Chapter 1: Patient Care Process

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CHAPTER SUMMARY FROM THE PHARMACOTHERAPY HANDBOOK

For the Chapter in the Schwinghammer Handbook, please go to The Patient Care Process.

KEY CONCEPTS

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1. A professional patient care practice is built on three essential elements: a philosophy of practice, a patient care process, and a practice management system.

2. A professional patient care practice is predicated on a patient-practitioner relationship established through respect, trust, and effective communication. Patients, and when appropriate, caregivers and family, are actively engaged in decision making.

3. Adopting a uniform patient care process—a consistently implemented set of methods and procedures—serves as a framework for each patient encounter, increases quality and accountability, and creates shared language and expectations.

4. The patient care process includes five essential steps: collecting subjective and objective information about the patient; assessing the collected data to identify problems and set priorities; creating an individualized care plan that is evidence-based and cost-effective; implementing the care plan; and monitoring the patient over time during follow-up encounters to evaluate the effectiveness of the plan and modify it as needed.

5. The patient care process is supported by three inter-related elements: communication, collaboration, and documentation. Interprofessional teamwork and information technology facilitate the effective and efficient delivery of care.

6. A practice management system includes the infrastructure to deliver care. This includes physical space, documentation systems, payment for services, and qualified support personnel.

BEYOND THE BOOK

BEYOND THE BOOK

For an overview of the importance of applying a consistent process of care in practice, listen to the following Pharmacy Forward podcast episodes:

- Pharmacists Patient Care Process – Episode I (Dr. Todd Sorensen) https://pharmacyforward.podbean.com/e/pharmacists-patient-care-process-i/
- Pharmacists Patient Care Process – Episode II (Dr. Mary Ann Kliethermes) https://pharmacyforward.podbean.com/e/pharmacists-patient-care-process-ii/

INTRODUCTION

The *patient care process* is a fundamental series of actions that guide the activities of health professionals. All health professionals who provide direct patient care should use a systematically and consistently applied *process of care* in their practice.[1] Until recently, the language to describe the process for delivering comprehensive medication management services was ill-defined. In 2014, the Joint Commission for Pharmacy Practitioners (JCPP)—representing 11 national pharmacy organizations—endorsed a framework for providing clinically oriented patient care services called the Pharmacist's Patient Care Process.[2] However, the framework and the language to describe the process are not unique to the pharmacy profession. Indeed, medicine, nursing, and dentistry all follow a putatively similar process of care[3] (see Table 1-1). For example, the American Nursing Association (ANA) outlines the nursing process with steps that include assessment, diagnosis, outcomes/planning, implementation, and evaluation.[4] The Academy of Nutrition and Dietetics collapses these general steps into four steps, outlining the nutrition care process to include nutrition assessment, diagnosis, intervention, and monitoring/evaluation.[5] Although the care process is similar across disciplines, each health profession brings a unique set of knowledge, skills, attitudes, and values to the patient encounter.

TABLE 1-1

Professional Standards of Patient Care and Their Domains

Primary Care IPC-2[6,7]	Dietician's Nutrition Care Process[8]	Specialty Nursing: Standards of Practice[9]	Physical Therapists[10]
Symptoms, complaints	Nutrition assessment	Assessment	Examination
Diagnostic screening, prevention	Nutrition diagnosis	Diagnosis	Evaluation
Treatment, procedures, medication	Nutrition intervention	Outcome identification	Diagnosis
Test results	Nutrition monitoring and evaluation	Develop plan of care	Prognosis
Administrative		Implement plan	Plan of care
Other		Co-coordination of care	Reexamination
		Health teaching and promotion	
		Prescriptive authority and treatment	
Diagnoses, diseases		Evaluation	Discharge/Discontinuation summary

Health professionals who provide direct patient care are often called *practitioners*. To *practice* is what health professionals do to bring their unique knowledge and skills to patients. A practice is not a physical location or simply a list of activities. Rather, a professional practice requires three essential elements: (1) a philosophy of practice, (2) a process of care, and (3) a practice management system.[3] These three inter-related concepts make the delivery of patient-centered care possible.

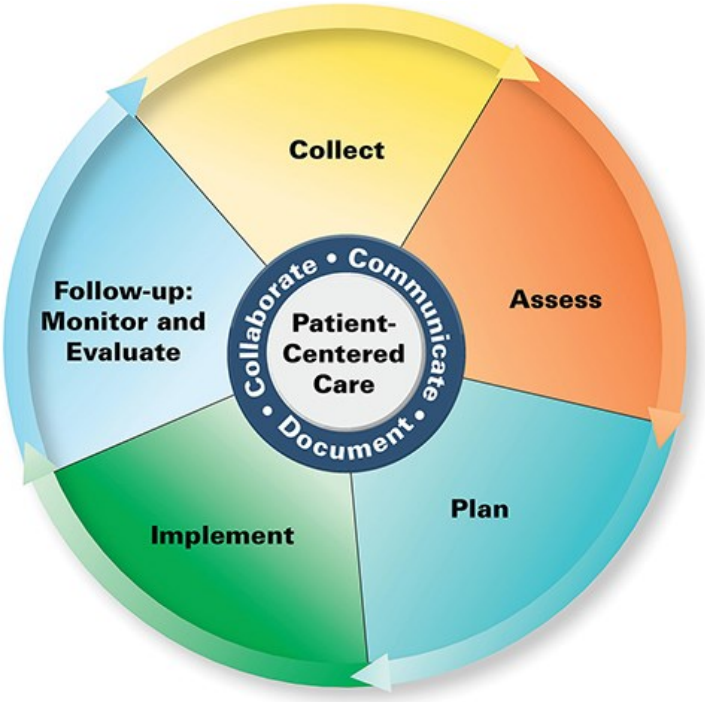
Health professionals have an ethical obligation to promote the health and well-being of the patients they serve. Thus, a philosophy—the moral purpose and a commonly held set of values that guides the profession—is the critical foundation on which the practices of pharmacy, medicine,

