

## **A Modest Beginning: ACOs provide hope for an integrated Medicare**

### ***Introduction: The ACO Initiative, Its Target Population, and Early Results***

Medicare, one of the US healthcare system's largest and most popular programs is facing unprecedented challenges. Accountable Care Organizations (ACOs) emerged as a way of incentivizing coordinated, quality care by allowing healthcare organizations to share in the cost savings to Medicare. Though many analysts note only modest cost-savings at this point, ACOs show promise in affecting access, quality, and population health by impacting fragmentation within organizations as well as more skillfully managing complex patients, especially over time.

As the Cubanski et al. (2015) primer discussed, Medicare is available to Americans over the age of 65, as well as those with permanent disabilities, end-stage renal failure, and ALS. This covers nearly 55 million people as of 2015, per the Cubanski et al. article. However, the target population is increasing quickly as the Baby Boomer generation ages. In addition, people are living longer. In fact, Cubanski et al. (2015) estimates that Medicare participants over 80 will triple by 2050 and those over 90 will quadruple in the same time period. The large, aging population will inevitably skyrocket the cost of Medicare. In some estimations, Medicare expenditures could rise to 6.2 percent of GDP in 2041, an astronomically high cost (Brockett, Golden & Yang, 2018).

The Affordable Care Act (ACA) desperately needed to address the rising costs of Medicare. Enter, ACOs: groups of providers and hospitals who collaborate on their clients' care in a systematized way with the dual goal of containing costs and improving quality. The measure sought to remedy the fact that no one was ultimately held accountable for a given patient's care.

ACOs aim to address fragmentation in the system by incentivizing doctors to form coordinated care groups to care for patients. If they lowered costs while maintaining quality standards, the ACA initiative granted ACOs a cut of the savings they produced to Medicare. However, providers must collaborate well, using electronic medical records (EMR) and other measures to track quality and keep their patients in good health (Gold, 2015).

The Medicare Shared Savings Program (MSSP) and Pioneer Accountable Care organizations formed, with similar goals under the initiative but different risk-sharing portfolios. As of 2015, around 6 million were enrolled in ACOs through Medicare (Gold, 2015).

In order to guard against providers cutting corners to save money, the law put forth 65 quality measures that the ACOs must meet in order to share in the savings generated. ACO structure attempts to maintain the freedom and choice of providers and patients alike. Unlike the HMO model, typically ACOs utilize a fee for service (FFS) model and patients and doctors are generally given more autonomy in which services to order. In addition, Medicare patients are not limited to the providers within the ACO and could still be covered for those outside the organization through Medicare (Gold, 2015).

In a thorough review of early studies of the effects of the ACO initiative, I found that there were slight early benefits to ACOs and much room for improvement. McWilliams et al. (2016) studied the early results and noted that quality of care was unchanged or a little better for those in ACOs. The group went on to note that there were mostly only modest costs savings or shared savings (McWilliams et al., 2016). Still, complicated, expensive patients saw the most per-patient savings (McWilliams et al., 2014). This fact sounds encouraging, but Berkson et al. (2018) identified a potential pitfall in that programs that financial targets were based on historical

data of the organization-- so programs that were already doing a good job at cost conservation could be disincentivized from joining as ACOs.

D'Aunno et al. (2018) found that organizations that benefited from the program were those that utilized coordinated primary care and electronic medical records well and had strong physician leadership toward the goal of accountability. Still, Cole, Leighton & Zhang (2018) noted that primary care usage was still underutilized in ACOs, perhaps due to a lack of primary care doctors or the remaining culture of valuing specialty care.

#### ***Access Deficiencies Prior to the ACO Initiative***

Prior to this initiative, Medicare participants faced rising costs which threatened to reduce participants' access to care, defined by the Institute of Medicine Committee (IOM) as, "the timely use of personal health services to achieve the best health outcomes" (Millman, 1993, p. 4). The IOM found that insurance coverage alone did not eliminate all the access barriers a patient might face, with cost remaining a significant barrier for many (Millman, 1993).

