Continuity of care in medication management: Review of issues and considerations for pharmacy  

DEVELOPED BY THE ASHP CONTINUITY OF CARE TASK FORCE  

Am J Health-Syst Pharm. 2005; 62:1714-20

The Executive Committee of the ASHP Section of Home, Ambulatory, and Chronic Care Practitioners (SHACCP) proposed a policy statement related to continuity of care in medication management (CCMM) in February 2003. In June 2003, the ASHP House of Delegates approved the following continuity of care policy statement:

To recognize that continuity of care is a vital requirement in the appropriate use of medications; further, to strongly encourage pharmacists to assume professional responsibility for ensuring the continuity of pharmaceutical care as patients move from one setting to another (e.g., ambulatory care to inpatient care to home care); further, to encourage the development of strategies to address the gaps in continuity of pharmaceutical care.1

With the approval of this policy, ASHP embarked on an initiative to provide resources, training, and leadership on the issue of CCMM.

In December 2003, the Executive Committee of the SHACCP established a Continuity of Care Task Force in response to the approval of the continuity of care policy statement. Members included representatives from each of the ASHP sections, forums, and practice groups, representing home care, community, inpatient, long-term-care, clinical, and ambulatory care practitioners and pharmacy management. The Task Force was charged with developing a paper that defined CCMM, identified practice gaps and barriers that contribute to the discontinuity of care, outlined a common data set, provided examples of current practices that demonstrate CCMM, and recommended actions for improving or implementing CCMM.

Current state of affairs

The health care arena is multifaceted and complex. Patients often receive care from a myriad of providers, in various locations, and across many levels of the continuum of care.2-4 Despite the efforts to emphasize primary provider-driven oversight of all aspects of care, the current health infrastructure does not include “cooperative systems,” which support and facilitate effective communication and coordination.3 For this reason, health care professionals find it difficult to respond to the discontinuities and fragmentation in patients’ care.5 The inherent complexities of the health care environment create gaps in the CCMM and have the potential to cause failures.7 Health care professionals, including pharmacists, must address these gaps to provide high-quality patient care.

Medications play a key role in the success or failure of care.7,8 Preventable drug-related morbidity is the cause of many hospital admissions, yet the continuous management of medication therapy remains elusive.7 Deficiencies in the sharing of patient information are core contributing factors to the discontinuity of care, which is a logical precursor to medical errors.6,9

Although pharmacists are the medication management experts, they must use a multidisciplinary approach to allow the continuous management of patients’ medication regimens.10 Physicians, pharmacists, nurses, and other allied health professionals can bridge these medication management gaps and optimize patient outcomes by working together.
Building consensus

The Task Force met regularly by conference call between February and December 2004. Sections of this paper, including the definition of CCMM, were developed through an evidence-based, consensus-building approach using a modified Delphi process. This validated, iterative process required that each Task Force member rate the definition of the particular component of the paper with one of the following descriptors: strongly agree, agree, disagree, or strongly disagree. The use of substitute participants was not permitted. Each member was required to vote, and no member was allowed to abstain. Evidence was required to support dissenting opinions. All responses were submitted to ASHP staff. If any Task Force member strongly disagreed, then revision of the definition was required. When revisions were required, anonymous verbatim comments were provided to the author of the component in question. After revisions were complete, the voting procedure was repeated, and the process continued until consensus was reached. This process was also used to build the common data set for medication management, which appears in the appendix. The Task Force employed a more simplified group review and consensus process for the identified practice gaps and barriers and the recommendations for enhancing or implementing CCMM.

Defining continuity of care and CCMM

Continuity of care. The term continuity of care has been used in the pharmacy literature for decades with no formal definition, yet the term’s predominant meaning is “a relationship between present and past care requiring a flow of information and a care plan.” Because continuity of care has been defined differently by various health care professionals, the Task Force defined the term in relation to medication management, which is more applicable to pharmacists.

A report commissioned by the Canadian Institute for Health Information and the Conference of Canadian Health Ministers defined continuity of care as having three components (informational, relational, and management continuity) that shape patients’ perception of their health care experience and how that care is provided over time. Canadian pharmacists’ focus on the importance of continuity of care led to the publication of a compilation of resources and case examples of efforts to promote and achieve positive patient outcomes.

