

Trends in delivery of comprehensive medication reviews by race and ethnicity, 2013-2021

Devika A. Shenoy, BS; Lauren Wilson, PhD; Joel Farley, PhD; Lynn DeGuzman, PharmD; Margie Snyder, PharmD; Antoinette B. Coe, PharmD, PhD; Lisa E. Hines, PharmD; Nicole Brandt, PharmD, MBA; Andrea DeVries, PhD; Anna Hung, PharmD, PhD, MS

Plain language summary

This study examined how Medicare Part D patients received comprehensive medication reviews (CMRs), like medication “checkups,” from 2013 to 2021. More checkups are happening, now mostly by phone instead of in-person. How patients received these services also differed by race and ethnicity; for example, Asian patients had the highest use of caregivers, whereas Black patients most often received the review themselves. Understanding these changes helps ensure everyone gets fair access to CMRs.

Implications for managed care pharmacy

Managed care plans must adapt to evolving CMR delivery. The shift to telephonic services and changing provider roles requires evaluating effectiveness across diverse populations. For example, Asian patients consistently used caregivers the most for these reviews, whereas Black patients had the highest rates of direct beneficiary involvement. Tailoring strategies to engage all beneficiaries effectively, especially as services become more remote, is vital for ensuring CMR programs help reduce disparities in medication management.

Author affiliations

School of Medicine, Duke University, Durham, NC (Shenoy); Department of Population Health Sciences, Duke University School of Medicine, Durham, NC (Wilson and Hung); Department of Pharmaceutical Care & Health Systems, University of Minnesota College of Pharmacy, Minneapolis (Farley); The Permanente Medical Group, Pleasanton, CA (DeGuzman); College of Pharmacy, Purdue University, West Lafayette, IN (Snyder); Department of Medicine, Indiana University School of Medicine, Indianapolis (Snyder); Center for Health Services Research, Regenstrief Institute, Inc, Indianapolis, IN (Snyder); Department of Clinical Pharmacy, University of Michigan College of Pharmacy, Ann Arbor (Coe); Pharmacy Quality Alliance, Alexandria, VA (Hines); Lamy Center on Drug Therapy and Aging, University of Maryland School of Pharmacy, Baltimore (Brandt); Humana Healthcare Research, Louisville, KY (DeVries); Duke-Margolis Center for Health Policy, Durham, NC (Hung); Center of Innovation to Accelerate Discovery and Practice Transformation, Durham VA Health Care System, Durham, NC (Hung).

AUTHOR CORRESPONDENCE:

Devika A. Shenoy, 1.480.395.2099;
das140@duke.edu

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ABSTRACT

BACKGROUND: Comprehensive medication reviews (CMRs) are a cornerstone of medication therapy management (MTM) for millions of Medicare Part D beneficiaries, designed to optimize medication use and health outcomes. However, uptake is inconsistent, with known disparities affecting groups such as Asian, Black, and Hispanic patients.

OBJECTIVE: To evaluate CMR trends from 2013 to 2021, analyzing changes in provider types, delivery methods, and recipients, with a particular focus on variations across Asian, Black, Hispanic, and White beneficiaries.

METHODS: Employing a serial cross-sectional design, we analyzed Part D MTM program data submitted to the Centers for Medicare & Medicaid Services (CMS) from 2013 through 2021, covering all MTM-eligible Medicare beneficiaries. To explore differences based on race and ethnicity, this dataset was linked with a 5% random sample of Medicare fee-for-service beneficiaries. Descriptive statistics were used to evaluate year-over-year trends in CMR provider categories, the methods of service delivery, and the individuals who received the CMR.

RESULTS: The volume of completed CMRs expanded more than 4-fold, increasing from 526,150 encounters in 2013 to more than 2 million by 2020, before a slight decrease in 2021. The proportion of CMRs delivered by plan or pharmacy benefit manager pharmacists declined from 40% in 2013 to 29% in 2021, and the share of reviews provided by MTM vendors and other pharmacist categories generally increased over the same period. Telephone consultations, already the primary mode of delivery, increased their share from 86% to 96% of all CMRs, whereas face-to-face services correspondingly decreased from 14% to 4% across all racial groups. The decline in face-to-face services was steepest for Asian (from 18% in 2013 to 7% by 2021) and Hispanic patients (from 18% in 2013 to 3% by 2021). Black individuals consistently had the highest rates of direct beneficiary involvement (88% in 2021) and the lowest caregiver use.

CONCLUSIONS: The substantial growth in CMR services represents a positive development in patient care. Nevertheless, the marked shifts toward telephonic delivery and changes in the types of providers and recipients engaged highlight a critical need for ongoing assessment.

Each year, approximately 4.5 million patients are eligible for medication therapy management (MTM) services through Medicare's Part D program.¹ The key MTM service, known as the comprehensive medication review (CMR), is provided annually and has specific requirements mandated by the Centers for Medicare & Medicaid Services (CMS).¹⁻³ During a CMR, a pharmacist (or similarly qualified provider) conducts a systematic, patient-centered evaluation of every prescription, over-the-counter product, and supplement that a patient uses, identifies medication therapy problems (MTPs), and delivers an individualized action plan and written summary.^{1,4}

Individual Part D plan sponsors (ie, insurance companies) administer CMR services, either through the plan directly or contracted out to a third party such as an MTM vendor. Each individual plan can set their own eligibility criteria to determine which patients are eligible for their MTM program, but these criteria must fall within CMS-specified thresholds. The 2021 thresholds for patient MTM eligibility criteria included (1) managing at minimum 2-3 chronic conditions, (2) taking at least 2-8 prescription drugs, and (3) high yearly Part D medication spending (\$4,396).⁵ In 2016, CMS began publicly benchmarking plans on the completion rate of CMR services for eligible patients, tying performance to Star Ratings and bonus payments.^{6,7} These policies have important implications: suboptimal medication use contributes to an estimated \$528 billion in preventable harm annually, and timely CMR

services have been shown to improve medication adherence, decrease inappropriate medication prescriptions, and reduce inpatient hospitalizations.⁸⁻¹¹