nursing, and dentistry are built.[11] A philosophy of practice is often formally articulated in the professional code of ethics endorsed by professional organizations and an oath that is recited by members of the profession during rituals and ceremonies. In addition to a code of ethics, most professions have an informal set of beliefs and values that inform self-proclaimed and societal expectations. For example, the concept of *pharmaceutical care* is not formally included in the code of ethics for the profession of pharmacy or the oath of a pharmacist.[12,13] However, informally, pharmacists understand they have a unique responsibility for addressing the drug-related needs of patients and should be held accountable for preventing, identifying, and resolving drug therapy problems.[14] Similarly, dentistry, nursing, and medicine have both formal and informal expectations that guide their professional practice.

A process of care that is systematically and consistently applied during each patient encounter increases the likelihood that optimal health outcomes are achieved.[15] The patient care process used throughout this book includes five essential steps: (1) collecting subjective and objective information about the patient; (2) assessing the collected data to identify problems, determine the adequacy of current treatments, and set priorities; (3) creating an individualized care plan that is evidence-based and cost-effective; (4) implementing the care plan; and (5) monitoring the patient over time during follow-up encounters to evaluate the effectiveness of the plan and modify it as needed (see Fig. 1-1). In addition to the five fundamental steps, a patient-centered approach to decision making is essential.[16] To be patient-centered requires effective communication and seeking to understand the patient's needs, preferences, and values. It also requires interprofessional collaboration—working with other health professionals to develop and implement a shared plan of care.[17] Each step of the process must be documented. These steps are interdependent, and completing all five steps is necessary to achieve the greatest impact. While a process of care is common to all, each profession has a unique body of knowledge and skills they bring to bear when assessing the data and formulating plans.[3]

FIGURE 1-1

The Pharmacist's Patient Care Process endorsed by the Joint Commission for Pharmacy Practitioners (2014).



Source: Joseph T. DiPiro, Gary C. Yee, Stuart T. Haines, Thomas D. Nolin, Vicki L. Ellingrod, L. Michael Posey: *DiPiro's Pharmacotherapy: A Pathophysiologic Approach, 12e*

A practice must also have a practice management system that supports the efficient and effective delivery of services.[3] Without a well-defined practice management system, the practice would not be sustainable. This includes the infrastructure—the physical, financial, and human resources—as well as policies and procedures to carry out the patient care work. Successful practices have a clear mission statement that defines who the practice serves,

the organizational values, and what they hope to accomplish. Furthermore, to achieve its mission, a practice must implement quality improvement methods that measure, evaluate, and improve the actions of practitioners (individually) and the practice (collectively).

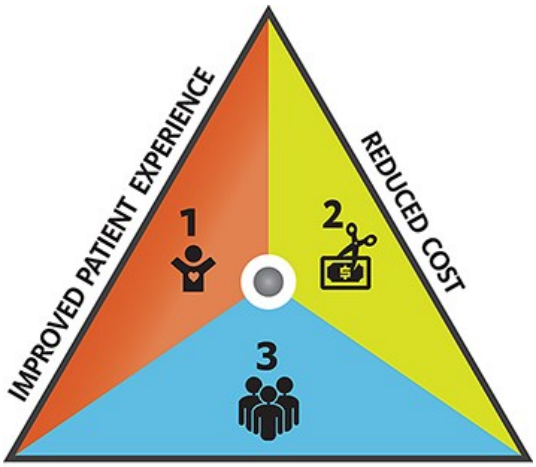
While every practice is built on three essential elements—a philosophy of practice, a well-defined patient care process, and a practice management system—the focus of this chapter is to describe the patient care process applied to drug therapy management and explore some environmental issues that are influencing the adoption and application of this process.

IMPORTANCE OF A CONSISTENT PROCESS OF CARE

It is well understood that healthcare is a complex business. Since the turn of the twenty-first century, much effort has focused on gaining control of a disparate, disjointed, costly health system that is not adequately producing desired patient outcomes despite the healthcare workforce laboring harder than ever. Spurred by the Institute of Medicine's *Crossing the Quality Chasm* report from 2001,[18] which set the framework for redesigning healthcare delivery, healthcare institutions and practitioners have embraced the Triple Aim[19] focusing on patient-centeredness, safety, and quality improvement (see Fig. 1-2). The Triple Aim can only be achieved with significant transformations in the delivery of care and by adopting payment models based on value.

FIGURE 1-2

The Triple Aim in healthcare.