Continuity of care guidelines developed in Australia focus on medication management and consist of seven principles: (1) identifying a person to coordinate the medication discharge plan, (2) obtaining an accurate medication history, (3) evaluating the complete medication list for appropriateness, (4) developing a treatment plan that is part of the overall care plan, (5) dispensing an adequate amount of medication at discharge, (6) ensuring the patient has been educated about the discharge treatment plan, and (7) communicating to follow-up health care providers the patient’s admission, medication changes, and discharge plans. Resources and programs in Australia have been developed and implemented to assist with achieving these principles in all practice settings.

In the United States, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO)
introduced a new patient safety goal in 2005, requiring health care organizations to “accurately and completely reconcile medications across the continuum of care.” In addition, the Centers for Medicare and Medicaid Services established the Chronic Care Improvement Program, authorized by the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, to study the impact of better continuity of care management of up to 300,000 Medicare recipients.

In 1998, the Canadian Society of Hospital Pharmacists and the Canadian Pharmacists Association defined seamless care as the desirable continuity of care delivered to a patient in the health care system across the spectrum of caregivers and their environments. Pharmacy care is carried out without interruption such that when one pharmacist ceases to be responsible for the patient’s care, another pharmacist or health care professional accepts responsibility for the patient’s care.

In 2003, the American Academy of Family Physicians defined continuity of care as “the process by which the patient and the physician are cooperatively involved in ongoing health care management toward the goal of high quality, cost-effective medical care.” However, the Task Force believes that continuity of care and CCMM require a multidisciplinary approach.

Freeman and colleagues identified more than 10 distinct definitions of continuity of care. The three most common were (1) longitudinal or provider continuity (seeing the same professional), (2) continuity across the secondary and primary care interface (follow up on patient after he or she is transferred from a specialist to a generalist’s service), and (3) continuity of information through medical records. They also identified continuity of care as a multifaceted concept that includes continuity across organizational boundaries, continuity of personnel, continuity of information, and continuity over time. Based on these findings, six central elements of continuity of care were proposed: (1) the experience of a coordinated and smooth progression of care from the patients’ point of view (experienced continuity), (2) complete information transfer following the patient (continuity of information), (3) effective communication between professionals and services providing care to patients (cross-boundary and team continuity), (4) flexibility and the ability to adjust to the needs of the individual over time (flexible continuity), (5) care from as few professionals as possible, consistent with other needs (longitudinal continuity), and (6) provision of the name of at least one health care provider with whom the patient can establish and maintain a professional relationship (relational or personal continuity).

CCMM. The definition of CCMM developed by the Task Force (see box) is consistent with other published work in this arena and delineates the core elements required to provide effective CCMM and necessary for its integration with the total care of the patient.

This definition of CCMM provides a framework for analyzing the different areas of practice that are prone to failures in medication management (practice gaps) and guidelines for identifying the barriers to its achievement.

### Identifying practice gaps and analyzing barriers

Practice gaps are breaks in the provision of continuous patient care. These gaps are caused by barriers to the delivery of care, one of which is patients’ transition among different levels of care. Health care delivery must be continuous and integrated to be of high quality and protect the patient from harm. The Task Force identified eight main categories of practice gaps in continuity of care:

1. Clinical gaps involving medication errors, adverse medication reactions, medication interactions, polypharmacy, medication shortages, tablet splitting, generics, admission information, diagnoses, medication information, missed doses, medication guidelines, and treatment guide.
2. Patient gaps, which are caused by inability to afford care, lack of time or transportation, location, education level, language barriers, use of multiple physicians, use of multiple pharmacists, cultural barriers, lack of caregivers, noncompliance, old age, and inability to understand patients’ medical conditions and needs.
3. Communication gaps, which are caused by relationship barriers, poor documentation, lack of medication information and patient education, lack of professionalism, noncompliance, and personnel shortages.
4. Organizational gaps, found in policies, formularies, finances, budget constraints, health maintenance organizations, staff guidelines, specialization, multiinstitutions, bureaucracy, and size.
5. Coordination gaps, which are caused by lack of multidisciplinary care, discharge plan, home care information, community pharmacy information, insurance, documentation, and care plan.
6. Professional gaps, which result from staff shortages; poor salary compensations; lack of technology, time, education, and medication information; hectic work schedules; job changes; lack of professionalism; poor handwriting; poor communication skills; lack of motivation; and ego.
7. Policy gaps, which result from the misinterpretation or lack of regulations, such as the Health Insurance Portability and Accountability Act, JCAHO, institutional, diagnosis-related groups, formularies, state boards of pharmacy, practice acts, and legislation.
Building a common data set