Despite the documented benefits of CMR services, benefits are only realized if eligible patients have equitable access to services. CMR services are currently underutilized: early cross-sectional analyses have revealed that Black, Asian, and Hispanic patients were significantly less likely than White patients to either receive or be eligible for CMR services, reflecting broader racial and ethnic differences in medication use and adherence.¹²⁻¹⁵ For example, among Medicare beneficiaries with Alzheimer disease and related dementias, Black patients had 9% lower odds of MTM enrollment than White patients (odds ratio=0.91, 95% CI=0.86-0.97).¹³ However, no studies to date have examined how trends in CMR services have changed over the past decade for different racial and ethnic groups. Tracking CMR trends over multiple years serves 2 purposes: it gauges the real-world impact of efforts to improve utilization of CMR services and highlights how structural inequities change over time. The objective of this study was to examine trends in how CMR services were delivered from 2013 to 2021. A secondary objective was to report how these trends differed by race and ethnicity. Such findings can help CMS regulators, plan sponsors, and clinicians target interventions so that the clinical and economic advantages of identifying MTPs can be experienced by all Medicare patients.

Methods

OVERVIEW AND DATA SOURCES

This was a serial, cross-sectional, exploratory study of Medicare patients who were eligible for MTM services via a CMR any year from 2013 to 2021. We used 2013-2021 MTM program data, which are based on information submitted by Part D plan sponsors to the CMS Health Plan Management System.¹⁶ The overall study cohort included both Medicare Advantage as well as Medicare fee-for-service beneficiaries enrolled in Part D prescription drug plans.

In a smaller subcohort, we linked the MTM program data to a random 5% sample of Medicare fee-for-service beneficiaries to enable reporting of CMR trends by race and ethnicity. Thus, overall trends and delivery trends are reported for both Medicare Advantage and fee-for-service beneficiaries, but racial and ethnic trends are only reported for fee-for-service beneficiaries. The institutional review board at Duke University Health System approved this study, and the study abided by the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guidelines.

MEASURES

CMR providers were reported in MTM program data for the first documented CMR and were categorized as (1) physician, registered nurse, licensed practical nurse, nurse practitioner, or physician's assistant; (2) local pharmacist or MTM vendor local pharmacist; (3) long-term care (LTC) consultant pharmacist, hospital pharmacist, pharmacy intern, or other; (4) plan or pharmacy benefit manager (PBM) pharmacist; (5) MTM vendor-in-house pharmacist; or (6) other pharmacist.

To further clarify the pharmacist definitions, category 2 includes community pharmacists that practice in a pharmacy that is accessible to the general public, including local pharmacists that have a contractual relationship with MTM vendors; category 3 includes pharmacists or interns in hospitals, nursing homes, and assisted living centers; category 4 includes pharmacists employed by a health insurance plan or PBMs (ie, third-party company that manages prescription drug programs); category 5 includes pharmacists who are directly employed by a company that specializes in providing MTM services to various health plans; and category 6 includes licensed pharmacists who provide MTM services but do not fall into any of the more specific categories listed (eg, local, LTC, hospital, or PBM). This may include pharmacists in roles such as academic faculty, pharmacists in specialized ambulatory care clinics, or independent consultant pharmacists who contract for various clinical services.

A CMR delivery method was reported in MTM program data and included (1) face-to-face, (2) telephone, (3) telehealth consultation (eg, video conferencing), and (4) other. CMR recipients were reported in MTM program data and included (1) beneficiaries, (2) prescribers, (3) caregivers, and (4) other authorized individuals.

STRATIFICATION VARIABLES

Race and ethnicity were based on Medicare enrollment data, which included the following categories: Asian, Black, Hispanic, White, North American Native, Other, and Unknown. Because of the small sample sizes, we did not report trends for North American Native individuals. Because of the small sample sizes and difficulty interpreting, we did not report trends for individuals with Other or Unknown race or ethnicity.

ANALYSIS

This was an exploratory study describing trends over time in terms of the provider type, delivery method, and recipient type for CMRs. Counts and proportions were reported for each year from 2013 to 2021 and stratified by race and ethnicity. All analyses were conducted in SAS version 9.4.

