CMM in Primary Care Research Team

The *Patient Care Process* for Delivering Comprehensive Medication Management (CMM)

Optimizing Medication Use in Patient-Centered, Team-Based Care Settings

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Acknowledgements

Funding for this research was provided by The American College of Clinical Pharmacy (ACCP), the American College of Clinical Pharmacy Research Institute, and the UNC Eshelman Institute for Innovation.

Citation for this Document

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*

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We would like to acknowledge the following members of the CMM in Primary Care Research team who contributed significantly to the development of this document:

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We would like to acknowledge and thank the clinical pharmacists affiliated with the 35 primary care practice sites located in Minnesota, North Carolina, New York, and New Mexico for engaging in multiple interviews and assessments that led to the development of this document. Their insights were invaluable in both the creation and refinement of this common language.

We also thank members of our Grant Steering Committee and our Payer and Policy Advisory Board for insights provided over the past two years that have helped shape our thinking around this document. A very special thank you to Candace Dematteis, Managing Director with Policy Breakthroughs, LLC and Jon Easter, Director, Center for Medication Optimization (CMO) at the UNC Eshelman School of Pharmacy for their thoughtful review and insights into the positioning and dissemination of this document.

Introduction

The Problem

The U.S. healthcare system is unsustainable and there is no question that significant shifts in how care is delivered and financed are needed. The movement to value-based health care is challenging health care providers to meet both efficiency and quality benchmarks while managing large, diverse, and often complex patient populations. Sixty percent of American adults live with at least one chronic condition and 42 percent have more than one.[1] These individuals account for hundreds of billions of dollars in health care spending every year.[1,2] A large contributor to poor quality care and rising health care costs is the overuse, underuse, and misuse of medications as well as the significant rise in prescription drug spending.[3-5] The reliance on prescription medicines as first line treatment for many acute and most chronic conditions is evidenced by the fact that, on average, 70 percent of Americans take at least one prescription medicine a month, 50 percent take two or more per month, and 20 percent of Americans are on 5 or more prescription medications at any time.[3-5] It has been well documented that prescription drug spending exceeds $300 billion and an almost equal amount is spent resolving the improper and unnecessary use of medicines, suggesting that for every dollar spent on drugs, nearly an additional dollar is spent addressing a medication misadventure.[3-5] Most concerning is the impact this has on patients. Individuals with multiple chronic conditions face numerous complexities in managing their medications. Effectively addressing the misuse, underuse, and overuse of medications presents a significant, largely untapped opportunity to meet cost and quality benchmarks and improve patient care.

The Opportunity

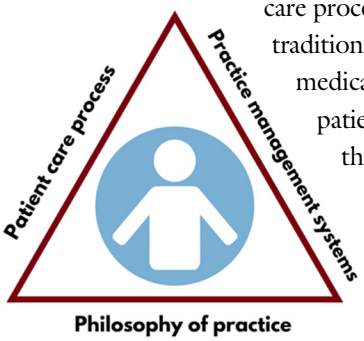
The integration of clinical services focused on optimizing medication use into patient care may help primary care providers, specialists, and other members of the health care team meet the quadruple aims of improving population health, increasing patient satisfaction, reducing per-capita health care costs, and addressing provider satisfaction. Comprehensive medication management (CMM) holds promise as a key strategy for meeting these goals.[6,7] Though prior research has demonstrated some positive impact on quality and cost, there remains wide variability in the outcomes associated with medication management services.[8] These findings may be largely attributed to the lack of a well-defined intervention, lack of a well-defined patient population, and inconsistent implementation.[8]

Reported outcomes associated with medication management services are varied. Lack of a well-defined clinical intervention, leading to inconsistent implementation of the intervention, is cited as a critical factor likely responsible for producing this variability.

Defining an intervention and ensuring consistency in delivery is necessary to establish a common understanding and set of expectations across key stakeholder groups including patients, pharmacists, physicians, other health care providers, and payers. This also allows the service to be recognized as distinct, yet complementary to care provided by the primary or specialty care provider. An intervention, such as CMM, focused on optimizing medication use must be defined with a degree of specificity that allows consistent training of clinical pharmacists and other health care providers, replication of the service, and observable fidelity of the service across practitioners.