Technology and computerization allow for the quick and easy dissemination of information. This is especially important in today’s health care environment, where advances in the diagnosis and treatment of various illnesses occur at a rapid pace. Information exchange is one of the largest components of CCMM. Concise, consistent, and easily transferable data ensure the quality and safety of medication management. The American Society for Testing and Materials has advanced information exchange by developing an international standard to be used by information technology system vendors when creating a uniform standard electronic medical record.24

The Task Force realized that another major step in achieving informational continuity was to establish a common data set of patient information to enhance the timely communication of pertinent information and standardize information management in patient care among health care providers.

A common data set attempts to identify characteristics that differentiate patients from each other. These attributes may significantly influence the provision and allocation of resources for each patient’s care and can serve to identify traits that must be accounted for in order to provide safe care.25 A common data set also empowers patients, as well as their caregivers, allowing them to be informed and knowledgeable when questions are asked of them. Patients are able to access and assist in updating their information, with each point in a data set serving as a trigger for the validation, rather than provision, of information from memory. This is especially important in limiting frustration in patients who are ill or otherwise seeking medical care.

A common data set for patients also benefits the health care system by facilitating the initiation of care in a timely fashion.18,19 Patient validation of the data set expedites assessment and initiation of treatment, diminishes the duplication of effort with each encounter, and fosters consistency. The data set should be used early and frequently to promote seamless patient entry and transition through the system. It also enhances compliance with the JCAHO requirements for medication reconciliation. Some sectors of health care are required to maintain current and complete medication profiles for regulatory and licensure compliance (i.e., long-term-care facilities, home health agencies, and hospital discharge planning departments). The full implementation in 2006 of the JCAHO interprovider and intraprovider National Patient Safety Goal for medication reconciliation at each patient transfer should highlight and initiate the development of systems and tools to facilitate the process.

There are some obstacles to creating and maintaining a common data set. Data may be documented and tracked through various computerized information systems that may not be standardized and integrated across practice settings. Variables of a common data set require perpetual revision. More importantly, outdated information jeopardizes the internal validity of the data set and undermines its intent. Therefore, it is still the responsibility of the health care provider to confirm the accuracy of each portion of the data set as it pertains to the condition of the patient.

In addition, each health care provider will continue to manage an aggregated data set (i.e., the medical record) for each patient. Inclusion of dates of service and dates of revision of the data set is also recommended. Ideally, one person ultimately coordinates the patient’s care.17 The consensus-developed common data set, found in the appendix, will enhance these coordination efforts by encouraging standardization of relevant information that will support timely decisions about the patient’s care.

Examples of CCMM programs

The Task Force solicited examples of initiatives to improve CCMM through ASHP list servers, networking, and interviews. Pharmacists whose organizations are currently pursuing CCMM programs shared some of their experiences and insight regarding processes, barriers, and recommendations from their respective organizations. These examples further support the emphasis
and efforts in the recommendations outlined by the Task Force later in this paper.

University of Iowa Hospitals and Clinics, Iowa City. The University of Iowa Hospitals and Clinics (UIHC) Department of Pharmaceutical Care started a program in 2000, as part of a pharmacy residency project, called Continuity of Care 1 (COC1). The goal of this program was to establish better communication between hospital pharmacists and community pharmacists regarding their common patients.

Call to Action to Promote CCMM

1. Advocate for the increased development of professional resources that educate health care providers on the many facets of CCMM.
   a. Develop focused continuing education that teaches professionals about continuity of care (COC), focusing on issues such as correct interpretation of laws, regulations, and accreditation standards, as well as identifying practice models that have fostered exceptional COC practices.
   b. Develop training tools, such as CD-ROMs, training manuals, and workbooks, to educate providers about CCMM.
   c. Encourage and foster publications in professional journals, such as AJHP, peer-reviewed nursing and medical journals, and health care information technology journals, that highlight “best practices” as programs evolve for ensuring quality COC.
   d. Collaborate with the Institute for Safe Medication Practices (ISMP) regarding medication errors that have resulted from poor or inappropriate communication of information across the continuum of care and find ways to publish more information about these events.

