

INITIATIVE
18|11

What Can We Do About the
Cost of Health Care?



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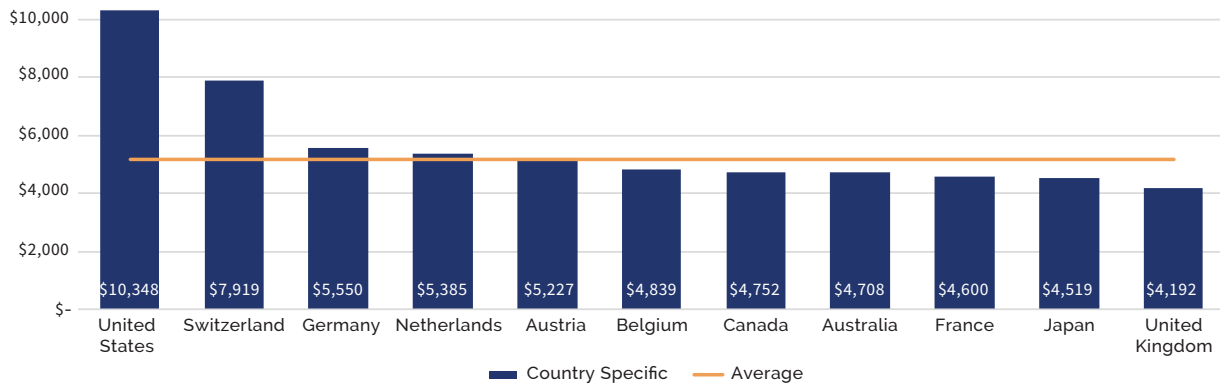
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Section 1. Executive Summary

The 2010 enactment of the Affordable Care Act (ACA) changed careers for those in the health care community. There were new regulations to be read, new policies to be written, new pricing methods to be developed and so much more.

Amid this activity, however, there was, and still is, an elephant in the room: the cost of healthcare. Currently, health care in the United States represents 18 percent of the gross domestic product compared with 11 percent in comparable countries, such as the United Kingdom. In dollar terms, the cost of health care here is roughly double that of similar countries (see Figure 1). While the U.S. pays more for health care, it falls short on many important quality measures, such as life expectancy, which is 78.8 years in the U.S. compared with 82.0 years in comparable countries.¹ In addition, a 2017 Commonwealth Fund study ranked the United States last in overall quality of care compared with 10 similar countries.²

Figure 1
2016 Per Capita Expenditures



Source: Sawyer, Bradley, and Cynthia Cox, How does health spending in the U.S. compare to other countries? Health System Tracker, Feb. 23, 2018, https://www.healthsystemtracker.org/chart-collection/health-spending-u-s-compare-countries/?_sf_s=compare#item-average-wealthy-countries-spend-half-much-per-person-health-u-s-spends. Accessed Aug. 2, 2018.

INITIATIVE 18|11

With this issue in mind, the Society of Actuaries (SOA) joined forces last year with the Kaiser Family Foundation (KFF) to charter Initiative 18|11: What Can We Do About the Cost of Health Care? The SOA is the world's largest provider of actuarial research and education. KFF is a non-partisan source of analysis of current health policy issues, with a long-standing interest in how health spending growth affects government, employers and consumers. The Healthcare Financial Management Association (HFMA) has joined our efforts. HFMA provides reliable tools, credible resources and unique insights into health care finance. The phrase "18|11" is a reference to the relative percentages of GDP discussed above.

The inaugural event for Initiative 18|11 occurred on March 7, 2018, in Washington, D.C., at an all-day event moderated by Ian Morrison, an internationally known author, consultant and futurist. Morrison specializes in long-term forecasting and planning, with an emphasis on health care and the changing business environment. The meeting attendees included more than 30 thought leaders throughout the health care community, including actuaries, health economists, employee benefits experts and hospital administrators. A complete list of participants can be found in the Appendix.