Source: Joseph T. DiPiro, Gary C. Yee, Stuart T. Haines, Thomas D. Nolin, Vicki L. Ellingrod, L. Michael Posey: *DiPiro's Pharmacotherapy: A Pathophysiologic Approach, 12e*

To accelerate the requisite redesign of healthcare delivery, the Institute for Healthcare Improvement has developed guiding principles or "rules" for workforces and healthcare communities. Among these principles is to consistently implement what works in order to reduce unnecessary variation. Standardization is important because healthcare systems are embedded in a network of providers in multiple institutions, settings, and practices.[20] A lack of a consistent process of care creates an environment that leads to unacceptable gaps in care. Thus, a process of care must be sufficiently robust to address the complexity that exists among patients and adaptable to varied settings and different acuity levels. For a specific patient care service to be widely adopted and valued, it is imperative that clarity exists both in the execution of care and the terminology used to describe the care.

The stimulus for developing the patient care process for pharmacy was the wide variation observed as pharmacists provided direct patient care, often using the same terminology to describe diverse services or, conversely, the same service is described using different terminology. As patient care services provided by pharmacists, physicians, nurses, and any healthcare practitioner cannot operate in a silo, the services must be clearly articulated and well understood by patients, their caregivers, payers, and other care team members. Without a consistent patient care process, it has been challenging for the pharmacy profession to communicate the pharmacist's role to groups external to the profession and establish the distinct value pharmacists bring to an interprofessional care team. Moreover, the patient must know and understand what is to be delivered and to determine how best to receive the care provided. Likewise, other healthcare team members must determine how best to integrate the pharmacist's work into their

efforts caring for the patient.

Structure is essential to maintaining consistency. Systematically implementing a framework for care that is consistently applied assures no important step is overlooked and actions that may lead to greater harm than benefit are reduced or eliminated. Defining a standardized process of care enables data collection for quality assurance and research purposes to demonstrate the value of a service. In the hospital setting, care pathways and standard order sets are examples of standardized care processes that have been used for many years. Creating a standardized patient care process is not intended to reinvent "the wheel" but to create a common framework and language. The process of care described throughout this text provides an easily understood approach that is universally recognized.

PATIENT CARE PROCESS TO OPTIMIZE PHARMACOTHERAPY

There are two aspects that typically differentiate a profession-specific process of care. First, the application of the care process is defined within the context of the profession's knowledge and expertise. For pharmacy, the patient care process is focused on a patient's medication-related needs and their experience with medication therapy.[3] Dentists and dental hygienists employ a patient care process focused on a patient's oral health needs.[21] The nursing care process is applied to provide a holistic approach to a patient's health needs and include physical and mental health, sociocultural issues, spirituality, as well as economic and lifestyle factors.[4] The general approach to providing care to an individual patient in each of these disciplines is similar; however, the focus of the process is distinct.

The second way in which each profession uniquely addresses a patient's needs is the manner in which patient-specific information is assessed. When assessing information collected from a patient (eg, history of present illness, physical examination, laboratory data), physicians employ a clinical reasoning process called "differential diagnosis" to weigh the probability of one disease versus other diseases that possibly account for the patient's signs and symptoms. In the case of dental hygienists, the American Dental Hygienists Association notes that an assessment includes not only a health history and clinical assessment but also a "risk assessment" that includes 11 areas of evaluation.[5] For pharmacists providing comprehensive medication management, the assessment step involves a systematic examination of the indication, effectiveness, safety, and adherence for each of the patient's medications. This is a unique way of approaching a patient's health needs. No other discipline applies a systematic assessment process to a patient's medications and their medication experience in this manner.

Several publications and resources have outlined elements of the patient care process to deliver comprehensive medication management services.[2,11,17,22,23] There is relative consistency between these sources regarding the core elements. What varies is the specificity of the operational definition of each of the process components. Detailed operational definitions help to establish consistency across all practitioners applying the patient care process.[23] This care process is not specific to a care setting—the process can be applied in any setting when providing comprehensive medication management. What often varies is the information collected and its source, as well as the duration of time to complete the process. For example, in an ambulatory care clinic, the patient is often the most important source of information, but in a critical care unit of a hospital, there is a greater reliance on laboratory tests and special diagnostic studies. Similarly, the process of care unfolds in hours or days in acute care settings but may extend over weeks or months in chronic care environments.

Collect Information

When initiating the patient care cycle, a practitioner assures the collection of the necessary subjective and objective information about the patient and is responsible for analyzing the data to understand the patient's relevant medical needs, medication-related problems, and clinical status. In some cases, this information is directly collected by interviewing the patient or reviewing a medical record. In other cases, the practitioner may rely on other personnel to collect the information to be used in the assessment. This may include a blood pressure determined by a clinical assistant or a list of active medications recorded by a nurse. However, it is ultimately the practitioner's responsibility to assure that all necessary information is collected and that the data is accurate, regardless of the source. This information is critical to the ability of the practitioner to complete an assessment that will appropriately address all of a patient's medication-related needs (see Table 1-2).

TABLE 1-2

Collect Patient-Specific Information

Functional Definition[2,3]

The practitioner assures the collection of the relevant and necessary subjective and objective information about the patient and is responsible for analyzing the data to understand the relevant medical/medication history and clinical status of the patient.