Medicare participants are automatically given insurance, which removes some of the barriers to access to care, but coverage is not free to the participants and cost can still be a barrier. In the way that traditional Medicare is structured (Parts A and B), the program only pays for 80 percent of expenses for doctors and hospitals, leaving participants to find a way to pay for the remaining 20 percent. This was used as a safeguard to reduce *moral hazard*, or the tendency to overuse medical services when they are paid for by an insurance plan (Liss, 2018). To remedy this cost, some are able to afford supplemental insurance (Medigap) or premium policies on the individual market through Medicare Part C. However, given their older age, many participants

do not have much income or savings and many are left with untenable medical bills (Cubanski et al., 2015).

Further, as the system tries to deal with an older, sicker population and overall program costs rise, these costs must inevitably be passed on to the consumer in the form higher premiums for Part B (doctor care), Part C (private insurance), Part D (drug coverage) and supplemental insurance plans. If consumers cannot pay their bills, they might choose to delay or forgo services, thus limiting their overall access to timely care.

### ***Quality Deficiencies Prior to the ACO Initiative***

Due to the complex structure, fragmentation, and payment system of Medicare, the program faced quality of care issues, conceptualized by McGlynn et al. (2003) using the terms *overuse*, *underuse*, and *misuse*. These terms refer to the use of recommended care processes, and quality is thus measured by whether the processes are completed (rather than by the specific outcome). Underuse is when a patient is not provided care that would improve their outcome. Overuse is providing services or tests that are unnecessary given the patient's condition and have the potential to be wasteful and/or harmful. Misuse is not using the tools of healthcare effectively in such a way that complications and poor outcomes result (McGlynn et al., 2003). Medicare has a large provider network---most physicians take Medicare clients and charge through the fee-for-service (FFS) model (Cubanski et al., 2015). In this way, the patient has a lot of choice, but this can lead to fragmentation of records, testing, communication on follow-up care, and so forth. The fragmentation endemic to Medicare has the potential to lead to overuse, as tests might be repeated due to lack of accurate record-keeping. Further, physicians paid for every service are incentivized to order excessive testing or procedures, again leading to overuse. Underuse is a

concern, too, as clients can slip through the cracks through fragmentation with no one ultimately coordinating their care, resulting in clients not getting the recommended procedures.

### *Quality aims of the ACO initiative*

Before discussing the impact of the initiative, it is important to understand how the ACOs define quality through a broad analysis of the 65 measures presented in the initiative. Using McGlynn et al.'s (2003) framework, the quality standards mostly measure processes, although there are some measures of patient experience as well. Generally, quality, as outlined in this initiative, seems to guard against underuse, ensuring that ACOs don't cut needed care processes to save money. As such, care standards are presented for both preventative health as well as for some at-risk conditions, such as diabetes (Muhlestein & Hall, 2014).

### *Addressing fragmentation: Impacts on access and quality*

ACOs explicitly seek to influence quality and access by addressing the fragmentation of the US healthcare system. Fragmentation means that no entity is fully held accountable for patient care and outcomes. This inevitably leads to higher cost and poorer quality. The initiative incentivizes teams working efficiently together to keep patients well.

**Access.** McWilliams, Landon, Chernew & Zaslavsky (2014) conducted a review in the first few years of ACO implementation and found that timely access to care was improved alongside improving coordination of care. In fact, timely access to care moved from average to the 86<sup>th</sup> percentile in patient ratings (McWilliams et al., 2014).

**Quality.** ACOs are in their infancy in terms of research data, however McWilliams et al. (2014) found that quality of care measures improved more in measures that were affected by changing organizational structure to be more cohesive. D'Annunzio, Broffman, Sparer & Kumar (2018)

conducted a review of the qualities of the most successful ACOs. One key quality was using care coordinators to follow up with patients (for example, coordinating follow-up care following a hospitalization). This was shown to reduce underuse significantly. D'Annunzio et al. (2018) also noted the importance of electronic medical records (EMRs), which can consolidate complicated information and give the provider clear and complete information on a patient. By addressing fragmentation, the ACO initiative has shown promise in improving quality by helping to ensure that patients get the services they need (avoiding underuse) and only the services they need (avoiding overuse).