At the conference, we focused on two key drivers: the price of goods and services and the chronic disease burden. In our discussions, we noted that fragmentation of care within the U.S. can result in unnecessary administrative expenses and make finding solutions more difficult. Once we had established that, we asked ourselves what can we as a nation do about it? What can the health care community do about it? Over the next few years, we can expect an evolution in health care through new care transformation models, which we referred to as Managed Care 3.0. At this point, the term "care transformation model" is loosely defined, but there is general agreement that it includes new technologies and analytical techniques, further development in value-based reimbursement and plan design methods, and innovations in care management. In addition, there are some process improvements that may help reduce administrative costs and increase quality. Some of these efforts will be led by private organizations, like health plans, and other will be focused on state and local solutions.

In the next few months, the planning committee will focus on three main deliverables:

- **A research project** analyzing the 5 percent of the population that accounts for 50 percent of the health care costs, with an emphasis on understanding the population, increasing early interventions and reducing overall costs
- **A strategic initiative** documenting the pharmacy development and pricing process, with the goal of improving transparency

- A **strategic initiative** examining the impact new technologies and care models may have on cost and quality, with the goal of better understanding the current environment and identifying potential risks and opportunities

Although these projects will be sponsored by the SOA, the project committees will include representatives from our partners, KFF and HFMA, and participants from the inaugural event.

The latest information on Initiative 18|11 can be found on our website www.soa.org/initiative1811.

Section 2. Cost Drivers

During the meeting, much of the conversation centered on identifying the key drivers of health care in the United States. Although there are many ways to analyze the cost of health care, we chose to narrow our focus on two views:

- A **transactional view** that reflects the day-to-day perspective of health care for providers, payers and consumers
- A **holistic view** of health care costs based on the needs of consumers and populations

A central theme during the discussion was the concept of the “health care identity,” which refers to the notion that health care costs = health care income. In other words, any attempt to reduce costs will result in lower income for someone in the health care community. Providers and administrators can be expected to develop countermeasures to keep income constant or increasing. As one participant put it, “Cost savings means fewer employed physicians.” Since the traditional laws of supply and demand do not necessarily hold in health care, we quickly concluded we cannot control costs without some type of forcing function that provides oversight to the process. Examples of forcing functions used in other countries include global budgets and price regulation. It is unlikely the U.S. will adopt these types of methods on a national basis in the near future. We noted, but did not discuss in depth, some of the challenges faced by other countries, such as long waiting times.

THE TRANSACTIONAL VIEW

We intentionally kept our conversation focused, so we did not discuss in-depth many subjects that would otherwise be included in this type of discussion, such as quality of care, fraud and abuse, and the role of government regulation. These topics were mentioned tangentially during the conversation and were covered in the data book,³ which participants were given in advance of the meeting to ensure a data-driven discussion without getting too involved in the details at the meeting.