Operational Definition

1. Conduct a review of the medical record to gather relevant information (eg, patient demographics, active medical problem list, admission and discharge notes, office visit notes, laboratory values, diagnostic tests, medication lists).
2. Conduct a comprehensive review of medications and associated health and social history with the patient. The practitioner or team member should:
    - Inquire as to whether the patient has any questions or concerns for the visit.
    - Review social history (eg, alcohol, tobacco, caffeine, other substance use).
    - Review social determinants of health relevant to medication use (eg, whether the patient can afford his/her medications, the patient's education level, housing arrangements, or means of transportation affect his/her ability to use medications as intended).
    - Review past medication history, including allergies and adverse medication effects.
    - Obtain and reconcile a complete medication list that includes all current prescription and nonprescription medications as well as complementary and alternative medicine the patient is taking (eg, name, indication, strength and formulation, dose, frequency, duration, and response to medication).
    - Review the indication for each medication.
    - Review the effectiveness of each medication.
    - Review the safety of each medication.
    - Review the patient's medication experience (eg, beliefs, expectations, and cultural considerations related to medications).
    - Review how the patient manages his/her medications at home (eg, independently or with help, pillboxes, calendars, reminders).
    - Gather any additional information that may be needed (eg, physical assessment, review of systems, home-monitored blood glucose, and/or blood pressure readings).
3. Analyze information in preparation for formulating an assessment of medication therapy problems.

Assess Information and Formulate a Medication Therapy Problem List

Once all of the necessary information to conduct a comprehensive assessment of the patient and their medication-related needs has been collected, the assessment is organized into a problem list consisting of the patient's active medical problems and medication therapy problems. Once identified, problems are prioritized to make decisions regarding the patient's medication therapy to offer the best opportunity to achieve the patient's overall health goals. In doing so, the practitioner reviews each medical condition and medication to make sure that each current medication is *indicated* (or necessary) for the condition for which it is being taken and that each condition that requires drug therapy is being appropriately treated. Then the practitioner determines whether each medication the patient is taking is *effective*, achieving the intended outcome. This includes assuring the medication is the most appropriate option for the patient and is at a dose that is expected to achieve the intended effect. Next, the practitioner considers the *safety* of each medication, assuring that the patient is not experiencing or being exposed to an unnecessary risk of adverse effects or an unintended interaction. Finally, the practitioner then evaluates each medication for *adherence*-related concerns. This includes determining if the patient can take the medication as intended, considering issues such as access and affordability, as well as sufficient knowledge and ability to appropriately administer the medication. Throughout the assessment process, practitioners must keep the patient's goals for therapy at the forefront of their decision making. Table 1-3 outlines the assessment process applied when optimizing pharmacotherapy.

TABLE 1-3

Assess Patient-Specific Information to Determine Health-Related Needs

Functional Definition[23]

The practitioner assesses the information collected and formulates a problem list consisting of the patient's active medical problems and medication therapy problems to prioritize medication therapy recommendations to optimize medication use and achieve clinical goals.

Operational Definition

1. Assess and prioritize the patient's active medical conditions taking into account clinical and patient goals of therapy.
2. Assess the **indication** of each medication the patient is taking. When assessing the indication of each medication, consider the following:
    - Does the patient have an indication for the medication?
    - Is the medication appropriate for the medical condition being treated?
    - Does the patient have an untreated medical condition that requires therapy but is not being treated or prevented?
3. Assess the **effectiveness** of each medication the patient is taking. When assessing the effectiveness of each medication, consider the following:
    - Is the patient meeting clinical goals of therapy?
    - Is the patient meeting personal goals of therapy?
    - Is the most appropriate drug product being used for the medical condition?
    - Are the dose and duration appropriate for the patient?
4. Assess the **safety** of each medication the patient is taking. When assessing the safety of each medication, consider the following:
    - Is the patient experiencing an adverse event from a medication?
    - Is the dose too high for the patient? Are the frequency and duration appropriate for the patient?
    - Do safer alternatives exist?
    - Are there any pertinent drug-disease, drug-drug, or drug-food interactions?
    - Do additional labs need to be obtained to monitor the safety of the medication therapy?
5. Assess **adherence** and the patient's ability to take (eg, administration, access, affordability) each medication. When assessing adherence, consider the following:
    - Is the patient receiving the most affordable option to optimize adherence?
    - Is the patient able to obtain the medication(s), and, if not, why?
    - Are the medications taken at times during the day that is appropriate to optimize effectiveness and minimize harm but also convenient for the patient?
    - Is the patient taking the medication as prescribed/instructed, or are doses missed? If doses are missed, why?
    - Are the frequency and formulation appropriate for the patient to optimize adherence?
6. Formulate a medication therapy problem list in accordance with the Pharmacy Quality Alliance Medication Therapy Problem Categories Framework.[26]
7. Prioritize the patient's medication therapy problems.

It is critical that the practitioner completes their assessment and defines a problem list considering indication, effectiveness, safety, and adherence *in this order*. This order of assessment ensures that the most relevant issue affecting the patient is identified. For example, there is a great deal of emphasis placed on improving patient adherence to medications, with nonadherence rates reported to range from 28% to 65%.[24,25] However, if a patient is prescribed a medication that is not indicated or is causing an adverse effect, focusing time and attention toward improving medication adherence is misguided and does not address the most important medication therapy problem. Selection of the most appropriate medication for the indication is the primary medication-related need that must be resolved.