***Incentive to lower costs: Impacts on access and quality***

**Access.** Providers inevitably worry about the ballooning costs of Medicare and that the program's financial distress will lead to a cut in their fees for service, which are set by the government. If the system worsens or collapses, access to care will be negatively affected. Therefore, ACOs fill an important need in finding an alternate payment method that rewards providers for efficient, quality care. In this way, ACOs are a middle ground between the capitation payments of HMOs and the fee for service payments of current spending models (Ginsburg, 2011).

In the ACO model, the benchmark financial goals are based on the clinic's historical data. After analysis, most created only modest savings (McWilliams, Hatfield, Chernew, Landon & Schwartz, 2016). Berkson, Karp, Jaffery, Flood & Pandhi (2018) found that only 23 percent of ACOs actually shared in savings due to the program. And furthermore, programs that are already conserving costs efficiently are in a way penalized by not being able to reduce costs further,

perhaps dis-incentivizing high performing clinics from joining the ACO model (Berkson et al., 2018).

There was nuance to these findings, though. In fact, McWilliams et al. (2016) found that the savings were greatest among independent (rather than hospital) ACOs and higher-cost ACOs seemed to be able to share in the savings to a greater extent. Extrapolating here, ACOs that had the most spending had the greatest reductions and thus the greatest cost-sharing. In this way, the program essentially targeted the most expensive providers in the Medicare system and potentially reduced unnecessary cost.

**Quality.** The ACO model tries to discourage overuse with its profit-sharing incentive. Providers are motivated to only order necessary tests to save costs. In theory, the quality measures of the ACOs should guard against underuse as well.

In an overview study, McWilliams et al. (2016) found that overall quality of care (based on the ACO measures) was unchanged or a little better. However, medically complicated clients saw the most gains in quality measures (McWilliams et al., 2014). This warranted further research specifically on the impact of the program on more complex health situations.

#### ***Research on ACO impact on medically complicated clients***

In a fascinating study, Sen, Chen, Samson, Epstein, & Maddox (2018), looked at ACOs that served a high dual (qualifying for Medicare and Medicaid) clientele as well as a high disabled population. In this group, quality (as measured by CMS standards) improved the longer the organization had been together. Sen et al. (2018)'s research speculated that quality improved with time because the group learned to coordinate care better for their complex populations.

Complicated work takes time, and this finding suggests that perhaps the ACO model needs time to reach its full impact.

Further, though overall costs increased slightly during the study period, there was more per patient savings than was seen in non-ACO populations. Sen et al. (2018) noted the possibility that the most vulnerable and needy patients receive a disproportionate benefit from the ACO initiative. While cost savings overall are relatively modest, if the ACO initiative has the ability to affect the costliest and most at-risk populations in the US healthcare system over time, the results could be incredibly powerful.

### *The impact of ACOs on primary care utilization*

As was observed by Starfield (2005), primary care providers are essential to coordinating care for patients over the long term, acting as “gatekeepers” to speciality care, and directing resource spending appropriately. As PCPs are uniquely qualified to manage both access and quality measures of healthcare, in theory ACOs would organize to maximize the cost-saving benefits of good primary care in order to share in more savings. In fact, Barnett and McWilliams (2018) note that this was indeed the intention of the law, and many hoped the ACO initiative would specifically reduce unnecessary specialty visits. However, despite these clear financial incentives, PCP usage does not seem adequately utilized in early adoption of ACOs.

