it may be listed as a new problem. All patient files established by a pharmacist should contain similar basic elements. For example, to provide pharmaceutical care, such as identification of DRPs, pharmacists need specific knowledge about the patient, such as demographic characteristics, social and medical history, general appearance, health status, and third-party insurance or billing information.[12]

Currie et al.[16] devised a tool to assess the quality of pharmacists' documentation. These researchers created a list of data elements after a comprehensive literature search and input from practitioners and expert panels. The elements are divided into two groups: those essential to each individual patient encounter and those essential to a patient record (Table 4–2). The acquisition of each of these elements is critical to the provision of pharmaceutical care.

TABLE 4-2 Elements to Be Documented by the Pharmacist

Status of Element	For Patient Encounters[a]	For Patient Records
Essential	Patient identifier Date of encounter Reason for encounter Pharmacist identifier History of present illness Relevant prescription, over-the-counter, and alternative medications (history and compliance) Assessment (conclusions reached by the pharmacist after assessment of the drug therapy) Plan(s)/action(s) to correct problem(s) (listing of planned steps to achieve the goals established with the patient for the patient's drug therapy; goal of therapy should be implicitly or explicitly stated) Monitoring plan and followup (steps to monitor the outcomes of actions taken)	Patient identifier Date of birth Sex Contact information Allergies and adverse drug reactions Medical problem(s), current and past Prescription, nonprescription, and alternative medications (history and adherence) Payment method and economic situation
To be included if relevant	Past medical history Family history Social history (diet, alcohol, tobacco use, caregiver status, etc.) Objective information (e.g., vital signs, laboratory results, diagnostic signs or physical examination results)	Family history Social history Ethnic background Objective information (compilation of testing results from the pharmacy practice or other testing site) Special needs of patient (e.g., need for assistive devices, special educational needs) Nonmedication therapy

[a]The essential elements may be present in the chart and referred to in the note and not repeated in the encounter note itself. If there is a followup encounter, the note could be abbreviated.
From Currie et al.[16]

COMMUNICATION OF DOCUMENTATION AND FINDINGS

4 Once patient information has been documented appropriately, it should be made available to other healthcare providers for review when necessary. Without a universal electronic documentation system in place for pharmacists, various means of communication (e.g., mail, fax, phone, or e-mail) can be used to communicate with other healthcare providers and patients where appropriate. One patient may have several patient files at different sites of care (e.g., in the hospital, in various physicians' offices, and in community pharmacies), thus complicating the manner of communication. However, it is critical to determine what information must be passed on to fellow healthcare providers.

An integral part of providing pharmaceutical care is monitoring patient response to therapies and outcomes. To follow patients effectively throughout the course of their therapy, monitoring parameters/surrogate end points and desired outcomes must be determined and documented. Examples of monitoring parameters include reducing the blood pressure in a hypertensive postmyocardial infarction patient to <120/80 mm Hg and reducing the low-density lipoprotein cholesterol to <100 mg/dL. Properly documenting this information assists other pharmacists and healthcare professionals during followup appointments because the preestablished monitoring parameters and recommended changes (based on collected data from all providers) can be reviewed readily.

DOCUMENTATION AND SEAMLESS CARE

Although the exact terminology may vary, *seamless care* is a concept that has been viewed widely as a fundamental component of the optimal delivery of healthcare services. Several different health professions, including nursing, occupational therapy, and others, have published studies in which seamless care was provided within the context of their own practice environments.[17] Where seamless care is provided, effort is placed on developing multidisciplinary teams that work together across any transitions of care that may arise.[18]

5 In recent years, the average length of hospital stays has shortened; consequently, patients are being discharged into the ambulatory setting and long-term care facilities at a higher level of acuity. Regrettably, in most health systems, an effective means of communication regarding patients' medication therapy has not been established across the continuum of care. Such communication is vital because medications may be added to or discontinued from a patient's medication regimen during hospitalization, or dosing regimens may be altered. It is precisely these "handoffs" in care that the 2006 IOM report described as needing systematic attention.[5] Specifically, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and its Canadian equivalent (Canadian Council on Health Services Accreditation) now require the process of medication reconciliation (MedRec) to take place for hospitalized patients.[19] In their National Patient Safety Goals, JCAHO began requiring that medication reconciliation be provided for every patient, thus requiring that hospitals "accurately and completely reconcile medications across the continuum of care."[20] It includes obtaining a complete list of patient medications from the time of admission, through transfers and ultimate discharge from the hospital. This includes taking a medication history and ensuring that medications and doses are appropriate, and, if discrepancies (e.g., omissions, duplications, potential interactions) are encountered, that the prescriber is contacted and the issues resolved.

Patients, caregivers, community pharmacists, family physicians, and other community healthcare professionals may be unclear as to what medication changes have been made in the inpatient setting and the reasons for these changes. Subsequently, possible DRPs in the patient's medication regimen will not be identified or resolved in a timely fashion. In one study of 122 transfers from long-term care facilities to hospitals, a mean of 3.1 medications were changed on hospital admission.[21] A mean of 1.4 medications were changed on readmission to the long-term care facilities. These changes did not include the addition of a new medication to a patient's regimen. Medication changes that were assessed as having caused an adverse drug event occurred during 20% of transfers.