The output of the assessment is a medication therapy problem list, prioritized in the order of importance from both the patient's and practitioner's perspectives. Typically, the problem list is framed in a categorical system of medication therapy problems. A nationally recognized system for categorizing the output of a practitioner's assessment is now recognized by the Pharmacy Quality Alliance (see Table 1-4). There are 10 medication therapy problem categories, and these align with the four areas of medication use assessment.[26]

When this assessment approach is applied, a relatively consistent pattern of medication therapy problems emerges.[27-29] The categories identified with

the greatest frequency are “needs additional therapy” and “dose too low,” followed by “adherence.” The other categories are observed less frequently. It should be noted that these reported trends all come from the application of this assessment process in ambulatory care settings. The distribution of medication therapy problems would likely differ in acute care settings.

TABLE 1-4

Medication Therapy Problem Categories Framework

Medication-Related Needs	Medication Therapy Problem Category
Indication	Unnecessary medication therapy
	Needs additional medication therapy
Effectiveness	Ineffective medication
	Dosage too low
	Needs additional monitoring
Safety	Adverse medication event
	Dosage too high
	Needs additional monitoring
Convenience	Adherence
	Cost

Data from Pharmacy Quality Alliance. *Medication Therapy Problem Categories Framework for PQA Measures*. Alexandria, VA: Pharmacy Quality Alliance, 2017.

Develop the Care Plan

Upon completing the assessment and establishing a prioritized list of medication therapy problems, an individualized patient-centered care plan that is evidence-based and as affordable as possible for the patient is created. The plan should be developed in collaboration with the patient or caregiver to meet the patient’s expectations and priorities. It should also be developed in collaboration with other healthcare professionals to ensure that all healthcare providers involved with the patient’s care agree and support the plan.

The care plan will include goals of therapy and outline contingencies to adjust medications, doses, or delivery, as well as monitoring parameters. It will establish time frames for follow-up and clearly state who will be responsible for each component of the care plan. The steps for developing a patient-centered care plan are outlined in Table 1-5.

TABLE 1-5

Develop the Care Plan

Functional Definition[23]

The practitioner develops an individualized, evidence-based care plan in collaboration with other healthcare professionals and the patient or caregiver that is evidence-based and as affordable as possible for the patient.

Operational Definition

1. Develop a care plan in collaboration with the patient and the patient's healthcare providers to address the identified medication therapy problems.
2. Identify the monitoring parameters important to routinely assess indication, effectiveness, safety, and adherence.
3. Review all medication lists to arrive at an accurate and updated medication list.
4. Determine and coordinate who will implement components of the care plan (ie, patient, pharmacist, other healthcare providers).
5. Determine the type of follow-up needed.
6. Determine the appropriate time frame for patient follow-up.
7. Determine the appropriate mode for follow-up (eg, in person, electronically, by phone).

Implement the Care Plan

Once a care plan is established, the practitioner implements the plan designed to prevent and resolve medication therapy problems. The care plan will likely include activities that the patient and other healthcare providers will be responsible for; however, it is the duty of the practitioner to ensure that each of the elements of the plan has been implemented in a time frame that is reasonable and effective (see Table 1-6).

There are many tools and resources that may be used to support a patient and/or their caregivers to successfully implement the care plan. It is in this part of the patient care process where practitioners will employ strategies such as patient education, motivational interviewing techniques, tools that support medication adherence, and patient self-monitoring technologies. These tools and resources are approaches to best meet the needs of the patient and their medication-related goals.

TABLE 1-6

Implement the Care Plan

Functional Definition[23]

The practitioner implements the care plan in collaboration with other healthcare professionals and the patient or caregiver.

Operational Definition

1. Discuss the care plan with the patient.
2. Ensure patient understanding and agreement with the plan and goals of therapy.
3. Provide personalized education to the patient on his/her medications and lifestyle modifications.
4. Provide the patient with an updated, accurate medication list.
5. Implement those recommendations that you have the ability to implement in your scope of practice.
6. Communicate the care plan to the rest of the care team. If you cannot implement a recommendation(s) on your own, reach a consensus on where implementation is required by another team member.
7. Document the encounter in the electronic health record (eg, a summary of relevant patient information, assessment, and plan, including rationale, monitoring, and follow-up).
8. Arrange patient follow-up.
9. Communicate instructions for follow-up to the patient.

Follow-up with the Patient

After the initial implementation of a care plan, ongoing monitoring and follow-up to evaluate the effectiveness and safety of the plan are essential. The plan should be modified as needed in collaboration with other healthcare professionals and the patient or caregiver. This follow-up process is critical and demonstrates the practitioner has assumed responsibility for the patient's medication-related needs. While a practitioner who serves as a consultant may not follow up to determine if the problem has been resolved, this is inconsistent with the expectations of a comprehensive medication management practice or the patient care process. As a healthcare practitioner who has assumed an important role in a patient's care, it is the responsibility of the practitioner to determine the outcome of drug therapy and take additional action if necessary. This follow-up process can occur through a variety of mechanisms, including face-to-face encounters, phone calls, electronic health record messaging, and telehealth technologies (see Table 1-7).

The frequency to which follow-up occurs varies from setting to setting. A practitioner practicing in an acute care environment will possibly transfer responsibility for follow-up to other providers, including another pharmacist, when the patient transitions to another setting. In the ambulatory care setting, a practitioner should ensure that a patient has a comprehensive evaluation of their medications and health status annually, at a minimum. In some cases, the nature of the patient's medication therapy problems may be resolved to the degree to which the patient no longer requires ongoing monitoring. In such cases, the patient should be referred back to the primary care provider for ongoing follow-up and monitoring.