Cole, Leighton, and Zhang (2018) compared visits to PCP versus speciality care providers in Medicare Shared Savings ACOs or non-ACOs. The group found that found PCPs remain underutilized due to: (1) a lack of PCPs in the ACO networks as well as (2) existing patient relationships with their speciality providers (Cole et al., 2018). Further, Barnett and McWilliams (2018) looked at “leakage,” or unnecessary visits, to specialty care. In their review



of data through 2014, this so-called leakage decreased only minimally. As might be expected, ACOs that focused on primary care did slightly reduce new specialist visits for their clients (Barnett & McWilliams, 2018). In further support, D'Aunno et al. (2018) found that efficient and coordinated primary care was essential to success in the MSSP.

Though a focus on primary care would likely increase the success of ACOs, the groups are free to organize as they wish. Existing norms in healthcare are still holding relatively strong, despite the theoretical incentive to prioritize providers that coordinate care well and cheaply.

### ***Impact on overall cost for Medicare population***

The Medicare population, being more vulnerable than the general population, includes more healthcare “super-users.” As described by the 2012 report from the Kaiser Family Foundation, 80 percent of US Healthcare costs can be attributed to 20 percent of the population. Those in the “super-user” category are those who have three or more chronic conditions, are elderly and frail, or live with a disability under the age of 65 (Kaiser Family Foundation, 2012). Given the high-risk target population of Medicare, ACO initiative is uniquely positioned to affect costs in the US healthcare system. However, early results have been modest, as I will describe below.

***Patient behaviors.*** The ACO initiative, by design, serves a population who already has generous access to healthcare for minimal cost. ACO structures do not change the cost-sharing mechanisms for the patient. Further, ACO structures do not prevent a patient from self-referring to speciality care or choosing a provider outside the ACO. And in fact many patients are not likely even aware that they are in a ACO structure to begin with (Gold, 2015).

Using Cutler and Zeckhauser’s (2000) description of the principal/agent relationship, doctors are the agents who make most of the resource-spending decisions for the patients

(principals). As noted by Brook et al. (2006), the landmark RAND health experiment showed that once patients have to spend something to get healthcare, their spending decisions are mostly entirely based on their doctors' recommendations or the "testing treatment cascade," as Birkmeyer et al. (2013, p. 1122) put it. Thus, ACOs don't change the *moral hazard* component of healthcare resource spending and overuse remains a cost issue.

***Provider decisions.*** However, as discussed, the ACO initiative has seen some modest early benefits in cost, especially for the costliest, most medically complex patients (Sen, et al., 2018). What accounts for these gains? The early benefits of ACOs seem to be in their ability to impact provider decision making about resource allocation. On a purely financial basis, by offering a sharing in the savings to Medicare, the initiative disincentivizes overuse.

Gawande (2009) reviewed the impact of provider decision-making on cost in expensive systems like McAllen, Texas, versus high-quality, low-cost areas like the Mayo Clinic in Rochester, Minnesota. When health systems (such as Mayo) had a culture of collaboration and integration, they provided better care at lower costs. If providers are incentivized by money, as was true in McAllen, the ACO initiative that financially rewards better care coordination should result in changed provider decision in favor of cost cutting (Gawande, 2009).

There are early glimmers of this happening due to the ACO initiative. D'Aunno et al. (2018) confirmed that the highest performing ACOs in Medicare were indeed those that had well-organized, collaborative physicians and good information sharing via electronic medical records. McWilliams et al. (2016) echoed Sen et al.'s (2018) research and found that the costlier, more complicated patients saw the most per-person reduction in cost under the ACO framework. Early results confirm that requiring care coordination and accountability has a slightly favorable

impact on cost (Sen et al., 2018). Overall, D'Aunno et al. (2018) noted that cost savings take time. Provider networks must build the infrastructure to communicate well with each other. This echoes the conclusions that Gawande (2009) suggested: cost savings result from coordinated care, which takes a change in culture. And culture changes take time.

Still, there are other discouraging pieces of research. One example I found was a study by Nathan et al. (2018) that compared rates and costs of elective surgeries in hospitals that were part of an ACO versus those that were not. The researchers found no difference in these two groups, further reinforcing that simply attaching a FFS hospital to the ACO framework does not lower costs (Nathan et al., 2018). This seems to speak to the fundamental weakness of the ACO initiative--Medicare still pays fee-for-service (FFS) for specialty care and surgery without enough gatekeeping from primary care doctors coordinating care.