The community pharmacist, who may fill discharge prescriptions, generally is not privy to information regarding the patient's diagnosis and laboratory test results. In essence, the community pharmacist is uninformed and at a disadvantage to monitor for future DRPs that may result from previous medication regimen alterations. A study in the United Kingdom indicated that 95.7% of community pharmacists surveyed would not even know if one of their patients had recently been admitted to a hospital.[22]

Problems stemming from care that is not seamless are not limited to patients who are moving from a hospital to the community or long-term care setting. Equally important is the provision of seamless care from the community pharmacy to the hospital pharmacy setting and documentation or followup within the same setting. In Halifax, Nova Scotia, Canada, a study examining discrepancies between the physician's handwritten order, nursing transcription onto the handwritten medication administration record, and pharmacists' order entry into the electronic profile found that approximately one in eight medication orders had a discrepancy.[23] In Iowa, a review of 754 care plans submitted by 160 community pharmacists

found that only 31% of care plans documented actual followup.[24] Overall, 42.2% care plans documented intent to followup, but either no followup occurred or it was not documented, and the remaining 26.8% of care plans did not document any intention for followup.

STUDIES INVOLVING THE EVALUATION OF DOCUMENTATION BY PHARMACISTS ACROSS THE CONTINUUM OF CARE

Several studies evaluating the impact of the provision of proper documentation by pharmacists across the continuum of care have been conducted in Australia, Canada, the United Kingdom, the United States, and beyond. The examples presented are not meant to be a comprehensive list of all such activities but rather are reviewed to give an indication of the state of pharmacist documentation in each country.

Pharmacist-Directed Documentation Initiatives in Australia

Pharmacist-directed documentation activities in Australia have been the center of considerable attention in recent years. The need for these services has been articulated in the *Australian Journal of Hospital Pharmacy*: "…hospital-based services developed with little thought to what happens to patients before they come to the hospital and after they leave. This has placed hospital pharmacy in a dangerously isolated position," and "presently Australia has no system that effectively manages information relating to medications. This lack of timely and accurate medication information remains a significant barrier to ensuring the quality use of medications by the community at large."[25] The Department of Pharmacy at the Royal North Shore Hospital in Sydney reported on a practice guide for the provision of pharmaceutical care that, among other things, helped to educate the patient at the time of discharge to promote seamless care as the patient returned back into the community.[26]

The Pharmacy Continuity of Care Project, a study by the Faculty of Pharmacy at the University of Sydney, promoted the use of patient discharge forms that were sent by the hospital pharmacist to (a) the community pharmacist and (b) case conferences between these two individuals and the patient's general practitioner.[27] A study at three Adelaide hospitals randomized patients to receive discharge planning from a pharmacist transition coordinator or usual care prior to discharge to a long-term care facility.[28] The discharge planning intervention consisted of a medication summary faxed to the community physician and pharmacist outlining changes that had occurred in hospital and future monitoring that would be required. The transition coordinator also coordinated a medication review performed by the community pharmacist within 14 days of discharge and a case conference with himself/herself and the facility's care providers within one month of discharge. At 8-week followup, the study investigators found that use of appropriate medications was maintained in the intervention group but declined significantly from baseline in the control group.

One of the more significant developments in Australia has been the publication of the Australian Pharmaceutical Advisory Council's Guiding Principles to Achieve Continuity in Medication Management. This 2005 publication describes 10 principles recommended to be followed to help to attain a high level of seamless pharmaceutical care (Table 4–3).[29]

TABLE 4-3 Ten Principles of the Australian National Seamless Care Guidelines

Principle 1	Health service managers should ensure that systems support, and resources are provided for, medication management continuum.
Principle 2	Health service managers should participate in all aspects of medication management in partnership with consumers.
Principle 3	Health service managers should be accountable for ensuring implementation of medication management continuum services.
Principle 4	Accurate medication histories should be obtained and documented at the time of admission.
Principle 5	Medicines should be assessed throughout the episode of care to ensure Quality Use of Medicines (QUM).
Principle 6	Treatment plans should be developed and reviewed during a patient's hospital stay and form an integral part of the care plan.
Principle 7	Sufficient information in an appropriate manner should be supplied to patients in order for them to effectively use their medications.
Principle 8	Consumers should be provided with adequate supplies of medications.
Principle 9	All relevant details of information should be communicated to the patients' healthcare provider(s) responsible for ongoing care.
Principle 10	Healthcare providers to whom the patient's care is transferred are responsible for implementing policies and procedures to ensure that continuum has been achieved.

From Australian Pharmaceutical Advisory Council. Guiding Principles to Achieve Continuity in Medication Management. Canberra, Australia: Publications Production Unit, Commonwealth Department of Health and Family Services, 2005.

Pharmacist-Directed Documentation Initiatives in Canada

The profession of pharmacy in Canada also has been active in documentation activities across the continuum of care. Riley and Wozny[30] developed a fax document for transfer of information to the family physicians and community pharmacists of 70 hemodialysis patients in Ontario. The document consisted of contact information, a patient's medication and allergy list, a list of medications to avoid or adjust for renal dosing and a survey to evaluate the project. Of those who responded to the survey, 95% of physicians and 81% of pharmacists would use the information to update their own records, and 95% of physicians and 93% of pharmacists believed the fax document improved communication from the dialysis unit. Cesta et al.[31] developed the Electronic Medication Information Transfer Tool (EMITT) to facilitate the transfer of medication information between healthcare professionals in different practice settings. Patient outcomes were not measured as part of their feasibility study, but the authors estimated that 348 DRPs potentially could have been prevented in 40 discharge letters that were created using the EMITT. Other researchers have evaluated the use of hospital discharge prescription summary forms in Halifax, Nova Scotia,[32] and Montreal, Quebec, Canada.[33] Seamless care pilot projects also have been undertaken in Calgary; Alberta; Montreal, Quebec; and Pictou County, Nova Scotia, Canada.