TABLE 1-7

Follow-up with the Patient

Functional Definition[23]

The practitioner provides ongoing follow-up and monitoring to optimize the care plan and identify and resolve mediation therapy problems, with the goal of optimizing medication use and improving care.

Operational Definition

1. Provide targeted follow-up and monitoring (eg, in person, electronically, or via phone), where needed, to monitor response to therapy and/or refine the care plan to achieve patient and clinical goals of therapy. Targeted follow-up includes but is not limited to quick check-ins to monitor blood sugar or blood pressure, adjust insulin, check INRs, and provide education.
2. Repeat comprehensive medication management (CMM) follow-up visits at least annually, whereby all steps of the CMM Patient Care Process are repeated to ensure continuity of care and ongoing medication optimization.
3. If the patient is no longer a candidate for CMM, ensure that a plan for continuity of care with other care team members.

ENVIRONMENTAL ISSUES

The third critical element of practice is a practice management system. The specifics of any practice management system are based on fundamental business principles and the requirements of the particular type of healthcare setting where the practice exists.[30] In today's healthcare environment, there are several aspects of managing a practice that practitioners must consider—the metrics to ensure patient health outcomes are being achieved; efficient workflow; communication and documentation using the power of information technology (IT); and data that accurately attributes and values the work each practitioner brings to patient care.

Quality Metrics

Dr. Avedis Donabedian, considered the father of quality improvement in healthcare, defined standards as the desired and achievable performance related to a specific parameter—an objective, definable, and measurable characteristic of the structure, the process, or the outcome of the care.[31] To determine quality, there must be a standard to measure the level of quality against. The patient care process sets a standard of achievable performance by defining the parameters of the process that can be measured. With the movement toward outcome-based healthcare models and value-based payment systems, it is critical to objectively measure the impact a patient care service has on a patient's health and well-being. This allows the linkage from the standard process, such as what health problems were identified and how they were addressed during the patient encounter, to

the desired outcomes. For the process to be measurable, each element must be clearly defined and performed similarly during each patient encounter. The lack of clarity and consistency has been the Achilles heel in the evidence to support the value of pharmacists' patient care services.[32] The standard process gives pharmacists an opportunity to show value on a large scale because the services are comparable and clearly understood across practice settings.

Workflow, Documentation, and Information Systems

The generation and analysis of data regarding the care provided and the resulting health outcomes are becoming increasingly important for organizations and individual providers. Healthcare systems are rapidly embracing the power of technology to analyze information to gain important insights. This technology is only useful if clinical care is robustly documented, collected, and managed. Data is optimally collected as part of the workflow process using IT tools. Creating the requisite tools, however, requires a standard process to build cohesive systems with uniform data sets. Thus, the data elements can be collected using the same collection specifications using different technology systems in different organizations. This allows the reporting of comparable information to providers, payers, and others.

A uniform patient care process sets a standard for the workflow that allows IT systems to capture and extract data for analysis and sharing. Imagine a patient encounter with a practitioner in any setting. The practitioner often has some patient information available before the encounter; however, the practitioner will likely collect new information. This work can now be electronically captured in the collect phase of the workflow. The practitioner will then assess the information and identify new or unresolved medication-related problems. Likewise, this work is captured in the assessment phase of the visit. The practitioner will then update or add to the care plan for the patient, and the information can be electronically captured in the planning phase. During the encounter, the practitioner may implement some or all of the plan, and the tasks or services performed are captured during the implementation phase. During the follow-up and monitoring phase, the resolution of identified problems and the response to treatment are documented. The information collected can now be exchanged, extracted, and analyzed at the provider, population, organizational, and payer levels because it is defined and collected in a uniform manner.

The ability to capture clinical data is available through several coding systems (see Table 1-8). The Pharmacy Health Information Technology Collaborative has been at the forefront in assuring pharmacist patient care services are part of the IT systems being developed for the healthcare system in the United States.[33] The collaborative has developed several documents demonstrating how to uniformly document patient-care activities and enables sharing of patient-specific information across technology platforms. These data can be used to improve care coordination, workflows, and quality. Examples include documentation templates that use standard technology coding such as the Systematic Nomenclature of Medicine—Clinical Terms (SNOMED-CT) codes that convert a patient care note into an electronically transferable document (eg, pharmacist e-care plan). The information can then be used to link patient outcomes attributable to the pharmacist-provided care. The documents are easily accessible on the Pharmacy Health Information Technology (HIT) website (http://pharmacyhit.org/). It is unnecessary for practitioners to know the specific codes or technology structure. However, clinicians should understand how IT operates behind the scenes when performing and documenting their clinical activities. This will enable practitioners to assist information technologists in effectively designing systems that accurately and efficiently capture the elements of the patient encounter that can be used for care coordination, quality metrics, and payment in emerging value-based payment models.

TABLE 1-8

Clinical Coding Systems

System Name	Contents
International Classification of Disease (ICD)	Coding for medical procedures and encounters. The 11th edition was published in 2019.
Systematized Nomenclature of Medicine—Clinical Terms (SNOMED-CT)	A coding system of clinical terminology representing the full scope of clinical information in healthcare.
Logical Observation Identifiers Names and Codes (LOINC)	Vocabulary database of universal identifiers for laboratory and clinical test results.
Healthcare Common Procedural Coding System (HCPCS)	CMS established billing codes for Medicare for medical procedures that include CPT as well as codes not covered by CPT.
Current procedure terminology (CPT)	Coding system for medical procedures developed and maintained by the American Medical Association primarily used for billing services.
RxNorm	Standardized nomenclature for clinical drugs created by the National Library of Medicine.