Current research is aiming to address some of these factors to ensure that CMM as a key strategy for optimizing medication use is well defined, can be replicated with consistency and fidelity across care settings, yields positive outcomes and impact on patient care, and is supported by a business case for scaling and sustaining the service. This document presents findings from this research to both frame and operationally define CMM as a core strategy to optimize medication use in the outpatient, ambulatory setting for patients with multiple chronic conditions.

A Framework for Comprehensive Medication Management



Comprehensive medication management (CMM) is a patient-centered approach to optimizing medication use and improving patient health outcomes that is delivered by a clinical pharmacist working in collaboration with the patient and other health care providers. This care process ensures each patient's medications (whether prescription, nonprescription, alternative, traditional, vitamins, or nutritional supplements) are individually assessed to determine that each medication has an appropriate *indication*, is *effective* for the medical condition and achieving defined patient and/or clinical goals, is *safe* given the comorbidities and other medications being taken, and that the patient is able to take the medication as intended and adhere to the prescribed regimen.[6] As part of the CMM service, the clinical pharmacist develops an individualized medication therapy care plan in collaboration with the patient and the health care team that achieves the intended goals of therapy with appropriate follow-up to ensure optimal medication use and outcomes. This all occurs because the patient understands, agrees with, and actively participates in the process.[6]

Comprehensive medication management is framed conceptually around three core components of care:[9]

- **A Shared Philosophy of Practice:** A set of professional values and beliefs held within a discipline that serve to guide an individual practitioner's actions and behaviors and serve to instill trust in the care delivered. Having a shared philosophy is foundational to any patient-centered care practice. For CMM, the philosophy of practice establishes the values and beliefs that guide the clinical pharmacist's action and behaviors as a member of an interdisciplinary, patient-centered care team and serves to foster a pharmacist-patient and pharmacist-physician relationship that is built on trust. Appendix A outlines the core tenets of a Philosophy of Practice for CMM.[10]
- **The Patient Care Process:** The nature of work that occurs when a clinical pharmacist, working in collaboration with the patient and the healthcare team, provides care to an individual patient with the goal of optimizing medication use and improving the quality of their health care. Establishing a common language for this process is essential to ensure that the service is understood and valued as distinct from the care delivered by the patient's primary care provider, yet is complementary. It also allows the interdisciplinary team of health care providers and staff to understand the ways in which various members of the team contribute to the patient care process for optimizing medication use.
- **Practice Management:** The structural and system level supports within a practice related to practice management and operations that enable the efficiency, effectiveness, and sustainability of CMM services. For a service to be delivered consistently and produce expected outcomes, essential components for managing the practice must be in place.

Note: There are three core components of CMM, as described above. Through our research, we have studied and operationally defined each of these areas. This document articulates a common language for the *Patient Care Process for Delivering Comprehensive Medication Management*. Appendix A outlines the core tenets of the CMM Philosophy of Practice. The remaining core component (i.e., Practice Management Systems) has been the focus of recent work, with learnings forthcoming. In addition, electronic self-assessment tools for each of the three components are under development.

The Patient Care Process: A Common Language for Delivering Comprehensive Medication Management

Establishing a common language for the delivery of CMM is important to ensure a consistent approach to optimizing medication use to improve patient care. Articulating a consistent approach helps one to recall key steps in a process that could otherwise be easily overlooked, and it makes explicit the minimum, expected steps in a comprehensive process.

To arrive at a common language for the CMM patient care process, we relied on a rigorous research methodology that sought to define a "usable innovation" for optimizing medication use in patients with multiple chronic conditions using multiple medications.[11] The concept of a "usable innovation" is derived from the implementation science literature, which establishes that for an innovative intervention or service to be consistently implemented and reliably produce outcomes, it must include:

1. A clear description of the guiding principles or philosophy of practice,
2. A clear description of the "essential functions" that frame the service,
3. A clear description of the "operational definitions" that explicitly define how each essential function will be operationalized, and
4. A practical assessment of the performance of practitioners who are delivering the service (i.e., fidelity, which helps to ensure that the intervention is being implemented as intended).