Results

OVERVIEW

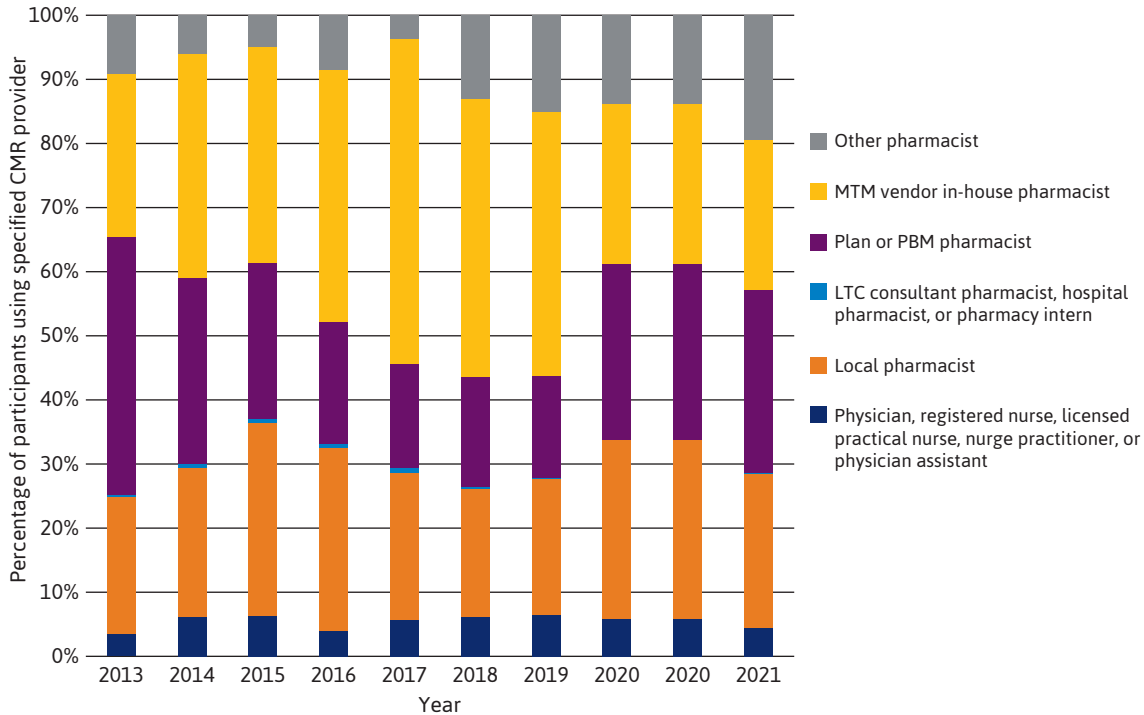
A total of 15,475,391 documented CMRs were analyzed between 2013 and 2021. From 2013 to 2021, the absolute volume of completed CMRs expanded from 526,150 encounters in 2013 to 2,188,102 in 2020, before decreasing slightly to 2,013,299 in 2021 ([Supplementary Table 1](#), available in online article).

CMR TRENDS BY PROVIDER, 2013-2021

Between 2013 and 2021, local pharmacists, plan or PBM pharmacists, and MTM vendor in-house pharmacists remained the most frequent providers of CMR services (Figure 1). The number of participants using their designated plan or PBM pharmacist reduced from 40% in 2013 to 29% in 2021 ([Supplementary Table 2](#)). Use of a local pharmacist was highest in 2015 (30%) and lowest in 2019 (21%). Physicians and LTC consultant pharmacists remained low providers of CMR services throughout the years analyzed. The percentage of other pharmacists increased from 9% (2013) to 19% (2021).

In 2013, plan or PBM pharmacists were the dominant source of CMRs for every racial and ethnic group, accounting for roughly 40%-46% of reviews (Figure 2). Over the next 5 years, Asian patients saw MTM vendor in-house pharmacist involvement grow from 21% in 2013 to a peak of

FIGURE 1 Trends in CMR Provider Type Among All Eligible Patients, 2013-2021



Bar chart depicting the percentage of overall CMR delivered by specified provider type. CMR=comprehensive medication review; LTC=long-term care; MTM=medication therapy management; PBM=pharmacy benefit manager.

43% in 2017 before declining to 30% by 2021, and MTM vendor in-house pharmacist involvement among Hispanic patients rose from 27% to a high of 46% in 2017, later settling at 30% in 2021 (Figure 2; [Supplementary Tables 3-6](#)). In contrast to these shifts, the proportion of CMRs provided by local pharmacists for Asian beneficiaries remained relatively consistent throughout the study period, starting at 23.7% in 2013 and ending at 26.4% in 2021. A similar trend was seen for consistent local pharmacist use for Black patients. For Black and White patients, vendor growth was more modest and plateaued after 2017, but the percentage of CMRs provided by a plan or PBM pharmacist still reduced from 40% (White patients) and 43% (Black patients) to 29% (White patients) and 30% (Black patients) ([Supplementary Tables 4 and 5](#)).

By 2021, the landscape had stabilized into a 3-way split: plan pharmacists supplied roughly 28%-30% of CMRs across all racial and ethnic groups, vendor pharmacists 20%-30%, and local community pharmacists a similar 22%-26%. Local pharmacists' gains were especially noticeable in

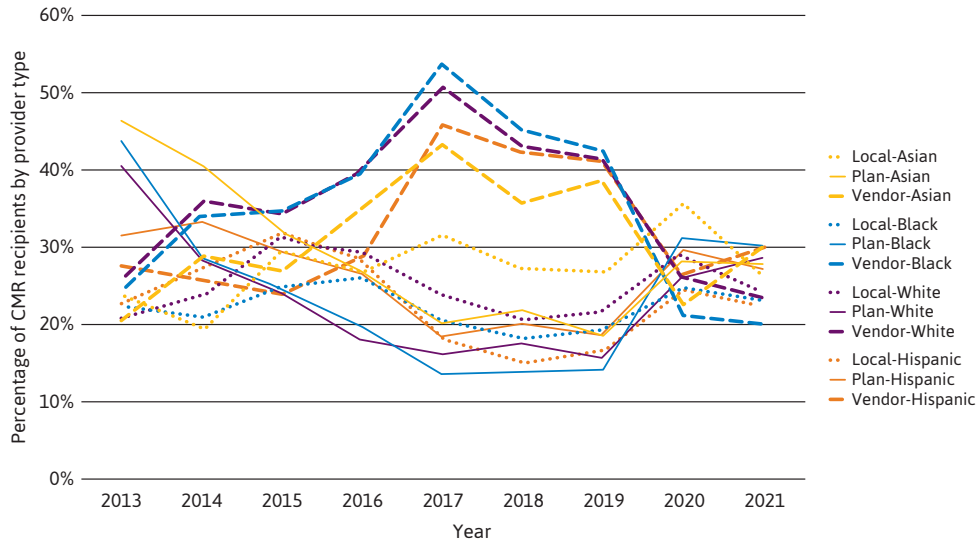
2020 (ie, the first COVID-19 pandemic year) when their share jumped 8%-10% across all groups.