A randomized controlled study was carried out at the Moncton Hospital in Moncton, New Brunswick, Canada, to determine the impact of a pharmacist-directed seamless care program on economic, clinical, and humanistic outcomes and processes of care.[34] A total of 253 patients (119 in the control group and 134 in the intervention group) completed the study. A mean of 3.59 drug therapy problems per intervention patient was identified, and 72.1% of these problems were scored as having a *significant* or *very significant* clinical impact level. Participating community pharmacists who were surveyed believed that seamless care service helped them to provide enhanced pharmaceutical care and improved efficiency in their pharmacies. The study researchers argued that a pharmacist-directed seamless care service can effectively resolve many medication therapy problems and improve medication-related processes of care in hospital and community pharmacies. On a national level, the Canadian Society of Hospital Pharmacists and the Canadian Pharmacists Association have operated a joint task force on seamless care for several years.

Pharmacist-Directed Documentation Initiatives in the United Kingdom

In the United Kingdom, some health researchers have concluded that the medication-use system requires seamless care services to improve

communication and safety. A study conducted in a large general hospital in England showed that breakdowns in the present discharge system can create problems for patients.[35] Thus, 13% of participants had at least one discrepancy in their take-home prescriptions transcribed from the discharge notes. When the discharge letter was compared with the discharge notes, 27% of the patients' letters had a medication discrepancy. The researchers found that the mean time for the discharge letter to arrive from the hospital to the general practitioner's office was 26.9 days, and half took longer than 32 days. At followup, 57% of patients were experiencing a DRP that by clinical pharmacists' standards required intervention.

The results of the completed surveys from 163 UK Trust Hospitals showed that a wide variation still exists among various institutions in their ability to meet patients' needs.[36] Pharmacists were involved in the preparation of discharge prescriptions in only one third of the hospitals, and their impact there was close to negligible. Alarmingly, 95% of institutions did not have their clinical pharmacists communicating with their community counterparts. The authors made the following recommendations: implementation of medication compliance charts, telephone medicine help lines, additional copies of discharge prescriptions for the general practitioner and the community pharmacist, regular involvement of the pharmacist in preparation of discharge medications (checking against the ward chart), and directly faxing of copies of the prescriptions (complete with reasons for changes) to the general practitioner's office.

Studies that have evaluated pharmacist-directed seamless care services in the United Kingdom have had mixed results. In a randomized controlled trial of 362 patients that evaluated the effectiveness of a pharmacy discharge plan in hospitalized older adults, no impact on patient outcomes was found.[37] A smaller study of 32 patients found a positive impact on unintentional medication discrepancies in the intervention group.[38] A randomized controlled trial comparing the use of a pharmacist transition coordinator to usual discharge care also has been conducted in the United Kingdom.[39] Patients in the intervention group were significantly more knowledgeable about their medication therapy and experienced significantly less medication discrepancies at discharge.

The Royal Pharmaceutical Society of Great Britain has recently published guidelines for pharmacists' documentation[40] and discharge planning.[41] Pharmacists in the United Kingdom also have begun to take an expanded role in primary care groups, working closely with physicians and nurses.

Pharmacist-Directed Documentation Initiatives in the United States

Many of the activities in the United States in this area relate to initiatives regarding the expanded scope of practice of pharmacists in the hospital, community, and managed care settings. Most states now allow pharmacists to enter into collaborative prescribing agreements with physicians. The ASHP Statement on the Pharmacist's Role in Primary Care advocates a larger role for pharmacists, including participation in multidisciplinary reviews of patients' progress, initiating or modifying medication therapy on the basis of patient responses, and performing limited physical assessments.[42] The American College of Physicians–American Society of Internal Medicine put forward a pharmacist's scope of practice, including the pharmacist's role in collaborative practice with physicians; pharmacist involvement in patient education and hospital medical rounds; pharmacist prescribing, immunizing, and therapeutic substitution; and reimbursement for pharmacists' cognitive services.[43] This expanded scope of practice also has legal implications. As Brushwood and Belgado[44] explain, "The expanding availability of knowledge will expand professional responsibilities—and legal duties will not be far behind." Despite the expanding role of pharmacists, a 2006 survey of hospital pharmacy practices found that only 81.3% of hospitals employed pharmacists who routinely documented medication therapy monitoring.[45] Overall, 70% of these pharmacists documented in the pharmacy profile, but only 63.5% of pharmacists documented in the patients' medical record to be viewed by other healthcare professionals.

Some pharmacist-directed seamless care evaluation studies have been conducted in the United States. Community and ambulatory care pharmacists who received a referral form from the hospital pharmacist when patients were discharged believed that the form helped them to tailor patient counseling to the needs of the patients and positively affected the pharmacist–patient relationship.[46] One study that evaluated the impact of a hospital pharmacist providing pharmaceutical care at the time of discharge revealed the service to be well received by patients.[47] Kramer et al.[48] reported an improvement in patients' satisfaction with the discharge process after use of an electronic medication reconciliation system by pharmacists and nurses. Kuehl et al.[49] reported on a novel pharmacist-directed seamless care program among ambulatory care, hospital care, and long-term care pharmacists in five pharmacies in the midwestern United States. In this study of 156 patients, patient-specific information significantly increased the number of interventions by the hospital and ambulatory care pharmacists.