An extensive literature search was conducted as part of this research to understand the nature of existing definitions of the patient care process for optimizing medication use as well as the essential components of comprehensive medication management. Briefly, this research builds on existing frameworks and standards of practice.[6-7, 12-13] ***Findings from this research validate the essential functions articulated in existing frameworks and standards of practice, but, importantly, enhance and extend prior work by explicitly defining how each essential function should be operationalized at a level where the service can be replicated and practitioner performance assessed.*** For example, the five essential functions derived through our research validate the core steps of the Joint Commission of Pharmacy Practitioner's *Pharmacists' Patient Care Process (PPCP)*; however, our work extends the PPCP by explicitly defining each of the essential functions and clearly articulating how each should be operationalized. This is key to ensuring consistent implementation, replication, and scale of an intervention or service.

Finally, it is important to note that the common language for the patient care process was the result of research conducted in the outpatient, ambulatory, team-based care setting for the delivery of comprehensive medication management, as defined above. Although it was developed in this setting, it is likely that the patient care process for delivering CMM can be easily adapted depending on context (e.g., acute care, care transitions, community-based pharmacy, targeted disease management). It is expected that this process is generally related to the clinical work of pharmacists, not specific to a single setting.

For Whom Did We Design this Resource?

Patients—Establishing a medication regimen that meets all of a patient's personal and clinical goals can be challenging. Thus, many patients can benefit from having a clinical pharmacist review all of their medication-related needs, and work with physicians and other healthcare providers to ensure that all indications for medications are met and each medication in the regimen is safe, effective, and convenient to take. This common language document gives patients insight into the care one should expect to receive from a clinical pharmacist providing comprehensive medication management. This document also highlights steps in the process that promote patient engagement to ensure their thoughts and experiences with their medications are considered in the development of their medication plan.

Clinical Pharmacists—This common language document was designed to create greater clarity and consistency in the approach to optimizing medication use through the delivery of CMM. It is essential that pharmacists adopt a consistent approach to practice. Non-pharmacists engaged in CMM (e.g., patients, medical providers, payers) need to be confident that the process of patient care will be consistently delivered regardless of which pharmacist is providing the service. The common language is not intended to be prescriptive, but offers a set of essential functions that are explicitly and operationally defined to facilitate consistency in the delivery of CMM.

Primary Care Providers and other Health Care Providers—To appreciate the value-added, complementary, patient care services delivered by the clinical pharmacist working as part of a care team, it becomes important to understand exactly what the pharmacist is doing in carrying out the service. In addition, the common language clearly articulates the highly collaborative role in optimizing a patient's medication use that occurs between the clinical pharmacist, a medical provider, the patient, and the rest of the health care team.

Payers—If interventions bring value, positively impact quality and cost, and improve the lives of patients, payers will want to know what it is that is contributing to this value, and, if they invest in it, what exactly it is that they are buying. Explicitly defining the intervention becomes key to not only ensuring consistency in the care that is delivered, but to knowing what it is one is investing in.

Students and Educators—"Perfect practice makes perfect performance" is a phrase critical to the education of health care practitioners. Preparation for consistent delivery of the patient care process in practice starts with a foundational understanding of the process at the earliest stages of practitioner development. A learner being indoctrinated to a health care discipline must fully understand the core elements and operational definitions of the care process that underpin the discipline in order to appreciate their unique contributions to health care. Likewise, specificity in the definition of the patient care process is essential to educators to support consistent instruction and assessment of all learners, not only in a single classroom or single school, but across all learners enrolled in all schools.