CMR TRENDS BY DELIVERY METHOD, 2013-2021

In the overall sample, there was an increase in telephonic CMRs, for which the share rose from 86% to 96%, although they remained the predominant method of delivery throughout the study period ([Supplementary Table 7](#)). In contrast, face-to-face CMRs declined over time, decreasing from 14% to 4% of all reviews. Telehealth or “other” modalities remained negligible throughout the evaluated period (<0.1%).

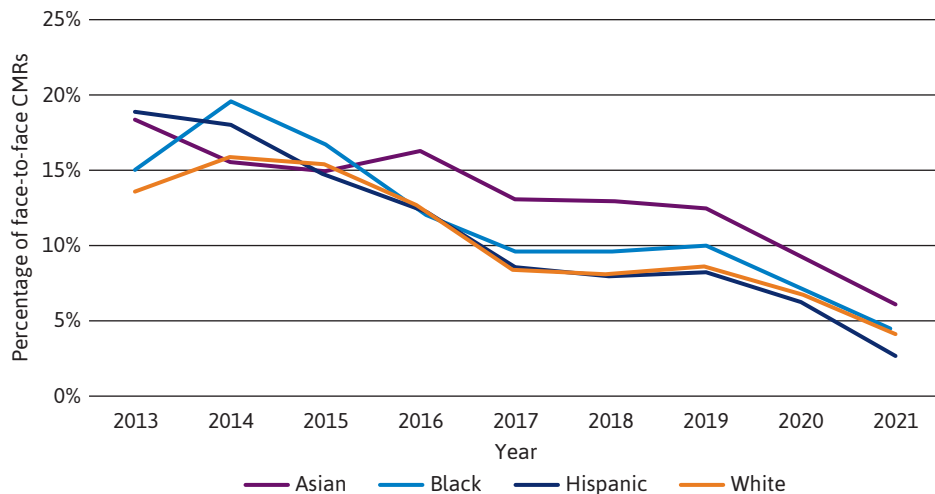
The share of CMRs delivered in person decreased for every racial group. Asian and Hispanic patients started in 2013 with the highest rates of face-to-face encounters (approximately 18%), but by 2021 fewer than 7% of Asian and only 3% of Hispanic individuals received CMRs in person (Figure 3). Black and White beneficiaries experienced parallel declines from approximately 14%-16% to 4% ([Supplementary Table 8](#)).

FIGURE 2 Trends in CMR Provider Type Among Medicare Fee-for-Service–Eligible Patients by Race and Ethnicity, 2013-2021

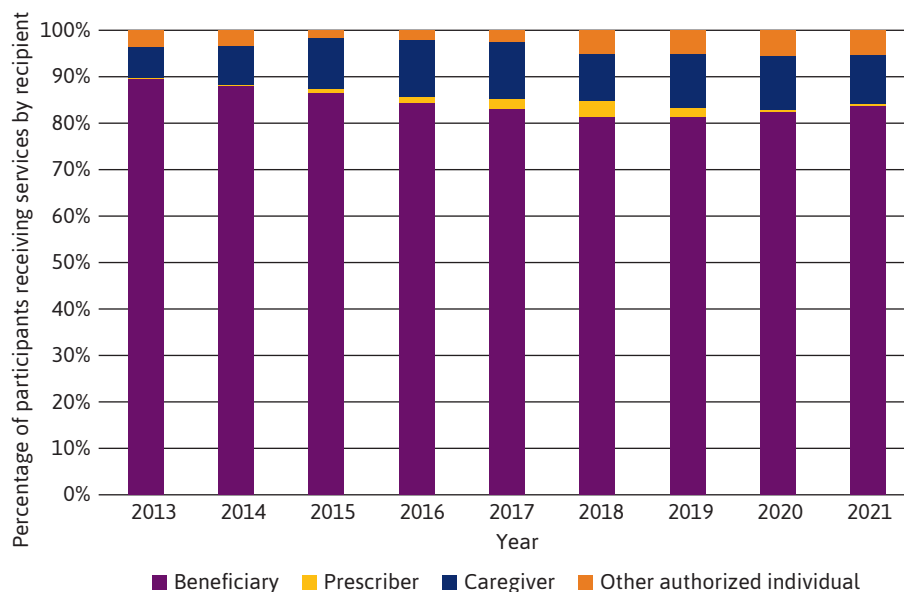


An overview of trends in the percentage of eligible beneficiaries receiving CMR services through the 3 most common provider types, including their local pharmacist (“local”), a plan or pharmacy benefit manager pharmacist (“plan”), or the medication therapy management vendor in-house pharmacist (“vendor”). The line type differentiates the provider type category: all local plan/PBM pharmacists are designated with a solid line, local pharmacists with a dotted line, and vendor pharmacists with a dashed line. Note that the figure restricts to the top 3 most common types of CMR providers to facilitate interpretation across multiple races and ethnicities. Race and ethnicity are differentiated by color, with Asian race (purple), Black race (blue), White race (red), and Hispanic ethnicity (green). For the additional types of CMR providers, see [Supplementary Tables 3-6](#).
 CMR = comprehensive medication review.