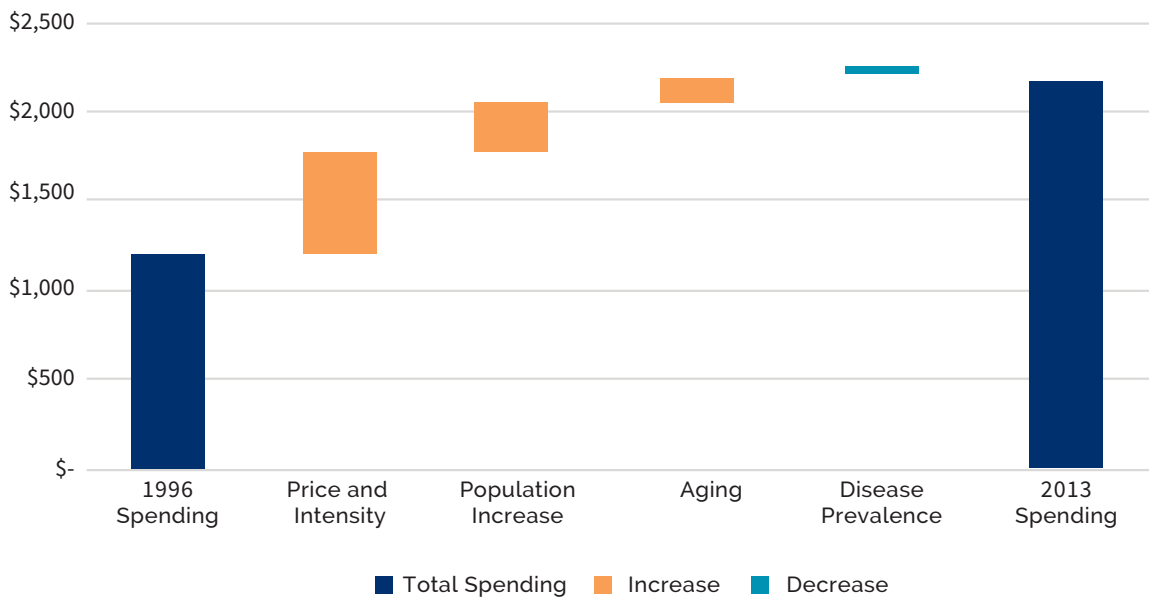
Prices vs. Other Factors

There was a consensus among the participants that one of the primary reasons for the 18|11 problem is the difference in prices. This was well documented in a 2003 *Health Affairs* report.⁴ One of

the authors, Gerard Anderson, was an 18|11 participant. The results from more recent studies are consistent with this thesis. For example, a 2018 *Journal of the American Medical Association (JAMA)* study concluded that the major drivers of the increase in health care costs were due to the “prices of labor and goods, including pharmaceuticals, and administrative costs.” They also noted that utilization rates in the United States were similar to those in other countries.

As seen in Figure 2, another *JAMA* study showed that approximately 50 percent of the increase in U.S. expenditures from 1996 to 2013 was due to increases in price and intensity. The other two major drivers in the study include an increase in the U.S. population, which accounted for about 23 percent of the increase, and aging, which accounts for about 12 percent of the increase. There was no statistical change in spending due to utilization. Changes in disease prevalence or incidence were a slight cost mitigator in the 2 to 3 percent range. Of course, these results varied by health condition and type of care. During the discussion, many participants noted that prices have been the main driver of costs in their day-to-day work.

Figure 2
U.S. Health Care Cost Drivers



Source: Dieleman, Joseph L., Ellen Squires, and Anthony L. Bui, et al. 2017. Factors associated with increases in U.S. health care spending, 1996–2013, *Journal of the American Medical Association* 318, no. 17:1668–78, <https://jamanetwork.com/journals/jama/fullarticle/2661579>. Accessed Nov. 29, 2018.

Several of our participants, especially those tied to the employer community, expressed extreme frustration with the lack of transparency in the pricing process, which was described as a “cloak of secrecy.” Although the talk began with pharmacy pricing, most of the discussion centered on negotiations between health plans and providers. In almost every such agreement, there is a nondisclosure proviso in place, which makes it impossible to compare prices by health plan on a service-by-service basis. Employers, however, can compare overall costs by health plans through a process known as uniform discount submission. There were also some words of caution that greater transparency may lead to higher costs, as it did for executive pay, which increased rapidly over the past few years even though federal law requires disclosure of the compensation for the top five executives.⁵

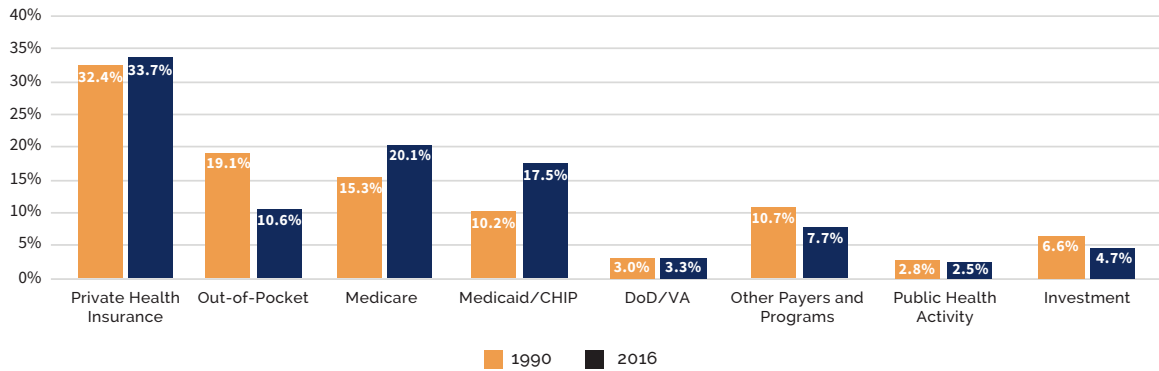
Also, several attendees, especially health plan participants, mentioned that negotiations between health plans and providers is often confounded by the consolidation of providers within a region.