The *Patient Care Process* for Comprehensive Medication Management

Essential Functions	Operational Definitions[†]
Essential Function 1 ***Collect and Analyze Information*** The clinical pharmacist assures the collection of the necessary subjective and objective information about the patient and is responsible for analyzing information in order to understand the relevant medical/medication history and clinical status of the patient.	**1a.** Conduct a review of the medical record to gather relevant information (e.g., patient demographics, active medical problem list, immunization history, admission and discharge notes, office visit notes, laboratory values, diagnostic tests, medication lists). **1b.** Conduct a comprehensive review of medications and associated health and social history with the patient. You or a member of the interdisciplinary health care team member should: • Inquire as to whether the patient has any questions or concerns for the visit. • Review social history (e.g., alcohol, tobacco, caffeine, other substance use). • Review social determinants of health relevant to medication use (e.g., can the patient afford his/her medications, does 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 medication adverse 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 (e.g., name, strength and formulation, dose, frequency, duration). • Review the indication for each medication. • Review the effectiveness of each medication. • Review the safety of each medication. • Review the patient's adherence to his/her medications using available resources (e.g., ask the patient about adherence to each of his/her medications, claims data, pharmacy fill history). • Review the patient's medication experience (e.g., beliefs, expectations, and cultural considerations related to medications). • Determine the patient's personal goals of therapy.

Essential Functions	Operational Definitions[+]
Essential Function 1 *(Continued)* ***Collect and Analyze Information***	• Review how the patient manages his/her medications at home (e.g., independently or with help, pill boxes, calendars, reminders). • Gather any additional information that may be needed (e.g., information from physical assessment and/or review of systems, home monitored blood glucose readings, blood pressure readings, and/or relevant laboratory parameters). **1c.** Analyze information in preparation for formulating an assessment of medication therapy problems.
Essential Function 2 ***Assess the Information and Formulate a Medication Therapy Problem List*** The clinical pharmacist assesses the information collected and formulates a problem list consisting of the patient's active medical problems and medication therapy problems in order to prioritize recommendations to optimize medication use and achieve clinical goals.	**2a.** Assess and prioritize the patient's active medical conditions taking into account clinical and patient goals of therapy. **2b.** Assess the **indication** of each medication the patient is taking by considering 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?

Intentionality of "IESA" in Patient Assessment

The order of the medication assessment (i.e., indication, effectiveness, safety, adherence or IESA) is intentional and is outlined sequentially to guide the clinical pharmacist and the health care team through essential questions that must be considered in determining the appropriateness of each medication. In other words, one must determine whether an indication is correct for a medication before effectiveness, safety and adherence are considered. Ensuring adherence becomes a final step in the assessment. It is important to assess adherence once you know that a medication is indicated, is working and prescribed at a dose likely to achieve clinical goals, and is not causing an adverse effect. Therefore, the order of the assessment, while not intended to be prescriptive, is intentional.

Essential Functions	Operational Definitions†
Essential Function 2 *(Continued)* ***Assess the Information and Formulate a Medication Therapy Problem List***	**2c.** Assess the **effectiveness** of each medication the patient is taking by considering the following: • Is the patient meeting clinical goals of therapy? • Is the patient meeting overall personal goals of therapy? • Is the most appropriate drug product being used for the medical condition? • Is the dose, frequency, and duration appropriate for the patient? • Do additional labs need to be obtained to monitor the effectiveness of the medication therapy? **2d.** Assess the **safety** of each medication the patient is taking by considering the following: • Is the patient experiencing an allergy or adverse effect from a medication? • Is the dose too high for the patient? Is 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? **2e.** Assess **adherence** of each medication the patient is taking by considering the following: • Is the patient receiving the most affordable option to optimize adherence? • Is the patient able to obtain his/her medications, and, if not, why? • Are the medications taken at times during the day that are convenient for the patient? • Is the patient taking the medications as prescribed/instructed or missing doses? • If the patient is not taking as instructed or missing doses, why? • Is the frequency and formulation appropriate for the patient to optimize adherence? **2f.** Formulate a medication therapy problem list. See Appendix B: Medication Therapy Problem Categories, Pharmacy Quality Alliance. **2g.** Prioritize the patient's medication therapy problems.

