

1. What is comprehensive medication management (CMM)?

Comprehensive medication management (CMM) is a process of care that can be used to help you manage patients that have not achieved clinical goals of therapy. CMM is the standard of care that ensures a patient's medications (e.g., prescription, nonprescription, alternative, traditional, vitamins, nutritional supplements) are individually assessed to determine that each medication is appropriate for the patient, effective for the medical condition, safe given the comorbidities and other medications and able to be taken by the patient as intended.¹ Evidence shows that implementing CMM improves clinical outcomes, reduces costs and enhances patient and physician satisfaction.² CMM is a team-based and patient-centered approach that asks: *Is this the right medication (or combination of medications) for this person?*

2. Which patients benefit most from CMM?

Among those who benefit the most are patients who:^{3,4}

- Have not reached or are not maintaining their intended therapeutic goals
- Experience adverse effects from their medications
- Have difficulty understanding, following or affording their medication regimen
- Take multiple medications
- Have multiple chronic conditions and/or multiple providers
- Need preventive therapy
- Are frequently readmitted to the hospital, emergency department, urgent care, etc.
- Are transitioning between health care settings, specialists and/or primary care
- Are at risk for sub-optimal clinical outcomes
- Have newly initiated medications requiring personalized education and ongoing assessment

3. Who provides CMM?

During the CMM process, a clinical pharmacist works with a physician under a collaborative practice agreement (CPA), or a formal framework that outlines the clinical pharmacist's clinical privileges, to develop an individualized medication plan that achieves the intended goals of therapy and includes appropriate follow-up to determine patient outcomes.⁵ The CMM clinical pharmacist has completed an accredited post-graduate residency or accrued equivalent post-licensure experience to prepare them for direct patient care practice. In addition, they may have achieved board certification through the Board of Pharmacy Specialties or other advanced practice credentials.

4. What is a collaborative practice agreement?

A collaborative practice agreement (CPA) creates a formal practice relationship between one or more physicians and qualified clinical pharmacists, working under defined and approved clinical privileges and protocols, to authorize clinical pharmacists to assume responsibility for performing patient assessments; ordering drug therapy–related laboratory tests; administering drugs and selecting, initiating, monitoring, continuing and adjusting drug regimens. In terms of medication management, the CPA, in accordance with state regulations, serves as the regulatory framework for clinical pharmacist delivery of CMM. In addition, a CPA designates the level of oversight and physician involvement required in the clinical pharmacy service.^{6,7} Currently, 49 states now allow pharmacist-physician CPAs (sans Delaware).

5. What are the roles and responsibilities of each member of the CMM process?

- **Physician:** Physicians evaluate and diagnose patient medical problems, documenting it into an electronic health record that a clinical pharmacist can access. Physicians identify patients that will benefit from CMM and work collaboratively with a clinical pharmacist and the patient to determine the most appropriate therapeutic intervention. The physician has an ongoing, longitudinal relationship with the patient.
- **Clinical Pharmacist:** [During the CMM process](#), the clinical pharmacist evaluates each patient’s medications to evaluate the risk for or presence of medication therapy problems. In collaboration with the patient’s physician, they prevent or resolve medication therapy problems and document their activities in the appropriate electronic health record to inform other patient-care team members. They continue to meet and follow-up with the patient as needed.
- **Patient:** Patients attend appointments with members of their care team and participate in the development and implementation of their plan of care and medication plan.
- **Other team members:** Nurses, nutritionists, physician assistants, case managers, social workers, etc. collaborate with the patient, physician and clinical pharmacist in CMM as needed.

6. How do I refer a patient and/or order CMM services?

When a physician identifies a patient in need of CMM services, they make a referral to the clinical pharmacist. The specific way in which this happens depends upon several factors including the proximity of the practitioner, the structure of the practice or the health system and the CMM design. If the clinical pharmacist is offsite (e.g., associated with a community pharmacy, health plan, hospital), it would be like any referral, such as those to a specialist, a social worker or nutritionist.⁸ Ideally, the practice would have a clinical pharmacist embedded within the clinic to allow for a warm hand-off between providers.