One goal of the ASHP 2015 Initiative is to "increase the extent to which health systems apply technology effectively to improve the safety of medication use."[50] ASHP has defined several objectives to aid in achieving this goal, including increased use of CPOE, increased pharmacy use of EMRs, and improved information access and communication across settings of healthcare. As of 2005, pharmacists in 19% of health systems were transferring information to promote seamless care of patients with complex medication regimen. The objective is to increase this number to 70% by the year 2015.

PHARMACY-TO-PHARMACY COMMUNICATIONS

Most research projects to date have focused on the transfer of information from hospital pharmacies to community-based facilities primarily involving the general practitioner and the community pharmacist. These projects have clearly addressed a real need. In a survey of community pharmacists in the United Kingdom, almost one third had never seen a copy of the discharge information provided to patients and their general practitioners.[22]

Far fewer initiatives have focused on the transfer of information from the community pharmacist to other members of the healthcare team. This is unfortunate because the community pharmacist often possesses valuable patient information by virtue of seeing the patient regularly for prescription refills and other self-care needs. Developing stronger ties between the community pharmacy and other sites of care can only serve to increase communication to improve the quality of patient care delivered.

PHARMACY COMMUNICATION WITH PHYSICIANS

Communication between the pharmacists and a patient's physician or physicians is crucial to the delivery of high-quality care, but such relationships can be threatened by perceived turf battles and misunderstandings. As discussed by Buerger,[51] improving the pharmacist–physician relationship requires effort and understanding on the part of both parties. Various stresses inherent in healthcare delivery make effective communication rather challenging in certain situations. To strengthen ties between physicians and pharmacists, all parties should focus on improving their communication skills and exercising their conflict-resolution skills.[51]

Pharmacists are trained to assess prescription records and profiles, review relevant clinical and laboratory data, and elicit pertinent patient medical histories to assist in the clinical management of patients. One pharmacy-student intervention study involving over 30,647 interventions in both community and hospital locations reported that a patient condition warranted medical attention in 4.9% of cases, and a laboratory value warranted attention 6.1% of total interventions.[10] In this study, acceptance of pharmacy recommendations (or clarification achieved) was 71%. Similar findings were corroborated in an Internet-based study of pharmacy students resulting in 5,031 interventions: the rationale was a referral for a medical attention in 4.7% of interventions in the community pharmacy setting, and a laboratory value warranted further attention in 9.8% of hospital interventions.[52] The majority (87.1%) of all recommendations provided were accepted.

Pharmacists are in an opportune position to refer patients back into the healthcare system for attention they may require, as well as identifying laboratory data that necessitate further assessment. Hence, pharmacists can serve as an important ally to patients and their medical providers. Although such oversight by pharmacists does occur, all too often the process by which pharmacists in community and hospital settings document and communicate their clinical interventions as described is all but absent. Pharmacist-initiated contributions to a patient's care plan, thereby assisting to achieve defined therapeutic objectives and/or identification or avoidance of DRPs where possible, must be documented and shared alike.

PHARMACY COMMUNICATION WITH PATIENTS

In this era of an ever-increasing desire on the part of patients to be involved in their own healthcare, an increasing number of self-care products (e.g., diagnostic, pharmaceutical, and nutraceutical) in the marketplace, and advanced communication technologies available to consumers (e.g., cell phones, personal digital assistants [PDAs], electronic mail, and the Internet), community pharmacists have a unique opportunity to assume a pivotal role among other healthcare providers and patients in communicating, interpreting, and monitoring for the desired health outcomes. While not commonplace today, pharmacists should begin to communicate more regularly with their patients with respect to their healthcare needs and, where possible, should refer those patients back to healthcare providers when necessary. For example, how often has a patient presented himself or herself to a community pharmacy describing a condition or possible DRP in which the recommendation of the pharmacist following a brief triage is to refer the patient to his or her physician or other caregiver (e.g., dentist or optometrist) for followup? Unfortunately, this interaction seldom involves documentation by the pharmacist to the patient or other provider involved, and more than likely, followup with either party is by serendipity. This situation in the medical community would result in what is commonly known as a *referral* from one healthcare provider to another. Anecdotal reports of patients who presented to a pharmacist and described significantly negative health outcomes for whom death possibly was averted because of this interaction with the pharmacist are clear. However, such actions commonly went undocumented and therefore were not reported or traceable and possibly underappreciated or undervalued. Many patients have not experienced such formal and consistent documentation from the pharmacy profession, and it would prove valuable. These activities, once they are consistent and valued by patients and providers alike, may begin to set the parameters for patient payments directly to pharmacists while ultimately contributing to beneficial health outcomes of the patients served.