With an aging population increasingly joining Medicare, there is reason to believe that the ACO initiative could incentivize providers to learn from these early models of success favoring coordinated care, integration, and incentives to make more intelligent resource-spending decisions. Current research shows that there is a trend in this direction, but early results are modest.

### ***Impact on population health and the Health Impact Pyramid***

The Five-Tiered Health Impact Pyramid was articulated by Thomas Frieden (2010) as a way of describing the overall impact of different healthcare interventions on population health. The base of the pyramid represents the intervention level with the most impact to the population and the least amount of individual effort required. Moving up the pyramid, the amount of individual effort increases, while the effect on population health decreases. The base (first tier) of the

pyramid is comprised of socioeconomic factors, such as income and education. The second tier represents changes that make the population's default decisions healthier, such as more walkable cities that encourage exercise. The third tier includes one-time interventions that have long-lasting effects, such as childhood vaccinations. The fourth tier encompasses most of what is typically thought of as healthcare: visits to the doctor, hospital, or specialist. The fifth and top tier describes health education and counseling, such as campaigns to decrease obesity by trying to persuade individuals to eat more vegetables. The first two tiers relate to population health overall creating the broadest influence, while the top three tiers require individual action (Frieden, 2010).

Frieden (2010) notes that changing population health on a broad scale is difficult because often the very fabric of society must be altered to affect the bottom two tiers. And as many critics have noted, the ACO initiative does not directly address the socioeconomic characteristics that create ill health in the United States (Barnes, Unruh, Chukmaitov & van Ginneken, 2014). And in fact, this is a well-founded criticism of the ACO initiative. This intervention focuses on individual healthcare settings rather than changing fundamental socioeconomic factors (tier 1) or overall context (tier 2). ACOs aim to mainly intervene at tier 4 (clinical interventions) by granting Medicare patients access to coordinated physician care, including hospital care, as well as access to the processes outlined in the quality measures. The initiative also provides greater access at tier 3, or one-time interventions as immunizations and the like are explicitly included in the ACO's quality requirements. The ACO initiative also addresses tier 5 of the pyramid by incentivizing counseling and patient education. If doctors are financially rewarded for healthy

patients, it becomes more likely that they will take time for health counseling and education to try to keep the client healthy, informed, and self-reliant.

Though the ACO initiative doesn't truly address the first two tiers of the pyramid concerning population health, as the Sen et al. (2018) study identified, the ACOs seemed to increase their organizational power over time, especially for the most vulnerable and complicated patients enrolled in Medicare. Drawing on this fact, one could argue that finding cost-savings in these communities and giving money back to their clinics is a way of increasing providers' ability to treat the population and increase health in blighted communities. In addition, money returns to the community through the shared savings program. This is perhaps an argument for some influence to tier 1, or socioeconomic factors. An even more exploratory argument could be made that tier 2 (changing the context) is affected because provider groups learn to coordinate care and work together on the most critically needy patients. Thus, when these clients come to the clinic, the context of their visit is different automatically, as the way healthcare is administered has been fundamentally altered.

At the essence, though, ACOs were built intervene at the individual (higher) tiers, rather than population-level (lower) tiers. This is perhaps one of the greatest limitations to the scope of ACOs to truly influence health in the US.

### ***How to maximize population health: a proposal***

As described above, the ACO initiative is not designed to impact the lower (broader) bases of the Health Pyramid. Therefore, in modifying this initiative to maximize benefits to population health, I'd work to increase the quality benefits of the initiative. To define quality, I return to McGlynn et al.'s (2003) framework of *overuse*, *underuse*, and *misuse*.

The ACO initiative guards against *underuse* by setting up mandatory quality standards for each health group. However, I don't believe the initiative goes far enough in preventing *overuse* and incentivizing coordination of care. In a perfect world without a divisive political landscape, I would fundamentally alter provider financial incentives by changing the fee-for-service (FFS) method of paying doctors to a salaried model.