2. Encourage professional associations to foster interdisciplinary efforts in addressing practice gaps and establish practice standards that will support the infrastructure required to achieve CCMM.
   a. Develop collaborative presentations and programs for health care professionals, such as nursing, physicians, information technology specialists, and health care executives. These activities should include educational forums and interorganization collaborations.
   b. Develop best practice standards and other guidance documents with an interdisciplinary and multidisciplinary focus.

3. Establish pharmacy organization coalitions, or encourage the existing pharmacy organization coalitions, to focus on the regulatory, reimbursement, and accreditation infrastructure that influences COC efforts.
   a. Advocate for changes that improve COC by ensuring pharmacist participation in key national quality improvement benchmarking and standard setting organizations (e.g., National Quality Forum, JCAHO, Agency for Healthcare Research and Quality).
   b. Further develop the role of pharmacists in the provision of medication therapy management services and the importance of these services in COC.
   c. Advocate for and support accreditation standards across practice settings that encourage and require an improvement in COC.
   d. Support and participate in forums that include discussions on barriers to COC by regulations (e.g., Health Insurance Portability and Accountability Act, practice acts, inconsistencies across professions) and how pharmacy can provide a leadership role in the education of pharmacists and other health care professionals regarding the removal of these barriers.

4. Advocate for an increase in opportunities to conduct research and develop systems to improve COC.
   a. Promote and support research that identifies COC as a component of optimal medication use and is founded in the development of acceptable and identifiable measures of COC.
   b. Promote and support research that incorporates existing and evolving COC measures as a dimension of practice.

5. Identify and participate in forums that focus on the development and setting of standards concerning information technology. Support and participate in groups that are focused on computerization, smart cards, and other methods to allow for current patient medication-related data to accompany the patient through the care process.

6. Advocate for the integration of COC benefits, concepts, and expectations into the educational curriculum of health care professionals.
   a. Focus on pharmacy, medicine, and nursing health management programs to more quickly influence the health care environment.
   b. Promote an expanded emphasis in academics and an experiential curriculum for the health care professions on expectations and methods for achieving COC in practice.
   c. Consider shared course work for nursing, medical, pharmacy, and other allied health students that will foster interdisciplinary provision of COC.
   d. Advocate to the Accreditation Council for Pharmacy Education that the standards for pharmacy education include COC.
Patients entered COC1 either before admission to the hospital via the community pharmacist or upon admission via the hospital pharmacist. Upon admission, patients were asked what pharmacies they frequented and if the pharmacy was under contract with COC1. All patients gave written consent to participate in the program. Upon the patient’s admission, the COC1 pharmacy faxed the pharmacy records to the hospital. The hospital pharmacist then completed a patient history, which included medical, social, and family histories. This information was entered into a comprehensive database (developed by the hospital’s information technology department) that was accessible from any computer in the facility. At discharge, the patient’s information, including his or her medication list, was faxed from the database to the pharmacy.

UIHC encountered multiple problems with the program. First, the community pharmacies’ computer systems were not interfaced with UIHC’s system. Second, it was unclear how many years of patient information should be faxed. Third, there was a lack of physician involvement. Many times the community pharmacist did not know the patient well enough to assist the hospital pharmacist in understanding the patient’s issues or reasons for certain medications. Fourth, a considerable amount of time was required to educate patients and pharmacists about the program and to record each patient’s medical history. In addition, it was difficult to address every new admission or discharge since pharmacy did not have a presence on every unit every day of the week. Finally, UIHC did not contract with nursing homes, which led to incomplete transfer of patient information.

Solutions to these problems include focusing on one disease state or one nursing unit before expanding the service to other areas, which would allow the educational process to be more focused on those who would be participating in the program and facilitate program evaluation. It may also help to have one person in charge of the program to ensure it runs efficiently and effectively.

Kaiser Permanente, Kensington, Maryland. Kaiser Permanente is mainly a closed health maintenance organization with employee physicians and pharmacists using organization-owned hospitals. In Maryland, Kaiser contracts beds with local hospitals and places Kaiser pharmacists and other health care providers within hospitals. All patient medical information is accessible through a computer or telephone anywhere in the country. Kaiser has developed guidelines for all types of care, and health care providers within the system are expected to follow them. Every member of the health care team plays a vital role in information gathering and maintaining the continuity of care.