FIGURE 3 Trends in CMR Face-to-Face Deliveries Among Medicare Fee-for-Service–Eligible Patients by Race and Ethnicity, 2013-2021



An overview of trends in the percentage of eligible patients receiving CMR services through face-to-face delivery method only (n=64,359) between 2013 and 2021. Race and ethnicity are differentiated by color, with Asian race (purple), Black race (blue), White race (red), and Hispanic ethnicity (green).
 CMR = comprehensive medication review.

FIGURE 4 Trends in Comprehensive Medication Review Recipient Among All Eligible Patients, 2013-2021

Bar chart depicting the percentage of overall comprehensive medication reviews delivered by the recipient in relation to the eligible Medicare patient.

CMR TRENDS BY RECIPIENT OF CMR SERVICES, 2013-2021

Beneficiaries themselves continued to be the primary recipients of CMR services, but their share fell from 90% in 2013 to 84% in 2021 as the percentage of caregiver (6.5% in 2013 vs 11% in 2021) and other authorized individual (3.6% in 2013 vs 5% in 2021) recipients increased (Figure 4). Prescriber-directed CMRs remained rare (<2% annually; [Supplementary Table 9](#)). From 2013 to 2020, beneficiary recipients decreased from 90% to 83%, whereas caregivers/authorized representatives increased from 10% to 16% (Figure 4).

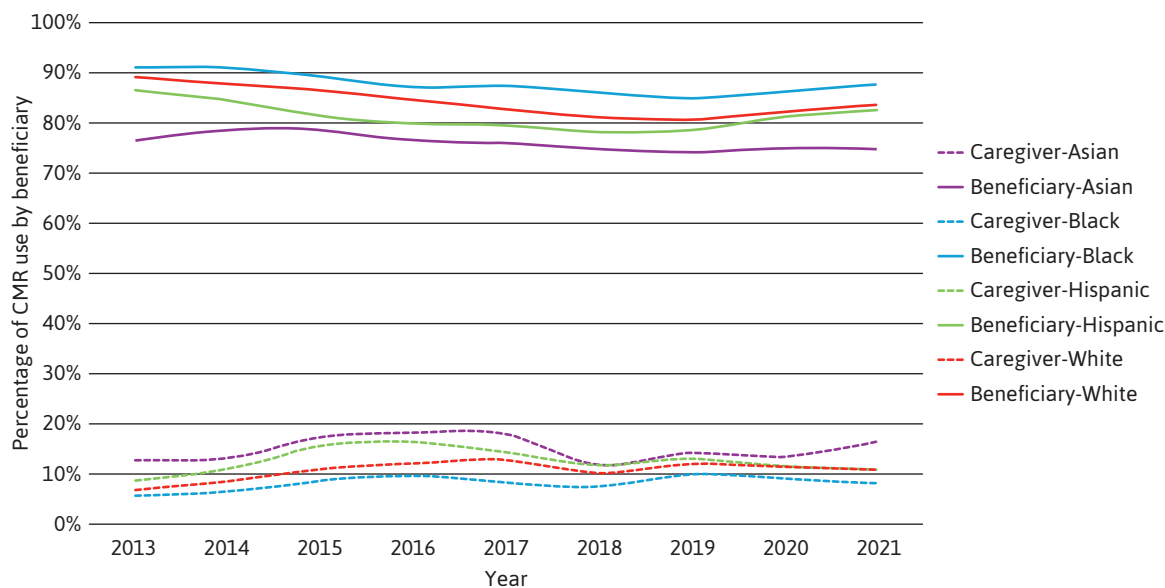
Overall, trends in CMR recipient type remained stable across the different racial and ethnic groups (Figure 5). Asian patients remained the group with the highest percentage of caregiver use and the lowest percentage of beneficiary use, whereas Black patients had the highest percentage of beneficiary use and the lowest percentage of caregiver use.

Among White and Black patients, beneficiary-directed encounters decreased from 89%-91% in 2013 to 84%-88% in 2021; for Asian and Hispanic patients, the decline was steeper, settling at approximately 75% and 83%, respectively ([Supplementary Tables 10-13](#)). Caregiver-mediated CMRs increased for every group, especially among Asian (13% in 2013 vs 16% in 2021) and Hispanic patients (9% in 2013 vs 11% in 2021). Prescriber-directed CMRs remained rare (<2% in any year) and showed only brief upticks among Asian patients in 2016-2018.

Discussion

This study examined 2013-2021 trends in CMR provider type, delivery method, and recipient, focusing on racial and ethnic differences. Findings reveal expanded CMR volume, shifts in providers and delivery methods, and evolving recipient engagement, all with implications for equitable access and quality. Understanding these trends is vital, as equitable access to CMRs is a key strategy for improving medication adherence, reducing hospitalizations, and mitigating poor clinical outcomes, particularly among vulnerable populations.⁸⁻¹¹

The more than 4-fold increase in completed CMRs between 2013 and 2020, before a slight dip in 2021, underscores the growing footprint of the MTM program. Although the precise cause is unknown, this may reflect ongoing health system disruptions during the second year of the COVID-19 pandemic or shifts in MTM vendor contracting by health plans. This expansion likely reflects the influence of CMS policies initiated in 2016, such as public benchmarking of plan performance on CMR completion rates and linking these to Star Ratings and financial bonuses.⁷ The CMR completion rate is a single-weighted measure in the Part D Star Ratings program that can influence a plan's overall score.¹⁷ Plans achieving high ratings of 4 stars or more receive substantial quality bonus payments, creating a financial incentive to maximize CMR completion. This footprint is likely

FIGURE 5 Trends in CMR Recipient Among Medicare Fee-for-Service–Eligible Patients by Race and Ethnicity, 2013–2021

An overview of trends in the recipient ($n=661,434$) of CMR services between 2013 and 2021. Race and ethnicity are differentiated by color, with Asian race (purple), Black race (blue), White race (red), and Hispanic ethnicity (green). The figure is restricted to the top 2 most common types of CMR recipients to facilitate interpretation across multiple races and ethnicities. For the additional types of CMR recipients, see [Supplementary Tables 10-13](#). CMR = comprehensive medication review.

expected to grow given the 2025 changes in eligibility, which lower the medication expense threshold from \$4,376 to \$1,276.¹⁶ Given this change in eligibility criteria, the estimated number of MTM-eligible patients will increase drastically (from 3.6 million to 7.1 million).¹⁶ It is unclear if the trends identified by this study will remain, and future studies should monitor how the increased eligibility affects access to and quality of CMR services by race, ethnicity, and other sociodemographic indicators.

