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Medicaid Managed Care's Effects on Costs, Access, and Quality: An Update

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Abstract

Medicaid is integral to public health because it insures one in five Americans and half of the nation's births. Nearly two-thirds of all Medicaid recipients are currently enrolled in a health maintenance organization (HMO). Proponents of HMOs argue that they can lower costs while maintaining access and quality. We critically reviewed 32 studies on Medicaid managed care (2011–2019). Authors reported state-specific cost savings and instances of increased access or quality with implementation or redesign of Medicaid managed-care programs. Studies on high-risk populations (e.g., disabled) found improvements in quality specific to a state or a high-risk population. A unique model of managed care (i.e., the Oregon Health Plan) was associated with reduced costs and improved access and quality, but results varied by comparison state. New trends in the literature focused on analysis of auto-assignment algorithms, provider networks, and plan quality. More analysis of costs jointly with access/quality is needed, as is research on managing long-term care among elderly and disabled Medicaid recipients.

INTRODUCTION

The Medicaid program now serves almost 1 in 5 Americans, costing the nation just over $600 billion in 2017 (23). This 2017 funding was shared by the federal government at $375 billion and state governments at $230 billion (6). Since the inception of Medicaid in 1965, states have operated their programs subject to federal eligibility and benefits guidelines. In the 1980s, federal policies helped to promote a move away from fee-for-service (FFS) and toward managed-care payment models (1). The financing and functioning of the Medicaid program are integral to public health as the program not only covers the poorest and most ill/disabled but also pays for half of all births in the nation. It is also the principal source of financing for long-term care services in the United States (25).

Initially, states used managed care to target pregnant women, children, and families, all of which are low-cost populations. States' use of comprehensive managed care increased with state-wide expansions, mandatory enrollment, and inclusion of long-term care in services covered. Consequently, a wider array of Medicaid recipients now receives a larger scope of their benefits through managed care. For the last ten years, half or more of the aged and disabled Medicaid recipients were enrolled in comprehensive managed care (7, 24). This growth has coincided with a shift toward administering benefits using fully capitated health maintenance organizations (HMOs) (10). As of today, nearly two-thirds of all Medicaid recipients are enrolled in an HMO. The Affordable Care Act's (ACA's) expansion was a major contributing factor in this growth; more than 80% of newly eligible adults were enrolled in a managed-care program, and a majority of those programs use HMOs to administer Medicaid benefits (21).

Early proponents of managed care argued that private insurers would be more effective at delivering higher-quality care and at reducing the cost of care. States also desired budget predictability (26). While there are incidences of success, research evaluating managed-care programs show that these initial hopes were largely unfounded. In his 2012 review, Sparer (46) summarized findings on the effect of Medicaid managed-care programs on costs, access, and quality of care. He concluded that there was evidence of small savings from Medicaid managed care at the national level and that there was some success at the state level. In terms of access, Sparer reported that Medicaid managed care could and sometimes did provide beneficiaries with improved access, but the scope and extent of such improvements varied across states. Although heterogeneity across state programs made generalizing findings a challenge, state programs often served as laboratories for testing new methods of service delivery. Lastly, Sparer noted that few studies carefully examined the effectiveness of disease and care management programs, and even fewer used Healthcare Effectiveness Data and Information Set (HEDIS) measures to evaluate quality improvement.

The recent growth in size and evolution in design of state managed-care programs make it an opportune time to again review the literature on Medicaid managed care. In this article, we adopt Sparer's cost, access, and quality framework but augment our review in three critical ways. First, we consider to what extent the literature analyzes costs in conjunction with quality and access outcomes in order to assess changes in efficiency. Second, we acknowledge that researchers are shifting their work to focus on specific components of mandatory-enrollment, HMO managed-care programs that can offer insights on the inner workings of managed care rather than focusing solely on whether the programs deliver on intended goals. This shift in the literature perhaps signals a recognition by researchers that Medicaid managed care is here to stay and that there is a need for research that can inform policy makers' efforts to design and manage their programs. While the work on understanding design elements is still limited, we believe that this is a trending and important area of research and have included it in our review. Third, throughout the literature we notice a change in the populations studied that reflects the recent inclusion of high-risk enrollees in managed-care programs. To highlight this aspect of the literature, we denote specific patient groups studied for papers included in our review.