Documentation, Attribution, and Payment

Payment to healthcare providers for patient care services in the United States has traditionally been based on the documentation and reporting of standard processes of care. Rules and guidance from Medicare and the Centers for Medicare & Medicaid Services (CMS) are considered the billing and payment standard for healthcare providers, both for governmental and commercial payers. Eligible Medicare Part B providers such as physicians, nurse practitioners, and physician assistants must follow standards outlined in the CMS Documentation Guidelines for Evaluation and Management Services.[34] Pharmacists are familiar with these standards because they often use the Subjective, Objective, Assessment, Plan (SOAP) note format when documenting care, including the patient's chief complaint, history of present illness, past medical history, social history, family history, review of systems, physical examination, assessment, and plan. Built on top of the standard documentation requirement is the reporting of the complexity of the care provided. This added layer of documentation is determined by the number of required elements in each documentation domain. A billing code can then be assigned to that patient care encounter which, in turn, equates to a payment commensurate with the level of care provided. While this process is the basis for the current fee-for-service payment structure, it is likely the general format that will remain in any new payment model. Similarly, other providers such as dieticians and physical therapists have standard processes, workflow, and documentation that enable the payment structures in their practice model.

Pharmacists have traditionally used the SOAP note format when documenting care for patients. This is particularly appropriate when providing services incident to an eligible Medicare Part B provider. It is the standard documentation required in that circumstance. However, some elements for the SOAP note, required when using certain billing codes, are not routinely performed by pharmacists (eg, comprehensive physical examination). The pharmacist patient care process establishes a standard framework that reflects the pharmacist's work. Using a standard care process accompanied with a standard documentation framework will result in efficiencies of practice, enable appropriate and accurate billing, and facilitate the attribution of care to desired patient outcomes needed in value-based payment models.

CONCLUSION

A standard process of care provides the structure that all practitioners should follow and, when implemented correctly and consistently, can improve the quality of care provided to patients. It provides a common language that defines roles, responsibilities, and expectations. Comprehensive medication management involves a five-step process: collect, assess, plan, implement, and follow-up. A standard process of care informs the creation

of quality metrics and is the foundation of practitioner workflow, the structure of health information systems, and billing for patient care services.

ABBREVIATIONS

CMS	Centers for Medicare & Medicaid Services
CPT	current procedure terminology
HCPCS	Healthcare Common Procedural Coding System
ICD	International Classification of Disease
IT	information technology
LOINC	Logical Observation Identifiers Names and Codes
SNOMED-CT	CT Systematized Nomenclature of Medicine—Clinical Terms
SOAP	subjective, objective, assessment, plan

REFERENCES

1. Harris IM, Phillips B, Boyce E, et al. Clinical pharmacy should adopt a consistent process of direct patient care. *Pharmacotherapy*. 2014;34(8):e133–e148. doi: 10.1002/phar.1459.

2. Joint Commission of Pharmacy Practitioners. *Pharmacists' Patient Care Process*. May 29, 2014. Available at: https://jcpp.net/wp-content/uploads/2016/03/PatientCareProcess-with-supporting-organizations.pdf. Accessed August 19, 2021.

3. Cipolle JR, Strand L, Morley P. Pharmaceutical care as the professional practice for patient-centered medication management services. In: Cipolle JR, Strand L, Morley P, eds. *Pharmaceutical Care Practice: The Patient Centered Approach to Medication Management*. 3rd ed. New York, NY: McGraw-Hill Companies; 2012:37–72.

4. American Nurses Association. The Nursing Process. https://www.nursingworld.org/practice-policy/workforce/what-is-nursing/the-nursing-process/. Accessed August 11, 2021.

5. Writing Group of the Nutrition Care Process/Standardized Language Committee. Nutrition care process and model. Part I: The 2008 update. *J Am Diet Assoc.* 2008;108(7):1113–1117. doi: 10.1016/j.jada.2008.04.027.

6. Phillips RLJ, Klinkman M, Green LA. *Conference Report: Harmonizing Primary Care Clinical Classification and Data Standards*. Washington, DC; 2007. http://www.graham-center.org/content/dam/rgc/documents/publications-reports/monographs-books/harmonizing-primary-care.pdf. Accessed August 11, 2021.

7. ICPC Primary Health Care Classification Consortium. International Classification of Primary Care (ICPC-2) Process Codes update 2016. http://www.ph3c.org/4daction/w3_CatVisu/en/icpc.html?wCatIDAdmin=1106. Accessed August 11, 2021.

8. Lacey K, Pritchett E. Nutrition care process and model: ADA adopts road map to quality care and outcomes management. *J Am Diet Assoc.* 2003;103(8):1061–1072. doi: 10.1053/jada.2003.50564.

9. Tomajan K, Barker CR, Canariato SV, et al. *Recognition of a Nursing Specialty, Approval of a Speciality Nursing Scope of Practice Statement, and Acknowledgment of Specialty Nursing Standards of Practice*. Silver Spring, MD; 2010. https://www.nursingworld.org/~4989de/globalassets/practiceandpolicy/scope-of-practice/3sc-booklet-final-2017-08-17.pdf. Accessed August 11, 2021.