A key transformation occurred in the CMR provider landscape. In 2013, plan or PBM pharmacists were the predominant source of CMRs, but by 2021, their dominance decreased from 40% to 29%. This was accompanied by a rise in local community pharmacist and “other” pharmacist involvement, especially during 2020. In-house vendor pharmacists peaked in 2017 and then decreased, which may reflect plans’ initial efforts to rapidly increase their completion rates in response to the 2016 addition of CMR rates to Star Ratings.⁷ Overall, this shift suggests plans are diversifying MTM delivery, potentially using vendors for scalability, whereas the pandemic-era surge in local pharmacist involvement may reflect the reliance on accessible

community providers, who adapted by shifting their services from in-person to telephonic delivery.^{18,19} For example, as mail-order prescription use increased, local pharmacies may have adapted to the pandemic by expanding services like telephonic MTM to increase revenue and provide residents with teaching opportunities while leveraging their positions as highly accessible points of care.¹⁹⁻²¹ Because CMRs directly support Part D measures and can influence other ratings (eg, those pertaining to medication adherence), plans may have pursued more integrated and flexible delivery models. Local pharmacies’ roles may have also grown because of value-based contracts, technological advancements, and better workflow integration.²² Local pharmacies’ trusted relationships with patients may boost engagement, and their ability to collaborate with prescribers supports therapy optimization. However, it is important to acknowledge that widespread community and chain pharmacy closures occurring since 2021 (eg, CVS announcing the closure of 900 pharmacies) may change this provider access point and could potentially reverse the gains in local pharmacist involvement that we observed.²³ Future studies should explore how these trends have changed since 2021.

Additionally, in our study by 2021, plan pharmacists, vendor in-house pharmacists, and local community pharmacists each supplied roughly one-quarter to one-third of CMRs across racial and ethnic groups. This suggests that although racial and ethnic disparities in CMR access have been documented in other studies,¹²⁻¹⁵ there are no large differences in the percentage of CMRs delivered by different providers. It is important to note, however, that this stability occurred within the context of a 4-fold increase in the total number of CMRs, meaning all provider types were delivering substantially more services to all patient groups over the study period.

In the overall cohort, the delivery method of CMRs underwent a dramatic shift. Of note, it is unknown to what extent this shift was mediated by the availability of in-person CMRs vs patient preference. Although telephonic CMRs were always the predominant delivery method, their share increased, whereas face-to-face encounters correspondingly shrank, with trends consistent across all racial and ethnic groups. Importantly, this downturn in in-person reviews began well before the COVID-19 pandemic but was sharply accelerated between 2019 and 2021. This suggests a broader systemic move toward remote service delivery, likely driven by factors such as cost-efficiency, convenience, and wider geographic reach, with the pandemic facilitating these transitions. However, this near-universal shift to telephone delivery raises crucial questions about equity, particularly concerning telephone reach, digital literacy, and the ability of pharmacists to establish rapport without face-to-face contact.^{24,25} For example, a study of older US adults found that Black and Hispanic individuals were less likely to have access to a working cell phone.²⁶ Of note, the types of MTPs that can be identified telephonically may also be limited, as performing direct physical assessments (including vitals) is not possible. This setting also limits a pharmacist's ability to observe nonverbal cues, such as gestures or facial expressions that indicate confusion, which are often critical for confirming patient understanding and building rapport. Moving forward, growth in telephonic CMRs necessitates focused efforts to ensure that this modality does not exacerbate existing inequities or create new ones. Policymakers should investigate and mitigate barriers related to telephone access, digital literacy, and language preferences across diverse populations.^{27,28} Future research is needed to compare the quality and effectiveness (eg, evaluating medication recommendations and medication changes) of telephone vs face-to-face CMRs to ensure clinical outcomes are maintained.

Regarding the recipients of CMR services, beneficiaries themselves remained the primary recipients, although their share decreased from 90% in 2013 to 84% in 2021. This was

accompanied by an increase in CMRs conducted with caregivers (from 6.5% to 11%) and other authorized individuals (3.6% to 5%). Updated guidance in the 2025 CMR instructions provides more explicit instructions, specifying that performing a CMR with an individual other than the beneficiary is permissible only when the beneficiary is unable to accept the offer because of cognitive impairment.²⁹ The memo distinguishes this from situations in which beneficiaries invite a caregiver to join them in the review, which is also permissible. This trend may reflect an aging population with more complex care needs requiring caregiver support.^{30,31} This may also reflect an opportunity to educate caregivers about CMR availability and purpose. Notably, Asian individuals consistently had the highest percentage of caregiver involvement and the lowest direct beneficiary use, whereas Black individuals showed the opposite pattern. Prescriber-directed CMRs remained consistently low throughout the period. These differences in recipients have implications for planning interventions to improve CMR use: certain communities, such as those with high numbers of Asian and Hispanic beneficiaries, may benefit from interventions that engage caretakers and other family members. Plan sponsors should encourage and potentially incentivize the development and implementation of culturally tailored outreach strategies to promote caregiver knowledge of CMRs, which includes understanding and respecting diverse family structures and communication preferences.