Table 1 Summary of studies analyzing the effects of Medicaid managed care on costs

Authors	Geographic scope of sample	Population studied	Data years	Main findings
Dranove et al. (9)	29 states	Medicaid recipients	2010–2016	Cost savings: reduction in drug spending. Comment: exploits Medicaid managed care incentive to carve in drug benefits.
Healy-Collier et al. (18)	25 states	Children with type 1 diabetes	2008–2011	Cost savings: reduction in hospital readmissions.
Hu et al. (19)	Florida	Medicaid recipients	2010–2015	Cost savings: reduction in potentially preventable emergency department visits.
Maeng et al. (29)	Pennsylvania	Geisinger enrollees	2013–2014	Cost saving: reductions in inpatient and outpatient spending. Comment: savings partially offset by prescription drug costs.
Palmer et al. (40)	Kentucky	Foster children	1999	Cost savings: reductions in monthly outpatient spending. Comment: conditional on using outpatient care.
Park (41)	Florida	Medicaid recipients	2006–2012	Cost savings: reductions in length of stay and inpatient costs. Comment: smaller under concentrated market.
Perez (42)	United States	Medicaid recipients	1998–2008	Cost predictability: no change in budget predictability.

APPROACH

We include only peer-reviewed studies found in the published literature (PubMed, EconLit, National Bureau of Economic Research working papers) since the Sparer review (2011 forward). Our search for literature was conducted between January and May 2019 and yielded 32 articles. We discuss studies broken down by results on (*a*) costs, (*b*) access, (*c*) quality, and (*d*) efficiency (see **Tables 1–4** for summaries). We note that in some instances studies measured costs in per member per month (PMPM) payments, others analyzed reductions in costly events such as emergency room visits (ER), and some others used standardized expenditures. For the purpose of our review, we categorize studies on access as those evaluating realized access to care such as utilization of primary care, potential access to care such as usual source of care, and avoidable ER use as reflective of poor access. In contrast, we specify studies on quality of care as those measuring appropriateness of care, actual health outcomes, evidence of coordinated care, and measures of utilization specific to high-risk populations or the management of chronic conditions. We categorized efficiency analysis as research combining cost-access or cost-quality questions. We defined an efficiency improvement under two possible scenarios: (*a*) reduction in costs, with access or quality remaining unchanged or improved; or (*b*) no change in costs, with an improvement in access or quality.

COSTS

In 2013, a national study by Duggan & Hayford (11) reported, on average, no improvements in cost savings coming from Medicaid managed care across states, as previously discussed by Sparer. In response to this finding, Perez (42) explored whether Medicaid managed care offers governments a means to improve budget predictability rather than reducing total costs. Although she found no evidence that fully capitated programs improved budget predictability (42), she acknowledges that while her data covered the majority of Medicaid enrollees, it was concentrated on people with

Table 2 Summary of studies analyzing the effects of Medicaid managed care on access

Author(s)	Geographic scope of sample	Population studied	Data years	Main findings
Chorniy et al. (8)	South Carolina	Children with ADHD or asthma diagnosis	2005–2015	Increased access: improved access to primary and preventive care.
Dranove et al. (9)	29 states	Medicaid recipients	2010–2016	No change in access: prescription per enrollee is unchanged.
Hu et al. (19)	Florida	Medicaid recipients	2010–2015	Increased access: lower growth in ACSC inpatient visits.
Marton et al. (30)	Kentucky	Children	1997–1999	Decreased access: reduced monthly professional visits by a smaller degree for nonwhites.
Marton et al. (31)	Kentucky	Medicaid recipients	1997–1999	Differences in access reductions: utilization varied by plan.
McConnell et al. (33)	Oregon, Colorado	Medicaid recipients	2010–2014	Increased access: improved access in three out of four access measures.
McConnell et al. (34)	Oregon, Washington	Medicaid recipients	2011–2014	Decreased access: primary care visits decreased.
Ndumele et al. (38)	13 states and DC	Physicians	2010–2015	Unclear difference in access: network varying across HMOs.
Ndumele et al. (36)	10 states	Medicaid recipients	2005–2011	No change in access: specialty access standards did not lead to increased access.
Oakley et al. (39)	Oregon	Pregnant women	2011–2013	Increased access: increased use of prenatal care in the first trimester. Comment: no valid control group.
Palmer et al. (40)	Kentucky	Foster children	1999	Decreased access: reductions in the probability of receiving any monthly outpatient services.
Sommers et al. (45)	Arkansas, Kentucky, Texas	Potential Medicaid recipients	2013–2014	No change in access: all but one measure of access not statistically different between state plans.

Abbreviations: ACSC, ambulatory care–sensitive condition; ADHD, attention-deficit hyperactivity disorder; DC, District of Columbia; HMO, health maintenance organization.

stable spending patterns. The exclusion of high-risk populations potentially reduced the extent of variation in the underlying costs that ultimately drive budgets. In contrast, Healy-Collier et al. (18) used more timely data and compared youths with a high-risk condition (type 1 diabetes) in FFS versus managed care. They found substantial cost savings from managed-care enrollment (18).