7. How does CMM benefit my colleagues and me?

CMM in practice allows you to work more efficiently as you achieve clinical therapeutic goals with your patients. Research shows that physicians benefit professionally and personally and spend less time on medication-related issues—including prior authorization—freeing them to focus on other critical components of patient care, leading to:^{9,10,11,12}

- **Better care:** Participants reported increased satisfaction that their patients were receiving better care and highlighted increased achievement of quality measures.
- **Improved work-life:** Physicians cited decreased workload and less mental exhaustion. Moreover, the impact of team-based clinical pharmacist-provided CMM aligns with previously identified methods for decreasing burnout among primary care physicians.
- **More time with patients:** With a clinical pharmacist on the team, physicians can dedicate more time to diagnostic dilemmas, build relationships with their patients and focus on higher complexity cases. This enables them to provide efficient, cost-effective care.
- **Enhanced professional learning:** Collaborating with the clinical pharmacist provides the opportunity to learn more about certain medications and apply that knowledge to other patients.

8. Beyond improving outcomes, how will access to CMM services affect my patients?

CMM is associated with high patient satisfaction. One study found that 93% of patients felt the service was “extremely” or “very helpful,” noting the positive changes made to their medication regimens, and 89% said they would refer friends or family for a medication review.¹³ Patients find CMM valuable and are engaged and empowered in their use and understanding of their medications.^{14,15} Specifically, CMM can improve their overall health and wellbeing, improve medication adherence, help them reach and maintain their therapy goals, minimize medication adverse effects by discontinuing or altering medications that are not appropriate and improve their understanding of medications.^{16,17,18,19}

9. Is CMM just about adding additional medications?

No, it’s about ensuring appropriate, safe and effective use of medications for each patient. Therefore, a medication can be added, discontinued, adjusted or replaced by a more tolerated and/or less costly alternative.

10. If I have an adherence program, am I providing CMM?

No, adherence is just one factor of medication therapy problems. Inadequate therapies (e.g., dose too low, different or additional drug needed, wrong drug) accounts for more than half of medication problems encountered (56.86%), whereas non-adherence makes up about 14.89%. Also included are, adverse reactions (14.74%), dose too high (6.83%) and unnecessary therapies (6.68%).²⁰ While adherence is important, the patient could adhere to the wrong medication which could make them sicker.

11. What is the value of CMM? How does CMM help control costs?

CMM improves outcomes and reduces costs for patients and the health care system through reduced adverse drug events (e.g. purchasing medications determined to be safe, appropriate and effective) and improved adherence. Research shows that illness and death resulting from nonoptimized medication therapy costs \$528.4 billion annually, representing 16% of total U.S. health care expenditures in 2016.²¹

The return on investment (ROI), or how much value the service adds compared to the cost of delivering the service, is an important consideration for risk-based contracting. Research demonstrates that CMM services yield a ROI as high as 12:1 and an average of 3:1 to 5:1.^{22,23,24} ROI is achieved through fewer hospital admissions, physician visits and emergency department visits—all of which are the result of reduced use of unnecessary and inappropriate medications.

12. Who pays for CMM?

Value-based payment models offer the greatest promise for advancing services that optimize medication use through CMM in practice as we transition from fee-for-service with models that offer shared savings and achievement of bonus payments. The Center for Medicare and Medicaid Innovation is testing data-driven approaches to care delivery and payment that are drawn from innovative practices of health care providers and other partners in the health care community that may include CMM services.²⁵

Many health plans pay for CMM services through fee-for-service and risk-bearing arrangements. Funding and reimbursement come from several sources, including some Medicaid fee-for-service, self-pay, ACO contracts and 340B savings reinvested into programs. Some programs seek grant funding with clinical partners as well. In fee-for-service models, CMM is often funded by enhanced physician access and efficiency. For example, team-based encounters allow for more total patient visits and higher complexity visits when the physician can rely on the clinical pharmacist to manage medication issues.