BILLING CONSIDERATIONS AND DOCUMENTATION SYSTEMS

MEDICAL BILLING SYSTEMS IN THE UNITED STATES

6 The Centers for Medicare and Medicaid Services (CMS) universal claim form is used by healthcare providers for third-party billing related to the provision of services. This form is required by Medicare and other third-party payers in the United States and uses the *International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)* coding system by providers for reimbursement. This system is becoming increasingly important as Medicare Part D (oral prescription medication) coverage is implemented. Categories 1 to 15 (codes 001–779) identify diseases and related common medical conditions. Category 16 (codes 780–799) designates symptoms, signs, and ill-defined conditions. Category 19 (codes 800–999) relates to injury and poisoning. Each category contains additional codes that provide greater specificity and precision in terms of the condition or illness. There are two additional subsets of codes: V codes, which are used to classify routine screening examinations, and E codes, which are related to environmental injury or illness.

Use of current procedural terminology (CPT) codes or the Common Procedure Coding System is required for completion of the universal claims form. CPT codes were created to be a listing of descriptive terms and identifying codes for medical services and procedures performed. Codes 99201 to 99205 are used for an office visit with a new patient, and codes 99211 to 99215 are used for an office visit with an existing patient. The differentiation among codes used is based on the intensity of service provided by the healthcare provider and the time involved. Although not used commonly in pharmacy, these codes have been used by pharmacists to document the provision of patient-centered services in ambulatory and community settings when completing the universal claims form for billing purposes to third-party payers.

In January 2006, following the approval of the American Medical Association (AMA) CPT Editorial Panel, the pharmacy profession received three billing codes for pharmacists to use to bill third-party payers when providing medication therapy management services (MTMS). Such MTMS are broadly defined and may include the following provided by a pharmacist: providing education and training; monitoring medication compliance; modifying therapy; administering medication; formulating a treatment and/or followup plan; managing medication problems or complications; providing recommendations for disease prevention; and/or evaluating the patient's knowledge of medication and willingness to implement recommendations. MTMS may be initiated at the request of the patient and/or caregiver, payer, pharmacist, and/or other healthcare provider.

These codes are used to bill any health plan that provides a benefit for MTMS, including those covered under the Medicare Part D Prescription Drug Benefit. The codes are as follows: code 99605: a first-encounter service performed face to face with a patient in a time increment of up to 15 minutes; code 99606: for use with the same patient in a time increment of up to 15 minutes for a subsequent or followup encounter; and code 99607: to bill for additional increments of 15 minutes of time to either of the preceding codes. Similar to the documentation requirements for other healthcare providers, the following elements are required to verify the service provided and are dependent on the type and level of MTMS: review of the pertinent patient medical history; medication profile (prescription and nonprescription); interventions and recommendations for optimizing medication therapy; referrals; treatment compliance; communications with other healthcare professionals; administrative

functions (including patient and family communications) relative to the patient's care; and/or followup care.

PHARMACY BILLING SYSTEMS

Recognizing issues related to nomenclature, compatibility, and transmission of data, some organizations have created guidelines to assist in the standardization of documentation systems for pharmacy. Historically, these efforts have centered on the outpatient arena, focusing primarily on prescription claims related to the procurement and dispensing of prescription pharmaceutical products to patients from community pharmacies and by mail order. Founded in 1976, the National Council for Prescription Drug Programs (NCPDP) developed standards that allow for electronic data interchange (EDI) among providers of pharmaceuticals (e.g., pharmacies) and third-party administrators (e.g., pharmacy benefit management organizations) primarily for the adjudication (i.e., financial approval) of prescriptions. This adjudication historically has centered on the assessment of the formulary status of a prescribed medication, resulting in verification or denial of the prescription and resulting payment to the dispensing pharmacy.

The payment formula for pharmaceuticals (and not professional services) typically has included a discounted cost of ingredients [e.g., average wholesale price (AWP) or average manufacturer price (AMP) discounted by a given percentage] plus a dispensing fee. The dispensing fee, often in the range of $1 to $2 per prescription, is paid irrespective of the pharmacist time involved in processing the prescription (procuring/compounding the product, verifying with the prescriber patient- and product-specific concerns identified, addressing insurance-related claims issues, and conducting patient counseling/followup monitoring).

Having a reimbursement system tied only to product dispensing is fraught with problems. For example, in community pharmacy practice, if a pharmacist provides a recommendation to discontinue therapy and this recommendation is followed, no reimbursement to the pharmacy will take place because no product would be dispensed (although the third-party administrator and the patient would save money). However, if the recommendation is ignored and the product is dispensed, the third-party payer would incur a cost related to dispensing the prescription. Clearly, the issue related to the appropriateness of the prescription is somewhat lost.

Efforts by the NCPDP and other professional organizations such as the National Community Pharmacists Association have recognized the need for allowing the transmission and adjudication not only of electronic prescriptions but also of requests for refills and other transactions among prescribers (e.g., physicians) and pharmacists. As a result, various initiatives have been undertaken to allow for such levels of transmission among pharmacists, physicians and other healthcare providers, payers, and, ultimately, patients.