To date, there are no other national cost studies on high-risk populations and/or budget predictability. Rather, we see a growing body of research on state-specific implementations. Florida, for example, enforced mandatory statewide managed-care enrollment in 2014. This transition led to significant cost savings owing to a decrease in preventable ER visits. Researchers also found that these reductions were smaller for white recipients (20).

The increase in mandatory statewide managed-care initiatives has also generated questions about how different plans achieve cost savings. An evaluation of Pennsylvania's Geisinger health plan showed that the plan administrators' focus on proactive and data-driven case management processes generated inpatient savings, whereas their advanced medical home partnerships between managed-care organizations and clinical providers significantly reduced outpatient costs (29). This

Table 3 Summary of studies analyzing the effects of Medicaid managed care on quality

Author(s)	Geographic scope of sample	Population studied	Data years	Main findings
Ndumele et al. (37)	United States	Plans	2006–2014	Increased quality: plans that left MMC markets had lower performance in quality of care.
Ndumele et al. (38)	13 states and DC	Physicians	2010–2015	Evidence of poor-quality care: narrow networks associated with continuity of providers.
Gilchrist-Scott et al. (12)	United States	Children	2011–2012	Difference in quality: Care coordination may be more effective in PCCM than HMO structures. Comment: descriptive comparison with state-level data.
Healy-Collier et al. (18)	25 states	Children with type 1 diabetes	2008–2011	Increased quality: reductions in 90-day readmissions.
Hu et al. (19)	United States	Children	1999–2011	Increased quality: improvements in childhood vaccination rates.
Kuziemko et al. (28)	Texas	Children	1993–2001	Mixed-quality evidence: infant mortality increased among births to black mothers and fell among births to Hispanic mothers.
Chorniy et al. (8)	South Carolina	Children with ADHD or asthma diagnosis	2005–2015	Decreased quality: increases in preventable hospitalizations and ED visits.
Gordon et al. (13)	United States	Providers	2018	Understanding poor quality: provider perspectives on quality care.
Batra et al. (2)	United States	Pregnant women	2016	Understanding poor quality: identifying barriers to timely progesterone provision.
Graham & McDonnell (16)	United States	Medicaid seniors and disabled	2010–2011	Mixed-quality evidence: self-reported quality varied by health risk.
Bowers et al. (5)	Midwestern state	Medicaid disabled	2015	Evidence of quality care: positive enrollee experiences with care coordinators related to positive enrollee health services appraisals and fewer unmet health care needs.
Hatef et al. (17)	Maryland	Medicaid diabetic population	2010–2012	Quality improvement: improved rate of annual diabetic eye exams using new technology. Comment: single health system.
McDonnell & Graham (35)	California	Medicaid recipients	2012	Difference in quality: auto-assigned beneficiaries reported less-positive experiences.
McConnell et al. (33)	Oregon, Colorado	Medicaid recipients	2010–2011	Increased quality: improved on measures of avoidable ED visits, acute PQI preventable hospitalizations, and avoidance of imaging for uncomplicated headache.
McConnell et al. (34)	Oregon, Washington	Medicaid recipients	2011–2014	Increased quality: improvements in two of five measures of low-value care.
Marton et al. (32)	Kentucky	Medicaid recipients	2010–2012	Mixed-quality evidence: highest-cost individuals more likely to switch plans. Comment: quality defined on the basis of differences in capitation rates.

(*Continued*)

Table 3 (*Continued*)

Author(s)	Geographic scope of sample	Population studied	Data years	Main findings
Bindman (4)	California	Plans	2015	Difference in quality: public health plans consistently had higher quality.
Sommers et al. (45)	Arkansas, Kentucky, Texas	Potential Medicaid recipients	2013–2014	No difference in quality: no statistical difference by state plan across quality measures
Gordon et al. (14)	Northeastern state	Medicaid recipients	2011–2016	No difference in quality: forced plan reassignment did not adversely affect continuous enrollment. Comment: explicit natural experiment.
Schwartz et al. (43)	United States	Medicaid individuals diagnosed with SMI	1999–2010	Unclear quality evidence: states with higher Medicaid managed care penetration have lower spending on SMI drugs. Comment: pharmaceutical benefits carved out.

Abbreviations: ADHD, attention-deficit hyperactivity disorder; DC, District of Columbia; ED, emergency department; HMO, health maintenance organization; MMC, Medicaid managed care; PCCM, primary care case management; PQI, patient quality improvement; SMI, severe mental illness.

type of research starts to provide clues to pathways to achieve cost reductions but may be specific to the health plans studied.