Bodenheimer et al. (2007) note a tremendous gap between the incomes of specialty physicians and primary care providers. One reason for this gap, as we have seen, is that the fundamental structure of the US Healthcare system rewards costly services or surgeries and not the emails, counseling, consulting with colleagues, and other coordinating actions that are not billable in a FFS system (Liss, 2018).

As Dr. Liss said in class, "cardiologists aren't the best doctors to coordinate a patient's care in most cases" (Liss, 2018). However, medical students might make double as cardiologists, leaving the crucial role in accountability, PCP, much less desirable or financially untenable for debt-laden young doctors (Liss, 2018). If an organization is going to be actually accountable for the whole of a person's health, primary care doctors use must be incentivized and overuse disincentivized. The cost structure must change to motivate the change in culture that undervalues primary care.

Referring back to Gawande's (2009) conclusions about what makes Mayo different from McAllen, I think paying physicians salaries (or otherwise limiting the FFS payments from Medicare) would be a good start. In determining salaries, if the goal is accountability, those who have the most responsibility over a patient's coordinated care and quality measures in ACOs could be rewarded by the shared savings produced in this initiative. This would financially

incentivize the beginnings of a Mayo environment---doctors working together with primary care as the central hub of the wheel. Certainly it would take time, maybe even decades, to create the culture of care found in the best systems. But if this initiative is a place to begin, I think it could go further in its financial incentive to use primary care as a means for doctors to work together for the good of the patient.

### ***What remains unknown; potential pitfalls***

As discussed above, ACOs are in the early stages of learning to coordinate care, especially for the more complex target population of Medicare. What remains unknown is mostly how much the MSSP will actually motivate the shift in culture that Gawande (2009) and others note is fundamental to actually having accountable care.

One worry about ACOs is their potential for creating healthcare monopolies due to the incentive to consolidation. Richman and Shulman (2011) speculate that the trend of large hospital groups buying up physician offices and otherwise consolidating doesn't always relate to the goal of saving Medicare money. Rather, they argue, there is the potential to abuse the system to gain more bargaining power in the costly arena of healthcare. As prices in healthcare are notoriously confusing and secretive, this has the potential to give power to a few to raise the prices for their own gain (Richman & Shulman, 2011). How the ACO initiative plays out in this way has yet to be seen or studied.

### ***Conclusion***

With great hopes and modest initial outcomes, ACOs offer some solutions to manage the costs and fragmentation of Medicare. As with many good things, the greatest gains seem to come with time, as teams work to coordinate care for complicated populations. ACOs don't change the

fundamental FFS pricing structure of the US Healthcare system and thus it remains to be seen if they can, over time, make more Mayos than McAllens.

## References

- Barnes, A. J., Unruh, L., Chukmaitov, A., & van Ginneken, E. (2014). Accountable care organizations in the USA: types, developments and challenges. *Health Policy*, 118(1), 1-7.
- Barnett, M. L., & McWilliams, J. M. (2018). Changes in specialty care use and leakage in Medicare accountable care organizations. *The American journal of managed care*, 24(5), e141-e149.
- Berkson, S., Davis, S., Karp, Z., Jaffery, J., Flood, G., & Pandhi, N. (2018). Medicare shared savings programs: Higher cost accountable care organizations are more likely to achieve savings. *International Journal of Healthcare Management*, 1-8.
- Birkmeyer, J. D., Reames, B. N., McCulloch, P., Carr, A. J., Campbell, W. B., & Wennberg, J. E. (2013). Understanding of regional variation in the use of surgery. *The Lancet*, 382(9898), 1121-1129.
- Bodenheimer, T., Berenson, R. A., & Rudolf, P. (2007). The primary care–specialty income gap: why it matters. *Annals of Internal Medicine*, 146(4), 301-306.
- Brockett, P. L., Golden, L. L., & Yang, C. C. (2018). Potential “Savings” of Medicare: The Analysis of Medicare Advantage and Accountable Care Organizations. *North American Actuarial Journal*, 1-15.
- Brook, R. H., Keeler, E. B., Lohr, K. N., Newhouse, J. P., Ware, J. E., Rogers, W. H., ... & Kamberg, C. (2006). The health insurance experiment: A classic RAND study speaks to the current health care reform debate. *Santa Monica. RAND Corporation*.
- Cole, E. S., Leighton, C., & Zhang, Y. (2018). Distribution of Visits for Chronic Conditions Between Primary Care and Specialist Providers in Medicare Shared Savings Accountable Care Organizations. *Medical care*, 56(5), 424-429.
- Cubanski J, S. C., Boccuti C , et al. (2015). A Primer on Medicare – Key Facts About the Medicare Program and the People it Covers. *Kaiser Family Foundation*.