ROLE OF TECHNOLOGY IN CLINICAL DOCUMENTATION

7 Emerging technologies will have a profound effect on healthcare, thus offering opportunities for the pharmacy profession in maintaining constant vigilance related to the procurement, preparation, and distribution of pharmaceuticals and allowing for more consistent provision of pharmaceutical care. Digital documentation, such as computer-stored medical records or EMRs/ EHRs, is one vehicle that, if adapted universally, would assist in enhancing the communication among providers in all settings. In the United States, EMRs and CPOEs must be implemented by 2009 under certain provisions of the new Medicare Part D regulations, and this is expected to drive adoption of the new technologies by prescribers. Significant benefits to EMRs have been described: (a) improved logistics and organization of the medical record to speed care and improve efficiency, (b) automatic computer review of the medical record to limit errors and control costs, and (c) systematic analysis of past clinical experience to guide future practices and policies.[53] The use of EMRs that include pharmacy-specific data (e.g., history of medication usage, both prescription and over the counter; history of refills; assessment of adherence and persistence; and other information deemed appropriate for inclusion by pharmacists) allows for improved communication, enhanced decision making, and the ability to follow up on outcomes associated with care plans.

Advances in technology can facilitate the generation and transfer of patient documentation, though patient confidentiality and accuracy of data remain concerns. As more pharmacies use the Internet as a means of communication, information can be transferred quickly and accurately over greater distances. Handheld computers and specialty software allow healthcare practitioners to document information in an electronic format that can be transformed immediately for rapid transfer to others. Reports in the literature have described methods to assess pharmacist interventions related to medication errors,[7] use of computer-based systems,[8] and, recently, use of PDAs in specific patient care areas.[9] Many of these documentation systems tend to be individualized applications in which the transfer of data to other providers is not possible or is quite limited. Often these systems focus on the generation of reports for workload analysis or accreditation purposes.

Pharmacists in community settings must communicate more regularly with hospital pharmacists, and vice versa, yet this often is not the case.[18,36] Interventions often need to be shared with other pharmacists at shift changes, transfer of patients from one care area to another, or even transfer of patients to new health systems altogether. One study assessed the use of computerized reminders to physicians to increase preventive care in inpatient settings for pneumococcal and influenza vaccinations and prophylactic heparin and prophylactic aspirin at discharge with the use of a computerized order entry system. The investigators concluded that computerized reminders significantly increased the rate of delivery of the intended therapies.[54] Future digital technologies not only will prompt and remind practitioners of situations that require their attention but also will prevent such occurrences.

Likewise, e-mail and the Internet can be used as vehicles to communicate not only among healthcare providers but also with patients. Electronic reminders aiding medication adherence, answering medication- and disease-related questions, and providing product comparisons can be sent via e-mail from pharmacy providers. Access to the Internet in the work setting, however, may be a limiting factor for many community pharmacists, particularly those in chain pharmacies,[55] and must be overcome to allow for universal adoption in community pharmacy practice. The benefits to allowing Internet access in community pharmacies far outweigh potential concerns for inappropriate use in the work setting when patients' lives may depend on the information contained within resources available through the Internet.

PDAs are efficient tools that can be used to collect, process, and transmit data that ultimately have an impact on the care delivered to patients, although the devices do have limitations, such as their memory capabilities, screen size, and overall functionality.[56] In some software applications, a synchronization interface can be written to allow for an automatic link to a website to deposit and collate aggregate data from PDA users or directly from a computer linked to the Internet.[52] An example of an electronic documentation system is provided in the case study.

TRAINING CONSIDERATIONS FOR PHARMACISTS AND SUPPORT STAFF IN DOCUMENTATION

Pharmacists often are not comfortable in documenting their activities related to patient care within the pharmacy setting and are even more uncomfortable in communicating this information to other

healthcare providers. All too often communications from pharmacists to physicians relate to pharmaceutical product usage and restrictions (i.e., nonformulary issues) and do not focus on patient care issues. Thus, attention must be directed toward practicing pharmacists and providing them with education and training related to why documentation is necessary, how to document, and use of technology to assist in the documentation process. The training of support staff, such as pharmacy technicians, must not be overlooked because these individuals can assist in the routine collection of both pharmaceutical data and retrievable patient information (e.g., from medical charts and laboratory reports) that can be presented to pharmacists for assessment and needed followup.

Although the concepts of documentation are consistent irrespective of practice settings, the process by which data are collected and the tools for documentation can be quite different. Thus, the training associated with documentation must be specific to the respective practice environments of pharmacists. For example, access to healthcare providers, medical records, laboratory data, and patients is more common in hospital pharmacy practice than in community pharmacy practice, where direct access to patients is often the only source of information. As a result, data collection, documentation, and communication with other healthcare providers and patients vary based on the practice setting. However, as the use of EMRs, CPOE systems, and digital documentation becomes more common, the ability of pharmacists to interface with these systems will become less of a logistical barrier.

CONCLUSIONS

Although the common maxim "If it wasn't documented, it wasn't done" applies to all providers of healthcare, for the pharmacy profession, this is the mantra the profession (current practitioners and future) needs to embrace if it is to remain an active and valued participant in the healthcare systems of industrialized countries. Current pharmacist practitioners must demonstrate their value by assuming a pivotal role between other healthcare providers and patients in communicating, interpreting, and monitoring the desired health outcomes associated with prescription and nonprescription therapies. Similar to other students/interns/residents in the health sciences, pharmacy students/interns/residents need to document the value they provide at their respective clinical practices sites. The overall pharmacy "value" will be derived through weighing of the evidence obtained through the provision of direct patient care services, monitoring medication therapy outcomes (favorable and nonfavorable), providing appropriate recommendations, and documenting the outcomes achieved, all of which must be communicated in an efficient, concise, consistent, collaborative manner to the various stakeholders. To do anything less places the pharmacist–patient–provider relationship in jeopardy and some patients in harm's way.