Essential Functions	Operational Definitions[+]
Essential Function 3 ***Develop the Care Plan*** The clinical pharmacist develops an individualized, evidence-based care plan in collaboration with the healthcare team and the patient or caregiver.	**3a.** Develop a care plan in collaboration with the patient and the patient's health care providers to address the identified medication therapy problems. **3b.** Identify the monitoring parameters important to routinely assess indication, effectiveness, safety, and adherence. **3c.** Review all medication lists to arrive at an accurate and updated medication list. **3d.** Determine and coordinate who will implement components of the care plan (i.e., patient, clinical pharmacist, other health care provider). **3e.** Determine the type of follow-up needed. **3f.** Determine the appropriate timeframe for patient follow-up. **3g.** Determine the appropriate mode for follow-up (e.g., in person, electronically, by phone).
Essential Function 4 ***Implement the Care Plan*** The clinical pharmacist implements the care plan in collaboration with the healthcare team and the patient or caregiver.	**4a.** Discuss the care plan with the patient. **4b.** Ensure patient understanding and agreement with the plan and goals of therapy. **4c.** Provide personalized education to the patient on his/her medications and lifestyle modifications. **4d.** Provide the patient with an updated, accurate medication list. **4e.** Implement those recommendations that you as the clinical pharmacist have the ability to implement. **4f.** Communicate the care plan to the rest of the care team. If you cannot implement a recommendation(s) on your own, reach consensus on where implementation is required by another member of the team. **4g.** Document the encounter in the electronic health record (e.g., summary of relevant patient information, assessment, and plan, including rationale, monitoring, and follow-up). **4h.** Arrange patient follow-up. **4i.** Communicate instructions for follow-up with the patient.

Essential Functions	Operational Definitions[+]
Essential Function 5 ***Follow up and Monitor*** The clinical pharmacist provides ongoing follow-up and monitoring to optimize the care plan and identify and resolve medication therapy problems, with the goal of optimizing medication use and improving care.	**5a.** Provide targeted follow-up and monitoring (e.g., 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 assess general status of care, monitor blood sugar or blood pressure, adjust insulin, check INRs, provide education. **5b.** Repeat a comprehensive medication management visit at least annually, whereby all steps of the Patient Care Process are repeated to ensure continuity of care and ongoing medication optimization. **5c.** If the patient is no longer a candidate for CMM, ensure that a plan is in place for continuity of care with other care team members.

[+] It is well accepted that some steps (e.g., reviewing the medical record, physical assessment, inquiring about immunizations, alcohol, tobacco, caffeine) may not be necessary to carry out at each encounter, but are important steps in the process that should be operationalized, where and when appropriate, over the course of the longitudinal relationship with the patient.

A foundational element in the success of our comprehensive medication management program in the Fairview Health System is our expectation that all of our pharmacists deliver care using this patient care process. This ensures a level of consistency that builds trust with our medical staff, produces predictability in our data and allows us to establish recognition of the value our pharmacists contribute to our organization and the patients we serve. This is also paired with the accountability that our pharmacists have for ensuring that a patient's medication-related needs are met as a part of this process.

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Appendix A. The Philosophy of Practice for Comprehensive Medication Management[10]

Core Tenets

Meeting a societal need

Professions exist for the purpose of serving society, and thus it is important to consider how pharmacists are meeting the needs of society and our communities. As health care professionals highly trained in the science and application of medications, pharmacists serve a unique role of improving patient care by optimizing medication use for patients and populations.

Assuming responsibility for optimizing medication use

If pharmacists are to meet the needs of patients and society, they must assume responsibility for all of a patient's medication-related needs. This means delivering CMM consistently and holistically to assure that patients are taking appropriate, effective, and safe medications and that they are taking them as intended. This is achieved through identification, prevention, and resolution of medication therapy problems and empowering patients to improve their health. Applying a consistent approach to the CMM patient care process includes collecting and analyzing relevant patient information, formulating an assessment and plan for optimizing medication use, implementing the patient care plan, and providing ongoing follow-up and monitoring.