LIMITATIONS

This study has several limitations. First, all findings reported by racial and ethnic subgroups were based on a Medicare fee-for-service beneficiary population, so these subgroup results are not generalizable to other populations, such as the Medicare Advantage population. In addition to evaluating these differences in Medicare Advantage populations, future studies should consider comparing results between this population and the fee-for-service population. Second, race and ethnicity were classified based on the Medicare enrollment data, which may misclassify some beneficiaries, particularly those of mixed heritage. Third, this study was exploratory and descriptive in nature so comparisons across race and ethnicity were intentionally unadjusted. Additionally, administrative files identify receipt of CMR services but not the quality of CMR service.

Lastly, this study was unable to examine trends in overall CMR use (eg, the number of eligible patients vs the number of documented CMRs) owing to data limitations. This was also because of the unknown significance of percentages as a metric: following the inclusion of the CMR completion rate as

a Star Ratings measure in 2016, Part D sponsors have had the flexibility to set their own MTM eligibility criteria within CMS-specified ranges.⁷ This has led to significant variability in the size and composition of the eligible population (the denominator) across plans and over time, making longitudinal comparisons of completion rates based on plan-reported data potentially misleading. Although creating a standardized denominator using uniform criteria is an alternative, this was not feasible for the entire study cohort because of data limitations. Despite these limitations, key strengths of the study included (1) a relatively long time frame (9 years) to examine trends, (2) an overall study cohort that included MTM-eligible patients from fee-for-service plans and additional Medicare Advantage beneficiaries for the overall cohort, and (3) a subcohort that allowed for a descriptive comparison of trends across race and ethnicity that was representative of MTM-eligible Medicare fee-for-service beneficiaries.

Conclusions

In conclusion, although the expansion of the MTM program and CMR services is a positive development, the significant shifts in how these services are delivered and by whom necessitate a proactive approach to ensure that the clinical and economic benefits of CMRs are distributed equitably to all Medicare beneficiaries. The different patterns of CMR receipt, such as higher caregiver involvement for Asian patients and higher direct participation for Black patients, highlight that a uniform outreach strategy alone is inadequate. Addressing potential barriers associated with remote delivery and tailoring services to meet diverse patient and caregiver needs will be important in addressing structural inequities in medication management.

DISCLOSURES

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REFERENCES

1. Pestka DL, Zillich AJ, Coe AB, et al. Nationwide estimates of medication therapy management delivery under the Medicare prescription drug benefit. *J Am Pharm Assoc* (2003). 2020;60(3):456-61. doi:10.1016/j.japh.2019.12.002
2. Brandt NJ, Cooke CE. Centers for Medicare and Medicaid services support for medication therapy management (enhanced medication therapy management): Testing strategies for improving medication use among beneficiaries enrolled in Medicare Part D. *Clin Geriatr Med*. 2017;33(2):153-64. doi:10.1016/j.cger.2017.01.001

3. Lee JS, Yang J, Stockl KM, Lew H, Solow BK. Evaluation of eligibility criteria used to identify patients for medication therapy management services: A retrospective cohort study in a Medicare Advantage Part D population. *J Manag Care Spec Pharm*. 2016;22(1):22-30. doi:10.18553/jmcp.2016.22.1.22
4. Centers for Medicare & Medicaid Services. Part D enhanced medication therapy management model. Accessed May 20, 2025. <https://innovation.cms.gov/innovation-models/enhancedmtm>
5. Chavez-Valdez AL. Contract year 2022 Part D medication therapy management program guidance and submission instructions. Published April 30, 2021. Accessed August 6, 2025. <https://www.cms.gov/files/document/memo-contract-year-2022-medication-therapy-management-mtm-program-submission-v-043021.pdf>
6. Miller DE, Roane TE, Salo JA, Hardin HC. Evaluation of comprehensive medication review completion rates using 3 patient outreach models. *J Manag Care Spec Pharm*. 2016;22(7):796-800. doi:10.18553/jmcp.2016.22.7.796
7. Hung A, Wilson L, Smith VA, et al. Comprehensive medication review completion rates and disparities after Medicare Star rating measure. *JAMA Health Forum*. 2024;5(5):e240807. doi:10.1001/jamahealthforum.2024.0807
8. Watanabe JH, McInnis T, Hirsch JD. Cost of prescription drug-related morbidity and mortality. *Ann Pharmacother*. 2018;52(9):829-37. doi:10.1177/1060028018765159
9. Ferries E, Dye JT, Hall B, Ndehi L, Schwab P, Vaccaro J. Comparison of medication therapy management services and their effects on health care utilization and medication adherence. *J Manag Care Spec Pharm*. 2019;25(6):688-95. doi:10.18553/jmcp.2019.25.6.688
10. Dong X, Tsang CCS, Zhao S, et al. Effects of the Medicare Part D comprehensive medication review on medication adherence among patients with Alzheimer's disease. *Curr Med Res Opin*. 2021;37(9):1581-8. doi:10.1080/03007995.2021.1935224