CASE STUDY

This case could be seen in either a community or hospital setting (if the prescription was a handwritten order in the medical chart of the patient).

A 59-year-old African American man who has atrial fibrillation presents a handwritten prescription that appears to read, "warfarin sodium 25 mg PO qd." The pharmacist identifies this as too high of a dose (most likely missing the decimal point for the dose of 2.5 mg) and contacts the prescriber immediately. The pharmacist would proceed to log this intervention as shown in Fig. 4–1 of the Pharmacists Documenting System (PSDS).

Continuing, in the box on the first "Reasons" page under the subheading of "Order Clarification," "Illegible writing" would be checked, and under "Drug Regimen Selection," "Dose" would be checked (Fig. 4–2), given that the prescription was written poorly (i.e., illegibly) and the dose appeared incorrect.

As with most interventions by pharmacists, typically, recommendations are made to healthcare providers, patients, or caregivers. Using the preceding example with the warfarin prescription, the box under the recommendation subheading "Medication Related" would be checked, and "Change dose" would be indicated (Fig. 4–3). In this case, additional "Patient Care Related" recommendations could have been made, such as the ordering of "laboratory tests" and "therapeutic drug monitoring."

The next step would be to check the box under the subheading "Contact" entitled "Contact health care provider" to ensure that the illegible prescription and the incorrect dose were interpreted correctly and that the appropriate medication and strength were verified by the pharmacist and dispensed to the patient (Fig. 4–4).

With respect to outcomes, the following items would be indicated for the prescription if the prescriber agreed with ("accepted") the interpretation that the prescription was, in fact, for "Warfarin sodium 2.5 mg PO qd" and not "Warfarin sodium 25 mg PO qd" as written in the "Result of Intervention" section. The intervention required 10 minutes of the pharmacist's time, captured in "Time Involved." It was assumed that this action by the pharmacist would have an "Anticipated Outcome" of "Increased safety" for the patient (Fig. 4–5).

In a situation where point-of-care diagnostic monitoring for anticoagulation is available to the pharmacist, under the "Professional Services" subheading, "Laboratory test" could have been checked (Fig. 4–6).

In many instances, this interaction and others quite similar take place on a daily basis, but the valuable contributions pharmacists make in averting potentially lethal medication-related errors are never captured. More importantly, without this systematic approach to documentation of specific classes of agents, most common reasons for interventions and outcomes of recommendations would not be known or available for followup.

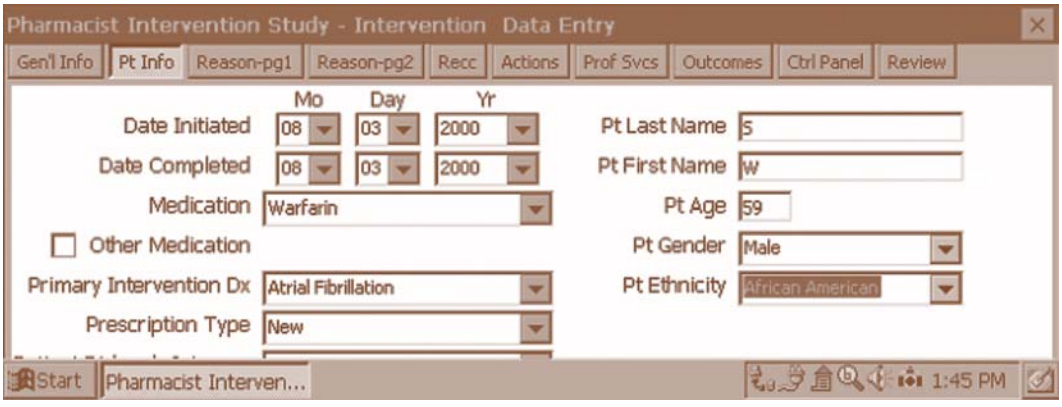

FIGURE 4-1. PSDS initial patient screen.

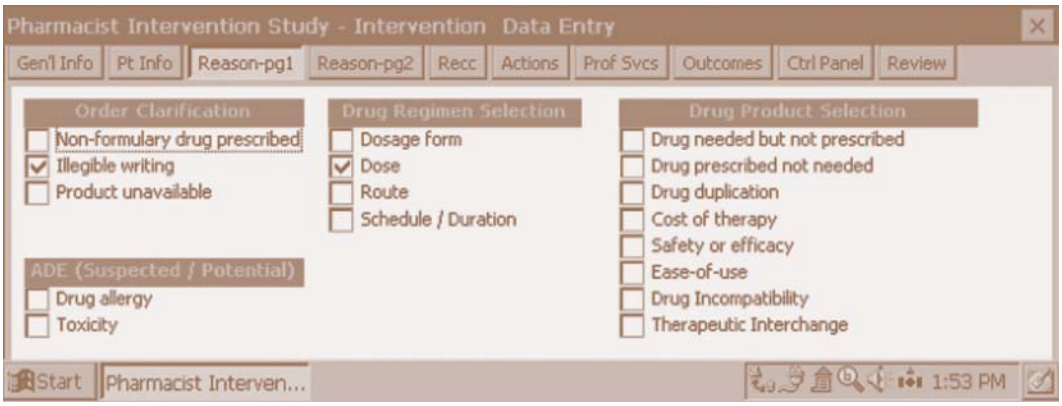

FIGURE 4-2. PSDS reason for intervention screen.