- Cutler, D. M., & Zeckhauser, R. J. (2000). The anatomy of health insurance. In *Handbook of health economics* (Vol. 1, pp. 563-643). Elsevier.
- D'Aunno, T., Broffman, L., Sparer, M., & Kumar, S. R. (2018). Factors That Distinguish High-Performing Accountable Care Organizations in the Medicare Shared Savings Program. *Health services research, 53*(1), 120-137.
- Frieden, T. R. (2010). A framework for public health action: the health impact pyramid. *American journal of public health, 100*(4), 590-595.
- Gawande, A. (2009). The cost conundrum. *The New Yorker, 1*, 36-44.
- Ginsburg, P. B. (2011). Spending to save—ACOs and the Medicare shared savings program. *New England Journal of Medicine, 364*(22), 2085-2086.
- Gold, J. (2015). Accountable Care Organizations, Explained, *Kaiser health news* (September 14, 2015).
- Kaiser Family Foundation (2012). *Health Care Costs: A Primer*.
- Levine, D. M., Linder, J. A., & Landon, B. E. (2016). The quality of outpatient care delivered to adults in the United States, 2002 to 2013. *JAMA internal medicine, 176*(12), 1778-1790.
- Liss, D. *The US Healthcare System*. Lectures presented in Northwestern University, Chicago, IL.
- McGlynn, E. A., Asch, S. M., Adams, J., Keesey, J., Hicks, J., DeCristofaro, A., & Kerr, E. A. (2003). The quality of health care delivered to adults in the United States. *New England journal of medicine, 348*(26), 2635-2645.
- McWilliams, J. M., Hatfield, L. A., Chernew, M. E., Landon, B. E., & Schwartz, A. L. (2016). Early performance of accountable care organizations in Medicare. *New England Journal of Medicine, 374*(24), 2357-2366.
- McWilliams, J. M., Landon, B. E., Chernew, M. E., & Zaslavsky, A. M. (2014). Changes in patients' experiences in Medicare accountable care organizations. *New England Journal of Medicine, 371*(18), 1715-1724.
- Millman, M. (Ed.). (1993). *Access to health care in America*. National Academies Press.

Muhlestein, D., & Hall, C. (2014). ACO quality results: good but not great. *Health Affairs Blog [blog on the Internet]*. December, 18.

Nathan, H., Thumma, J. R., Ryan, A. M., & Dimick, J. B. (2018). Early Impact of Medicare Accountable Care Organizations on Inpatient Surgical Spending. *Annals of surgery*.

Richman, B. D., & Schulman, K. A. (2011). A cautious path forward on accountable care organizations. *JAMA*, 305(6), 602-603.

Sen, A. P., Chen, L. M., Samson, L. W., Epstein, A. M., & Maddox, K. E. J. (2018). Performance in the Medicare Shared Savings Program by Accountable Care Organizations Disproportionately Serving Dual and Disabled Populations. *Medical care*, 56(9), 805-811.

Starfield, B., Shi, L., & Macinko, J. (2005). Contribution of primary care to health systems and health. *The milbank quarterly*, 83(3), 457-502.