ACCESS

Many of the studies exploring access in managed-care plans compare different models and their effects on utilization. Much of this work is focused on Kentucky. The state initially experimented with single-plan HMO programs in 1997 that were centered, respectively, around Louisville and Lexington. The Louisville plan used capitated payments and outsourced administrative responsibilities, whereas the Lexington plan used FFS reimbursements and handled administrative responsibilities internally. Both plans experienced reductions in outpatient utilization, but the Lexington HMO plan had more modest reductions accompanied by an increase in professional utilization

Table 4 Summary of studies analyzing the effects of Medicaid managed care on efficiency

Author(s)	Geographic scope of sample	Population studied	Data years	Main findings
McConnell et al. (33)	Oregon, Colorado	Medicaid recipients	2010–2011	Increased efficiency: CCOs in Oregon improved efficiency. Comment: capacity constraints may have impeded improved access.
McConnell et al. (34)	Oregon, Washington	Medicaid recipients	2011–2014	Increased efficiency: CCOs in Oregon improved efficiency. Comment: capacity constraints may have impeded improved access.
Dranove et al. (9)	29 states	Medicaid recipients	2010–2016	Increased efficiency: the carve-in of drug benefits allowed HMOs to improve efficiency. Comment: savings were larger in states where HMOs could create their own formularies.

Abbreviations: CCO, coordinated care organization; HMO, health maintenance organization.

(31, 40). Subgroup analysis of changes in utilization by race showed that reductions in professional visits were smaller for nonwhites (30). The Lexington HMO using FFS eventually collapsed and returned to traditional FFS Medicaid. The capitated Louisville HMO remained unchanged until Kentucky transitioned to a statewide comprehensive program in 2011 (31). The Louisville HMO then entered the new HMO marketplace and expanded coverage throughout the state. A recent comparison of Kentucky's HMO program with Arkansas's private option program concluded that there were no significant differences in access improvements (45).

In addition to research on the Kentucky plans, research on Oregon's innovative approach to managed care has also considered changes in access. In 2012, Oregon transitioned to a global budgets model, in which coordinated care organizations (CCOs) accepted full financial risk for their enrollees. This change was expected to improve access by increasing CCO incentives to provide timely preventive care. Indeed, in a prepost treatment analysis of pregnant women, Oregon's coordinated care model showed improved access to timely prenatal care (39).

On the other hand, between-state comparisons found mixed results on access. When Oregon was compared with Colorado's model (which did not impose downside financial risk on providers or CCOs), there was an increase in access to wellness visits for children and adolescents as well as improved adult access to preventive ambulatory care (33). But when Oregon was compared with Washington's managed-care model, there were reductions in children's primary care and adults' access to preventive ambulatory care (34).

HMO-focused literature includes research that offers new insights on access in these programs. HMOs reduce medical costs by requiring their enrollees to access care from in-network providers. Barriers to proprietary provider network data have until recently stymied efforts by researchers to evaluate whether HMO networks allow Medicaid recipients to adequately access care. After constructing an original, multistate data set using state-program data, Ndumele et al. (38) showed that some HMOs use narrow network plans. The researchers do not explicitly test, however, whether narrow network plans are linked to reduced access to care. Others have criticized the quality of network data used by states to evaluate access to care (3).

In an attempt to control the possible negative effects of narrow networks, the Centers for Medicare and Medicaid Services (CMS) required all managed-care organizations to implement time and distance specialty access standards in 2018. Time standards require appointments with professionals to be scheduled within a specific time frame, while distance standards establish a maximum distance or time an enrollee must commute to receive specialty care. A recent evaluation of state-specific regulations concluded that this policy alone is unlikely to lead to specialty access improvements. The authors note that efforts to continuously monitor or evaluate plan networks are further hindered because not all states mandatorily require, or even request, HMOs to disclose network data (36).

QUALITY

Much of the recent literature on quality of care focused on high-risk populations enrolled in managed-care programs. The populations studied include seniors, individuals with serious mental illnesses, diabetics, asthmatics, and individuals with disabilities. Like the previous literature, state-specific studies vary by target populations and findings. Some of the variation is due to state-specific policies. For example, South Carolina offers supplementary payments for individuals with some high-risk or chronic conditions, incentivizing HMOs to diagnose more individuals. Research on South Carolina's program found that the introduction of managed care increased asthma and attention-deficit hyperactivity disorder (ADHD) diagnoses but also the utilization of nonurgent ER services, indicating that follow-up access to quality care for these conditions was lacking (8).