10. American Physical Therapy Association. *Guidelines: Physical Therapy Documentation of Patient/Client Management*. Alexandria, VA: 2009. https://www.apta.org/uploadedFiles/APTAorg/About_Us/Policies/BOD/Practice/DocumentationPatientClientMgmt.pdf. Accessed August 11, 2021.

11. Cipolle RJ, Strand L, Morley P. Toward a philosophy of pharmaceutical care practice. In: Cipolle RJ, Strand L, Morley P, eds. *Pharmaceutical Care Practice: The Patient-Centered Approach to Medication Management Services*. 3rd ed. New York, NY: McGraw-Hill Companies; 2012;94–100.

12. American Pharmacists Association. Code of Ethics for Pharmacists. Published 1994. https://portal.pharmacist.com/code-ethics. Accessed August 11, 2021.

13. American Pharmacists Association. Oath of a Pharmacist. Published November 2021. https://www.pharmacist.com/About/Oath-of-a-Pharmacist. Accessed July 29, 2022.

14. American Society of Hospital Pharmacists. ASHP Statement on Pharmaceutical Care. *Am J Hosp Pharm.* 1993;50:1720–1723.

15. Donabedian A. The quality of care: How can it be assessed? *JAMA.* 1988;260(12):1743–1748. doi: 10.1001/jama.1988.03410120089033.

16. Epstein RM, Street RL, Jr. The values and value of patient-centered care. *Ann Fam Med.* 2011;9(2):100–103. doi: 10.1370/afm.1239.

17. American College of Clinical Pharmacy. Standards of practice for clinical pharmacists. *Pharmacotherapy*. 2014;34(8):794–797. doi: 10.1002/phar.1438.

18. Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academies Press; 2001. doi: 10.17226/12019.

19. Berwick DM, Nolan TW, Whittington J. The triple aim: Care, health, and cost. *Health Aff.* 2008;27(3):759–769. doi: 10.1377/hlthaff.27.3.759.

20. Loehrer S, Feeley D, Berwick D. 10 New rules to accelerate healthcare redesign. Bold aspirations to guide healthcare organizations during an era of reform. *Healthc Exec.* 30(6):66, 68–69. [PubMed: 26677564]

21. American Dental Hygienists' Association. *Standards for Clinical Dental Hygiene Practice*. Chicago, IL: American Dental Hygienists' Association; Revised 2016. https://www.adha.org/resources-docs/2016-Revised-Standards-for-Clinical-Dental-Hygiene-Practice.pdf.

22. McInnis T, Strand L, Webb CE. *Integrating Comprehensive Medication Management to Optimize Patient Outcomes: Resource Guide*. 2nd ed. 2012. https://www.pcpcc.org/sites/default/files/media/medmanagement.pdf.

23. The Patient Care Process for Delivering Comprehensive Medication Management (CMM): Optimizing Medication Use in Patient-Centered, Team-Based Care Settings. CMM in Primary Care Research Team. July 2018. Available at: http://www.accp.com/cmm_care_process.

24. Briesacher BA, Andrade SE, Fouayzi H, Chan KA. Comparison of drug adherence rates among patients with seven different medical conditions. *Pharmacotherapy*. 2008;28(4):437–443. doi: 10.1592/phco.28.4.437.

25. Yeaw J, Benner JS, Walt JG, Sian S, Smith DB. Comparing adherence and persistence across 6 chronic medication classes. *J Manag Care Pharm.* 2009;15(9):728–740. doi: 10.18553/jmcp.2009.15.9.728.

26. Pharmacy Quality Alliance. *Medication Therapy Problem Categories Framework for PQA Measures*. Alexandria, VA: Pharmacy Quality Alliance; 2017.

27. Sorensen TD, Pestka DL, Brummel AR, Rehrauer DJ, Ekstrand MJ. Seeing the forest through the trees: Improving adherence alone will not optimize medication use. *J Manag Care Spec Pharm.* 2016;22(5):598–604. doi: 10.18553/jmcp.2016.22.5.598.

28. Isetts BJ, Schondelmeyer SW, Artz MB, et al. Clinical and economic outcomes of medication therapy management services: The Minnesota experience. *J Am Pharm Assoc.* 2008;48(2):203–214. doi: 10.1331/JAPhA.2008.07108.

29. Ramalho de Oliveira D, Brummel AR, Miller DB. Medication therapy management: 10 years of experience in a large integrated health care system. *J Manag Care Pharm.* 2010;16(3):185–195. doi: 10.18553/jmcp.2010.16.3.185.

30. Harris IM, Baker E, Berry T, et al. Developing a business-practice model for pharmacy services in ambulatory settings. *Pharmacotherapy*. 2008;28(2):285. doi: 10.1592/phco.28.2.285.

31. Donabedian A. Criteria, norms and standards of quality: What do they mean? *Am J Public Health*. 1981;71(4):409–412. [PubMed: 7468883]

32. Viswanathan M, Kahwati LC, Golin CE, et al. Medication therapy management interventions in outpatient settings. *JAMA Intern Med.* 2015;175(1):76. doi: 10.1001/jamainternmed.2014.5841.

33. Pharmacy Health Information Technology Collaborative. http://pharmacyhit.org/. Accessed July 29, 2022.

34. Centers for Medicare and Medicaid Services. *Evaluation and Management Services Guide*. Rockville, MD: Department of Health and Human Services; January 2022. https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/MLN-Publications-Items/CMS1243514. Accessed July 29, 2022.