Embracing a patient-centered approach

Patient-centered care is defined as "providing care that is respectful of, and responsive to, individual patient preferences, needs and values, and ensuring that patient values guide all clinical decisions." This also includes being mindful and respectful of cultural beliefs as well as advocating for the patient to ensure their needs are met. Pharmacists should keep individual patient preferences at the center of their decisions and the care they provide.

Caring through an ongoing patient-pharmacist relationship

The patient-pharmacist relationship is a partnership between the patient and the pharmacist that is built on trust and formed for the purpose of optimizing the patient's medication experience. This involves relating to individuals through active listening and with understanding, respect, and warmth. It is an ongoing relationship of trust between the patient and the pharmacist.

Working as a collaborative member of the health care team

The provision of high-quality, team-based care to individuals involves collaborating with members of the health care team on shared goals in and across care settings. Consistently meeting the medication-related needs of patients cannot occur without collaboration among the health care professionals engaged in a patient's care. Therefore, it is essential that the pharmacist demonstrate a spirit of collaboration and embrace a team-based approach to care.

Appendix B. Medication Therapy Problem Categories Framework[14]

The Medication Therapy Problem (MTP) Categories Framework is a consensus-based document developed by the Pharmacy Quality Alliance's (PQA's) Measure Development Team (MDT), to provide a framework for development of measures involving MTPs. The framework is intended to standardize how MTPs identified during Medication Therapy Management (MTM) encounters are categorized within measures. The MDT incorporated input from numerous MTM providers and practices, and referred to MTP categories established in the literature.* This standard framework for use within measures will promote consistent categorization and coding of MTPs and the related actions/recommendations to resolve the MTPs.

Medication Related Needs	Medication Therapy Problem Category	Medication Therapy Problem Rationale
Indication	**Unnecessary medication therapy**	Duplicate Therapy
		No medical indication at this time
		Nonmedication therapy more appropriate
		Addiction/recreational medication use
		Treating avoidable adverse medication reaction
	Needs additional medication therapy	Preventive therapy
		Untreated condition
		Synergistic therapy
Effectiveness	**Ineffective medication**	More effective medication available
		Condition refractory to medication
		Dosage form inappropriate
	Dosage too low	Dose too low
		Frequency inappropriate
		Incorrect administration
		Medication interaction
		Incorrect storage
		Duration inappropriate
	Needs additional monitoring	Medication requires monitoring
Safety	**Adverse medication event**	Undesirable effect
		Unsafe medication for the patient
		Medication interaction
		Incorrect administration
		Allergic reaction
		Dosage increase/decrease too fast
	Dosage too high	Dose too high
		Frequency Inappropriate
		Duration inappropriate
		Medication interaction
	Needs additional monitoring	Medication requires monitoring
Adherence	**Adherence**	Does not understand instructions
		Patient prefers not to take
		Patient forgets to take
		Medication product not available
		Cannot swallow/administer medication
	Cost	More cost-effective medication available**
		Cannot afford medication product

* Cipolle RJ, Strand LM, Morley PC, Pharmaceutical Care Practice: The Patient-Centered Approach to Medication. Management. 3rd ed. New York, NY: McGraw-Hill 2012, p 157.

** Although the medication therapy problem rationale, more cost-effective medication available, is placed under the medication-related need of adherence, it may not necessarily relate to adherence directly or represent a patient-focused medication therapy problem.

As a physician leader, I know that team-based care is the most effective way to improve patient health and also manage costs. To function as the high performing team our patients need, it is essential that team members understand the role and care processes for each discipline on the team. This allows team members to share responsibilities effectively, efficiently and safely. Having confidence that the pharmacist on my team will consistently apply this standardized care process, regardless of who that pharmacist is, I am assured their work will align with our team goals. I can then give them the independence they need to do their job while I focus on the role I am expected to bring to the team.

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