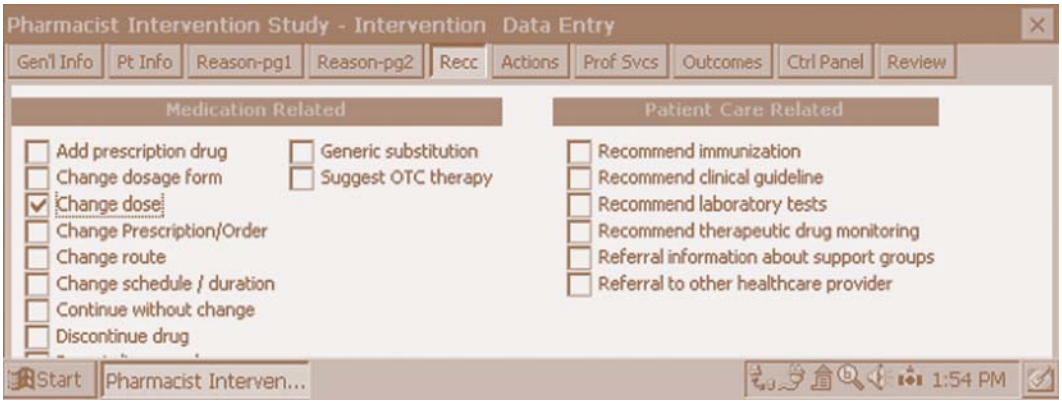

FIGURE 4-3. PSDS intervention recommendation screen.

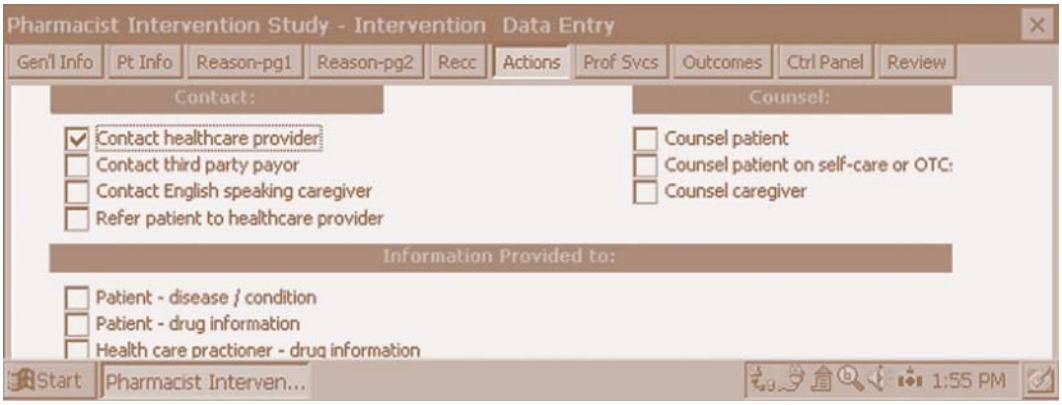

FIGURE 4-4. PSDS intervention action screen.

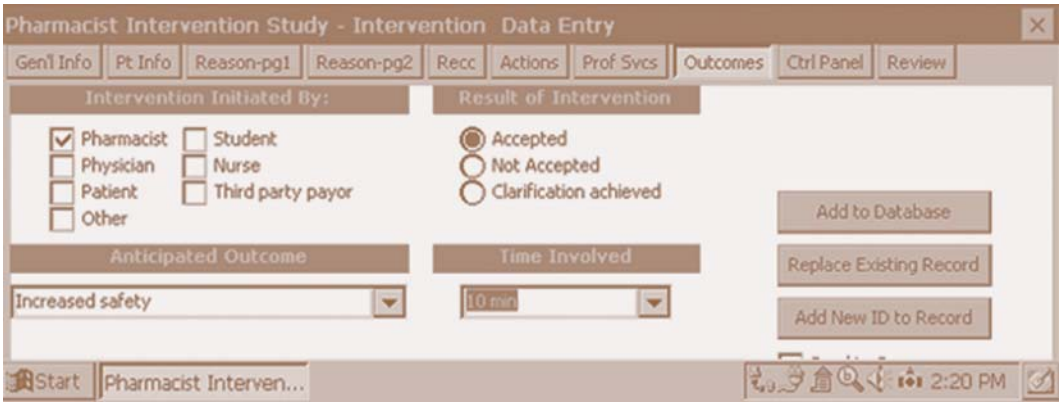

FIGURE 4-5. PSDS intervention outcomes screen.

FIGURE 4-6. PSDS professional services screen.

ABBREVIATIONS

AMP: average manufacturer price

AWP: average wholesale price

CMS: Centers for Medicare and Medicaid Services

CPOE: computerized physician/prescriber order entry

CPT: current procedural terminology

DRP: drug/medication-related problem

EDI: electronic drug interchange

EHR: electronic health record

EMR: electronic medical record

HRQOL: health-related quality of life

ICD-9-CM: International Classification of Diseases, Ninth Revision, Clinical Modification

IOM: Institute of Medicine

MTMS: medication therapy management services

NCPDP: National Council for Prescription Drug Programs

PDA: personal digital assistant

POMR: problem-oriented medical record

SOAP: *s*ubjective and *o*bjective data, *a*ssessment, and therapeutic *p*lan

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