CMM delivery can be sustainable in value-based contracts through cost-savings generated from improved medication use or through practice-recognition incentives generated by meeting clinical metrics and improving care. For example, physicians may share in the savings achieved by reducing the total cost of care. Performance-based incentives may come from improved patient outcomes such as lowering A1C, cholesterol and blood pressure. MACRA (Medicare Access and CHIP Reauthorization Act of 2015), for example, uses value-based payment models to give providers financial incentives to improve patient care while controlling costs.^{26,27}

13. Where do I find a CMM clinical pharmacist?

The CMM clinical pharmacist position's description should state that they are expected to collaborate with the patient's physician and other care team members to provide CMM. Product-oriented tasks, such as dispensing, are not usually part of these positions. Some options for locating a qualified CMM clinical pharmacist include:

- Contacting your local school of pharmacy
- Connecting with local, state or national pharmacy organizations
- Advertising for a CMM clinical pharmacist position

14. How is CMM different from MTM?

CMM was developed to address the shortcomings of MTM.

- Medication therapy management (MTM) is a covered benefit under the Medicare Part D prescription drug plan. Introduced by the Medicare Prescription Drug Improvement and Modernization Act (MMA) of 2003, drug plans are required to provide MTM programs for their beneficiaries.^{28,29} This early attempt to promote medication optimization has been limited by variation in both implementation and provision of the service. In addition, the pharmacist is siloed and works apart from the health care team.
- [CMM is a team-based](#), patient-centered approach to optimizing medication use to improve patient health outcomes and is delivered by a clinical pharmacist working in collaborative practice with the patient and other health care providers.³⁰ It has a set of essential functions and operational definitions that explicitly outline the steps required to deliver the intervention consistently. CMM is not ambiguous, the defined process ensures each patient's medications are individually assessed to determine that each medication is appropriate, effective, safe and achieves defined clinical goals specific to the patient.^{31,32}

Bottom line: MTM is medication-focused, and CMM is whole-person focused.

15. How is PGx testing used during the CMM process?

Pharmacogenomics (PGx) uses information about a person's genetic makeup, or genome, to choose the drugs and drug doses that are likely to work best for that particular person.³³ When integrated within a CMM program, PGx testing allows for a more precisely designed and fitted therapeutic treatment plan based on the unique characteristics of an individual patient's genetic profile. Value can be quantified by the overall effect of PGx testing integrated into CMM services, producing decreased costs, increased provider education and patient satisfaction, access to care and outcomes.³⁴

16. Where can I find out more about CMM?

A wealth of resources are available at the [GTMRx Learning Center](#). Others include the following:

- **Use cases** | [CMM in Practice](#)
- **Blog** | [Let doctors be doctors: CMM supports primary care](#). Paul Grundy MD.
- **Issue Brief** | [CMM in Team-Based Care](#). American College of Clinical Pharmacy.
- **Article** | Watanabe JH, McInnis T, Hirsch JD. [Cost of Prescription Drug-Related Morbidity and Mortality](#). Annals of Pharmacotherapy. 2018.
- **Article** | McFarland MS, Buck M, et al. [Assessing the Impact of Comprehensive Medication Management on Achievement of the Quadruple Aim](#). American Journal of Medicine. 2020.
- **Article** | Funk KA, Pestka DL, McClurg MR, Carroll JK, Sorensen, TD. [Primary Care Providers Believe that CMM Improves their Work-Life](#). Journal of the American Board of Family Medicine. 2019.
- **Article** | Teichman PG, Wan S. [How to Integrate Clinical Pharmacists into Primary Care](#). AAFP's Family Practice Management. 2021.

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