REFERENCES continued

11. Hung A, Wilson LE, Smith VA, et al. Impact of comprehensive medication reviews on potentially inappropriate medication discontinuation in Medicare beneficiaries. *J Am Geriatr Soc*. 2024;72(8):2347-58. doi:10.1111/jgs.19013
12. Wang J, Qiao Y, Shih YC, et al. Potential health implications of medication therapy management eligibility criteria in the Patient Protection and Affordable Care Act across racial and ethnic groups. *J Manag Care Spec Pharm*. 2015;21(11):993-1003. doi:10.18553/jmcp.2015.21.11.993
13. Browning JA, Tsang CCS, Dong X, et al. Effects of Medicare comprehensive medication review on racial/ethnic disparities in nonadherence to statin medications among patients with Alzheimer's disease: An observational analysis. *BMC Health Serv Res*. 2022;22(1):159. doi:10.1186/s12913-022-07483-8
14. Chou J, Pellegrin K, Cooke CE, et al. Understanding the socioeconomic and geographical characteristics of beneficiaries receiving a comprehensive medication review. *J Manag Care Spec Pharm*. 2020;26(10):1276-81. doi:10.18553/jmcp.2020.26.10.1276
15. Allen A, Hung A. Racial and ethnic disparities related to the Medicare Part D medication therapy management program. *J Manag Care Spec Pharm*. 2024;30(6):609-16. doi:10.18553/jmcp.2024.30.6.609
16. Becerra X. Medicare program; changes to the Medicare Advantage and the Medicare Prescription Drug Benefit program for contract year 2024—Remaining provisions and contract year 2025 policy and technical changes to the Medicare Advantage program, Medicare prescription drug benefit program, Medicare cost plan program, and programs of all inclusive care for the elderly (PACE). Centers for Medicare and Medicaid Services. Published April 23, 2024. Accessed June 2, 2025. <https://public-inspection.federalregister.gov/2024-07105.pdf>
17. Borrelli EP, Saad P, Barnes N, Lucaci JD. The influence of medication adherence on Medicare Star Ratings: A decade-long analysis of health plan performance. *J Manag Care Spec Pharm*. 2025;31(5):512-9. doi:10.18553/jmcp.2025.31.5.512
18. Akour A, Elayah E, Tubeileh R, Hammad A, Ya'Acoub R, Al-Tammemi AB. Role of community pharmacists in medication management during COVID-19 lockdown. *Pathog Glob Health*. 2021;115(3):168-77. doi:10.1080/20477724.2021.1884806
19. Kambayashi D, Manabe T, Hirohara M. Adaptations in the role of pharmacists under the conditions of the COVID-19 pandemic: A systematic review and meta-analysis. *BMC Health Serv Res*. 2023;23(1):72. doi:10.1186/s12913-023-09071-w
20. Pennock D, Barbour L, Green R, Fu D. A medication therapy management residency rotation adjusts to coronavirus disease 2019 constraints. *J Am Pharm Assoc (2003)*. 2021;61(4S):S7-11. doi:10.1016/j.japh.2021.01.024
21. Morden NE, Zhou W, Obermeyer Z, Skinner J. Receipt of medications for chronic disease during the first 2 years of the COVID-19 pandemic among enrollees in fee-for-service Medicare. *JAMA Netw Open*. 2023;6(5):e2313919. doi:10.1001/jamanetworkopen.2023.13919
22. Renfro CP, Turner K, Desai R, Counts J, Shea CM, Ferreri SP. Implementation process for comprehensive medication review in the community pharmacy setting. *J Am Pharm Assoc (2003)*. 2019;59(6):836-41.e2. doi:10.1016/j.japh.2019.07.007
23. Meyersohn N. Why your drug store is closing. CNN. Published October 16, 2024. Accessed August 6, 2025. <https://www.cnn.com/2024/10/16/business/walgreens-cvs-store-closures/index.html#:~:text=CVS%2C%20the%20largest%20US%20chain,closing%20up%20to%20500%20stores>
24. Chandrasekaran R. Telemedicine in the post-pandemic period: Understanding patterns of use and the influence of socioeconomic demographics, health status, and social determinants. *Telemed J e-Health*. 2024;30(2):480-9. doi:10.1089/tmj.2023.0277
25. Moulai K, Shanbehzadeh M, Bahaadinbeigy K, Kazemi-Arpanahi H. Survey of the patients' perspectives and preferences in adopting telepharmacy versus in-person visits to the pharmacy: A feasibility study during the COVID-19 pandemic. *BMC Med Inform Decis Mak*. 2022;22(1):99. doi:10.1186/s12911-022-01834-5
26. Suntai Z, Beltran SJ. The intersectional impact of race/ethnicity and sex on access to technology among older adults. *Gerontologist*. 2023;63(7):1162-71. doi:10.1093/geront/gnac178
27. Tan-McGrory A, Schwamm LH, Kirwan C, Betancourt JR, Barreto EA. Addressing virtual care disparities for patients with limited English proficiency. *Am J Manag Care*. 2022;28(1):36-40. doi:10.37765/ajmc.2022.88814
28. Gallegos-Rejas VM, Thomas EE, Kelly JT, Smith AC. A multi-stakeholder approach is needed to reduce the digital divide and encourage equitable access to telehealth. *J Telemed Telecare*. 2023;29(1):73-8. doi:10.1177/1357633X221107995
29. Duran VS. Contract year 2025 Part D medication therapy management program guidance and submission instructions. Centers for Medicare and Medicaid Services. Published May 6, 2024. Accessed August 6, 2025. <https://www.cms.gov/files/document/memo-contract-year-2025-medication-therapy-management-mtm-program-submission-v050624.pdf>
30. O'Connor R, Eifler M, Russell AM, et al. Caregiver involvement in managing medications among older adults with multiple chronic conditions. *J Am Geriatr Soc*. 2021;69(10):2916-22. doi:10.1111/jgs.17337
31. Code of Federal Regulations. 423.153 Drug utilization management, quality assurance, medication therapy management (MTM) programs, drug management programs, and access to Medicare Parts A and B claims data extracts. National Archives. Accessed June 27, 2025. <https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-B/part-423/subpart-D/section-423.153>