Alternatively, multistate studies offer insight on average state-level effects of managed care on high-risk populations. Even here, results vary by high-risk populations and even within high-risk groups. One multistate study found improved quality with reductions in readmissions for children with type 1 diabetes (18), whereas a national study found that self-reported quality varied by the severity of health risk conditions among seniors and disabled individuals (16). A study using state-level data reported some association between prescription utilization for serious mental illnesses and managed-care penetration rates. Because most states carved out pharmaceutical benefits, the authors argued that the results reflect a failure to coordinate medication adherence by HMOs, leading to a decrease in necessary psychiatric medications (43). The authors did not account, however, for variation in access to prescribing providers, which could also explain differences in medication utilization.

Care coordination's role in quality improvements is a topic frequently discussed in the recent literature. A national-level comparison of primary care case management (PCCM) and HMO structures suggested that the latter was less effective at coordinating care (12). Challenges facing the coordination of medical and pharmaceutical benefits within HMOs were reflected in a recent study on barriers to timely initiation of progesterone in pregnant Medicaid-insured women. Progesterone therapy is acknowledged as an evidence-based intervention that can reduce the risk of recurrent preterm births, an outcome that has long-term implications for population health. In survey responses, HMOs cited providers' lack of knowledge of clinical indicators for prescribing progesterone therapy and uncertainty in plan coverage among drug brands as factors associated with low adherence to recommended guidelines (2). Medicaid recipients appreciate the difference coordinated care can make when it is done well. A survey of disabled individuals showed that positive experiences with care coordinators were associated with increased overall satisfaction and fewer unmet health needs (5).

The literature on quality also reflects evidence of experimental efforts to improve quality of care implemented by states, providers, and plans. In a 2016 study, Hu et al. (19) found that managed-care plans adopting pay-for-performance (P4P) programs improved the 4:3:1:3:3:1 series vaccination rates among children. These standard vaccinations include DTaP, IPV, MMR, Hib, Hep B, and varicella. Given that financial incentives alone may not be sufficient in optimizing outcomes, plan administrators are experimenting with technical innovations to improve quality of care. In 2011, the Johns Hopkins HealthCare plan improved early screening for diabetic retinopathy, which without timely intervention is a leading cause of blindness. The plan introduced nonmydriatic cameras[1], which allowed diabetic patients to get their annual screening when visiting their primary care physician rather than having to seek specialist care (17).

New trends in the literature also considered quality variation within HMO managed-care programs. Researchers have shown that algorithms used to auto-assign Medicaid recipients to plans do not produce optimal matches (32, 35). Evidence also indicated that high-risk recipients were more likely to switch to higher-quality plans than were low-risk recipients. The latter potentially undermines market viability over the long term.

To the best of our knowledge, no evidence has documented market failure due to adverse selection in Medicaid programs. But researchers have reported evidence that failure to adequately risk-adjust payments can distort HMO behavior in ways that undermine program goals. For example, evidence from Texas suggests that HMOs may have engaged in strategic efforts to disenroll pregnant African American women who are at higher risk of pregnancy complications. HMOs

[1]An ophthalmic instrument used to capture high-resolution color and monochrome images of the retina and the anterior segment of the human eye.

operating in areas with larger African American populations were also less likely to market benefits for pregnant women, possibly to avoid their enrollment (28). Evidence from California's program raises similar concerns. In California, private HMOs (excluding Kaiser plans) consistently offered lower-quality service when compared with public health plans, which may have helped the private HMOs to avoid high-risk enrollees (4).

Although researchers have offered theoretical models that rationalize HMO efforts to avoid high-risk patients by offering inferior quality (28), these models have yet to be tested empirically. Fortunately, a study using state-level panel data shows that over time it is lower-quality plans that are more likely to exit state marketplaces (37); it is not known, however, if these exits are due to long-term market forces or to tightening regulatory oversight. Whether such adjustments in the HMO market resolve the kind of racial disparities evidenced in the aforementioned Texas study is an area for future research. Because there was no evidence of changes in quality among plans remaining in state markets (28), increases in Medicaid HMO market concentration may not necessarily harm Medicaid recipients. The only other study on this topic reported a negative association between the number of HMOs operating in the local area and hospital length of stay in Florida (41).