When working with a non-Kaiser hospital, multiple barriers to CCMM were encountered by Kaiser. First, Kaiser pharmacists were not automatically accepted by the hospital pharmacists or other health professionals, but over time a relationship developed that eased the transfer of medication data for the patient. Second, Kaiser patients are often the sickest patients in the hospital with shorter lengths of stay, which made medical care more challenging. Third, Kaiser had to comply with individual formularies when their patients were treated at a specific institution, but were switched to drugs on Kaiser’s formulary at discharge. Fourth, the demand for more Kaiser pharmacists on rounds grew once the value of their services was realized, which reduced their ability to extend medication management services to more patients. Finally, much like the findings of UIHC, when Kaiser patients are transferred or discharged, a computer interface with hospitals, community pharmacies, and long-term-care facilities is required to facilitate the transfer of patient information. This is especially important because if a patient goes to a physician, pharmacy, or hospital outside of the Kaiser system, the patient’s information would be lost.

When implementing a CCMM program, Kaiser recommends using pharmacists who are experienced in the acute care setting and possess excellent clinical skills. These pharmacists should participate in the hospital’s activities, both professional and social, in order to nurture relationships with other health professionals. The pharmacists should also provide a complete service with quick turnaround and anticipate patients’ and providers’ needs in order to prevent delays in the transition from hospital to home or alternative site. Keeping abreast of the latest guidelines in treatment as well as cost-effectiveness data solidifies the pharmacist’s role on the multidisciplinary team. (Don Yee, Kaiser Permanente, Kensington, MD, personal communication, Apr 2005.)

Call to action

The Task Force encourages ASHP to continue to invest in efforts that improve patient care by initiating collaboration with others with an aim to increase the focus on CCMM by developing standards, resources, technology, and methods for implementing care models.

Conclusion

Pharmacists, physicians, nurses, health administrators, educators, and professional groups are integral in the provision of CCMM. Further discussion should occur among health care providers and leaders to encourage the adoption and implementation of CCMM programs.

References

Appendix—Continuity of care in medication management common data set

Health care provider information (include phone numbers and addresses)
1. Primary care physician and other physicians (including specialists seen within the last six months)
2. Pharmacy, home health, and home infusion organizations
3. Physician(s) responsible for therapy ordered

Patient information
1. Date of birth, social security number, sex, race, address, language(s) spoken
2. Emergency contact information
3. Institution, facility, or home where therapy is to be administered
4. Primary caregiver contact information, if not self-care

Insurance information
1. Company name and prescription plan, infusion coverage plan, and other plans relevant to the medication care coordination process
2. Name of subscriber, date of birth, and member identification number
3. Minimal data elements (e.g., copay, spend down)

Health information
1. Objective patient information as related to current care coordination plan
   a. Actual weight
   b. Height
   c. Vital signs at referral or transfer
   d. Pertinent laboratory test results (e.g., electrolytes, white blood cell count, cultures, serum creatinine)
   e. X-ray results
   f. Equipment
2. History (include dates when appropriate)
   a. Family history
   b. Social history (marital status, substance use, home environment care issues, primary caregiver if not self, other factors that influence the self provision of therapy wherever patient is living)
   c. Diagnoses, medical conditions, and major procedures (include dates, times, locations, and results)
   d. Adverse reactions to medications and medical substances including latex or contrast media (include allergies and intolerances)
   e. Immunization and vaccination dates (i.e., infant, pediatric, adult, and pregnancy)
   f. Current prescription and nonprescription medications (include start dates, height and weight considerations, directions for use [dosage, route, frequency], and reasons for use)
   i. Dietary supplements, vitamins, and herbal products
   ii. Medication items obtained outside normal U.S. channels including those without prescription
   g. Medication history (including start and stop dates, recent or relevant changes to the medication regimen, and reasons for changes)
   h. Assessment scales as appropriate (pain, mental health, quality of life, range of motion, activities of daily living, comprehension skills, ability to self-administer medications and assess response, nutritional status) (include dates of assessment)
   i. Blood type
3. Provision of care (include dates)
   a. Physician visits (primary care physician and specialists)
   b. Emergency department visits
   c. Disease management visits
   d. Hospital admissions
   e. Home health care services
   f. Long-term-care facility stays

1720 | Am J Health-Syst Pharm—Vol 62 Aug 15, 2005