EFFICIENCY

Next, we discuss evidence of changes in program efficiency due to managed care by jointly assessing costs, access, and quality. Two Oregon studies provided insight on efficiency but are based on newer models of managed care. Oregon's CCOs use accountable care organizations (ACOs) in conjunction with global budgets and more downside financial risk than does Colorado, but both incorporate elements of traditional (i.e., HMO) managed care with ACOs. When compared with Colorado, Oregon's CCOs appeared to improve efficiency, as cost declines in Oregon were no different from Colorado's and several measures of access and appropriateness of care improved (33). When Oregon was compared with Washington (traditional HMOs), results indicated lower costs, as well as improvements in some measures of access (reductions in avoidable ER visits) and appropriateness of care (unnecessary cervical cancer screening). However, as in the Colorado comparison, these authors found reductions in the key access measures of primary and preventive care (34). Thus, Oregon's newer model of managed care may improve efficiency but only with the caveat that lower primary/preventive care reflects strained provider capacity in Oregon, which experienced much larger increases in enrollment under the ACA than did the comparison states (33, 34). Given the short pre and post time periods used in these studies, longer follow-up data would be informative.

An interesting new pathway for improved efficiency is the incentive introduced under the ACA that encourages states to carve in drug benefits in their managed-care contracts. A multistate study by Dranove et al. (9) offers empirical evidence of decreases in spending on drugs, with utilization remaining unchanged. The savings are related to lower point-of-sale prices at pharmacies for identical drugs and greater use of generic substitutes and therefore imply efficiency gains. Savings were larger in states in which HMOs were allowed to create their own formularies for Medicaid patients (9), which raises concerns about HMOs cherry-picking enrollees and merits further research.

CONCLUSIONS AND DISCUSSION

In the years since Sparer's review, the literature on Medicaid managed care has grown to reflect the design of modern managed-care programs. In particular, researchers have made considerable

gains in empirically evaluating managed-care programs administering benefits to high-risk patient groups. Studies from different states and on different high-risk populations suggested that quality of care can improve under managed care, but substantial caveats remain. Transitioning high-risk enrollees to managed care in itself can have implications for the quality of care (16). Also, the variability in results across high-risk groups cannot be disentangled from differences in state-specific programs, also noted by Sparer. More work using national data or additional states is needed to generalize findings and additional analysis exploring the efficiency effects of including high-risk populations.

We find that several key gaps remain in the literature. In general, the literature should increase its focus on achieving efficiencies with Medicaid managed care. More recent studies did examine costs in conjunction with access and/or quality, but these were focused on one state's unique managed-care model. Obtaining greater value for the health care dollar is critical to the goal of insuring all individuals while slowing the ever-increasing rate of expenditures on health care. While achieving efficiency in the Medicaid program may be more difficult owing to the nature of the populations it serves, states' innovations in the area of Medicaid managed care must be critically evaluated by researchers because there is the potential for research to identify best practices in managing the care of Medicaid beneficiaries.

Discerning the effects of using managed care to administer long-term care services is needed. Almost half of the states use managed care to provide some long-term services and supports (MLTSS) under Medicaid; the total number of MLTSS programs more than doubled from 2012 to 2017 (22). In trying to better coordinate care for the aging and disabled populations included in these programs, some states have engaged in mandatory enrollment, while others have not; most states experimenting in this area have carved out institutional care at this time. By developing MLTSS programs, Medicaid is seeking the same goals of improved access and quality at lower costs as they do for other Medicaid recipients. While these are high-cost populations and much can be gained from coordinating care between the Medicaid and Medicare programs, cost-based research focusing on the incorporation of long-term services into some form of managed care is lacking.

Another gap relates to understanding the effects of the 2016 CMS directive that encouraged Medicaid HMOs to offer recipients nonmedical benefits to address social factors that could improve health outcomes and lower medical costs. Typically referred to as social determinants of health (SDOH), these factors include access to healthy food, income security, stable housing, and affordable transportation. HMOs may have some incentive to offer recipients nonmedical benefits, but it may be unrealistic to expect significant effects without additional reforms. If payoffs from investing in SDOH occur primarily in the long term, HMOs may not realize sufficient benefits among active enrollees to justify these costs (27). Even if Medicaid recipients remain continuously enrolled, tight budgets may not offer slack for investments that generate returns over time (44). In surveys, HMOs report enthusiasm for SDOH benefits but stress the need for more organizational reforms and additional funding (15). In addition to Oregon, New York and Minnesota have already embraced reforms to encourage SDOH benefits. Research on areas for SDOH investments, different state initiatives, and their effects on efficiency is certainly needed.

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LITERATURE CITED

1. Anderson MD, Fox PD. 1987. Lessons learned from Medicaid managed care approaches. *Health Aff.* 6(1):71–86
2. Batra P, Hernandez Gray AA, Moore JE. 2017. Variation in coverage for progesterone to prevent preterm birth: a survey of Medicaid managed care organizations. *Women's Health Issues* 27:573–78
3. Bell N, Lòpez-DeFede A, Wilkerson RC, Mayfield-Smith K. 2018. Precision of provider licensure data for mapping member accessibility to Medicaid managed care provider networks. *BMC Health Serv. Res.* 18:974
4. Bindman A. 2018. Redesigning Medicaid managed care. *JAMA* 319:1537–38
5. Bowers A, Owen R, Heller T. 2017. Care coordination experiences of people with disabilities enrolled in Medicaid managed care. *Disabil. Rehabil.* 39:2207–14
6. CBO (Congr. Budget Off.). 2018. Establish caps on federal spending for Medicaid. In *Options for reducing the deficit: 2019–2028*, pp. 41–51. Rep., CBO, Washington, DC. **https://www.cbo.gov/system/files/2019-06/54667-budgetoptions-2.pdf**
7. CBO (Congr. Budget Off.). 2018. *Exploring the growth of Medicaid managed care*. Rep. 54235, CBO, Washington, DC. **https://www.cbo.gov/system/files/2018-08/54235-MMC_chartbook.pdf**
8. Chorniy A, Currie J, Sonchak L. 2018. Exploding asthma and ADHD caseloads: the role of Medicaid managed care. *J. Health Econ.* 60:1–15
9. Dranove D, Ody C, Starc A. 2017. *A dose of managed care: controlling drug spending in Medicaid*. NBER Work. Pap. 23956
10. Draper DA, Hurley RE, Short AC. 2004. Medicaid managed care: the last bastion of the HMO? *Health Aff.* 23:155–67
11. Duggan M, Hayford T. 2013. Has the shift to managed care reduced Medicaid expenditures? Evidence from state and local-level mandates. *J. Policy Anal. Manag.* 32:505–35
12. Gilchrist-Scott DH, Feinstein JA, Agrawal R. 2017. Medicaid managed care structures and care coordination. *Pediatrics* 140:e20163820
13. Gordon SH, Gadbois EA, Shield RR, Vivier PM, Ndumele CD, Trivedi AN. 2018. Qualitative perspectives of primary care providers who treat Medicaid managed care patients. *BMC Health Serv. Res.* 18(1):728
14. Gordon SH, Lee Y, Ndumele CD, Vivier PM, Gutman R, et al. 2018. The impact of Medicaid managed care plan type on continuous Medicaid enrollment: a natural experiment. *Health Serv. Res.* 53(5):3770–89
15. Gottlieb L, Ackerman S, Wing H, Manchanda R. 2017. Understanding Medicaid managed care investments in members' social determinants of health. *Popul. Health Manag.* 20:302–8
16. Graham CL, McDonnell DD. 2016. Seniors' and people with disabilities' experiences with mandatory Medicaid managed care in California: populations to target for additional support during transitions. *J. Health Care Poor Underserved* 27:1819–42
17. Hatef E, Vanderver BG, Fagan P, Albert M, Alexander M. 2015. Annual diabetic eye examinations in a managed care Medicaid population. *Am. J. Manag. Care* 21:e297–302
18. Healy-Collier K, Jones WJ, Shmerling JE, Robertson KR, Ferry R. 2016. Medicaid managed care reduces readmissions for youths with type 1 diabetes. *Am. J. Manag. Care* 22:250–56
19. Hu T, Decker SL, Chou S-Y. 2016. Medicaid pay for performance programs and childhood immunization status. *Am. J. Prev. Med.* 50:S51–57
20. Hu T, Mortensen K. 2018. Mandatory statewide Medicaid managed care in Florida and hospitalizations for ambulatory care sensitive conditions. *Health Serv. Res.* 53:293–311

21. Kaiser Family Found. 2017. *Data note: Medicaid managed care growth and implications of the Medicaid expansion*. Issue Brief, April 24, Kaiser Family Found., Menlo Park, CA. **https://www.kff.org/medicaid/issue-brief/data-note-medicaid-managed-care-growth-and-implications-of-the-medicaid-expansion/**
22. Kaiser Family Found. 2017. Total Medicaid enrollment in managed long-term services and supports (MLTSS). *State Health Facts*. **https://www.kff.org/other/state-indicator/total-medicaid-enrollment-in-managed-long-term-services-and-supports/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D**
23. Kaiser Family Found. 2017. Total Medicaid spending. *State Health Facts*. **https://www.kff.org/medicaid/state-indicator/total-medicaid-spending/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D**
24. Kaiser Family Found. 2018. Medicaid managed care penetration rates by eligibility group. *State Health Facts*. **https://www.kff.org/medicaid/state-indicator/managed-care-penetration-rates-by-eligibility-group/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D**
25. Kaiser Family Found. 2019. *10 things to know about Medicaid: setting the facts straight*. Issue Brief, March 6, Kaiser Family Found., Menlo Park, CA. **https://www.kff.org/medicaid/issue-brief/10-things-to-know-about-medicaid-setting-the-facts-straight/**
26. Keast SL, Skrepnek G, Nesser N. 2016. State Medicaid programs bring managed care tenets to fee for service. *J. Manag. Care Spec. Pharm.* 22:145–48
27. Kirkner RM. 2018. Why Medicaid managed care is looking outside the traditional coverage box. *Managed Care*, March 28. **https://www.managedcaremag.com/archives/2018/4/why-medicaid-managed-care-looking-outside-traditional-coverage-box**
28. Kuziemko I, Meckel K, Rossin-Slater M. 2018. Does managed care widen infant health disparities? Evidence from Texas Medicaid. *Am. Econ. J. Econ. Policy* 10:255–83
29. Maeng DD, Snyder SR, Baumgart C, Minnich AL, Tomcavage JF, Graf TR. 2016. Medicaid managed care in an integrated health care delivery system: lessons from Geisinger's early experience. *Popul. Health Manag.* 19:257–63
30. Marton J, Yelowitz A, Shores M, Talbert JC. 2016. Does Medicaid managed care help equalize racial and ethnic disparities in utilization? *Health Serv. Res.* 51:872–91
31. Marton J, Yelowitz A, Talbert JC. 2014. A tale of two cities? The heterogeneous impact of Medicaid managed care. *J. Health Econ.* 36:47–68
32. Marton J, Yelowitz A, Talbert JC. 2017. Medicaid program choice, inertia and adverse selection. *J. Health Econ.* 56:292–316
33. McConnell KJ, Renfro S, Chan BK, Meath TH, Mendelson A, et al. 2017. Early performance in Medicaid accountable care organizations: a comparison of Oregon and Colorado. *JAMA Intern. Med.* 177:538–45
34. McConnell KJ, Renfro S, Lindrooth RC, Cohen DJ, Wallace NT, Chernew ME. 2017. Oregon's Medicaid reform and transition to global budgets were associated with reductions in expenditures. *Health Aff.* 36:451–59
35. McDonnell DD, Graham CL. 2015. Medicaid beneficiaries in California reported less positive experiences when assigned to a managed care plan. *Health Aff.* 34:447–54
36. Ndumele CD, Cohen MS, Cleary PD. 2017. Association of state access standards with accessibility to specialists for Medicaid managed care enrollees. *JAMA Intern. Med.* 177:1445–51
37. Ndumele CD, Schpero WL, Schlesinger MJ, Trivedi AN. 2017. Association between health plan exit from Medicaid managed care and quality of care, 2006–2014. *JAMA* 317:2524–31
38. Ndumele CD, Staiger B, Ross JS, Schlesinger MJ. 2018. Network optimization and the continuity of physicians in Medicaid managed care. *Health Aff.* 37:929–35
39. Oakley LP, Harvey SM, Yoon J, Luck J. 2017. Oregon's coordinated care organizations and their effect on prenatal care utilization among Medicaid enrollees. *Matern. Child Health J.* 21:1784–89
40. Palmer M, Marton J, Yelowitz A, Talbert J. 2017. Medicaid managed care and the health care utilization of foster children. *INQUIRY* 54:46958017698550

41. Park J. 2015. Length of stay and inpatient costs under Medicaid managed care in Florida. *INQUIRY* 52:0046958015610762
42. Perez V. 2018. Does capitated managed care affect budget predictability? Evidence from Medicaid programs. *Int. J. Health Econ. Manag.* 18:123–52
43. Schwartz AL, Pesa J, Doshi D, Fastenau J, Seabury SA, et al. 2016. Medicaid managed care penetration and drug utilization for patients with serious mental illness. *Am. J. Manag. Care* 22:346–53
44. Shrank WH, Keyser DJ, Lovelace JG. 2018. Redistributing investment in health and social services—the evolving role of managed care. *JAMA* 320:2197–98
45. Sommers BD, Blendon RJ, Orav EJ. 2016. Both the 'private option' and traditional Medicaid expansions improved access to care for low-income adults. *Health Aff.* 35:96–105
46. Sparer M. 2012. *Medicaid managed care: costs, access, and quality of care*. Res. Synth. Rep. 23, Robert Wood Johnson Found., Princeton, NJ