Indirect Expenses

In its simplest form, the total cost of health care has two components: the direct cost of care and the indirect expenses needed to develop systems and administer the program. According to national health expenditures reports, indirect expenses have been around 15 percent of total spending for more than 25 years. Currently, 8 percent of the total is associated with costs related to administering a program, such as billing and claims payments. The remaining costs are associated with other indirect services, such as research, public health and infrastructure. The 15 percent number may be understated, since it does not include provider-related administrative expenses like billing, scheduling, and so on.⁶

In the United States, there are many sources of funds, as shown in Figure 3. Only about 70 percent of total expenditures come from the three main payers: private health insurance, Medicare and Medicaid. The remaining funds come from a myriad of sources, including several government programs. The number of organizations administering programs is far greater than the ones shown. Each state has its own Medicaid rules, and each health plan has its own systems and rules.

Figure 3
Health Expenditures by Source of Funds



Source: Centers for Medicare & Medicaid Services, National health expenditure data: Historical, Last modified Jan. 8, 2018, <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.html>. Table 1. Accessed Nov. 29, 2018.

This fragmentation of care leads to additional costs and duplication of effort. For example, each health plan has employees dedicated to developing, maintaining and administering billing functions. Similarly, providers need sufficient staff to meet health plan requirements, like pre-authorization, which vary from health plan to health plan. Participants also expressed concerns about how antiquated the existing systems are, citing the use of fax machines as an example. Efforts to modernize administrative systems will be hampered by the inability of existing systems to transfer and use data from other sources.

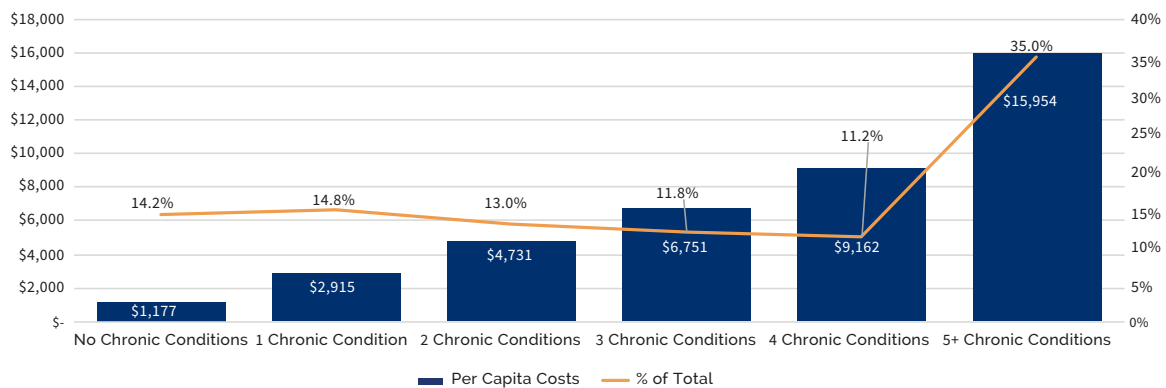
CONSUMERS AND POPULATIONS

At the end of the day, the cost of health care depends on decisions made by consumers with the support of their doctors and third parties, like public health organizations and employer care management programs. Each decision will depend on the person’s health status, resource availability and personal preferences. With that in mind, looking at concentrations of health care expenditures by key populations can be useful in finding ways to reduce costs and increase quality.

The Chronic Disease Burden

Remarkably, 86 percent of health care spending is for patients with one or more chronic conditions—conditions expected to last three months or more as shown in Figure 4. Among the chronic population, people with more than one condition account for 71 percent of total spending. The cost of chronic diseases goes far beyond the direct amounts spent on these diseases. In the United States, seven out of every 10 deaths are caused by chronic diseases each year.⁷ There are indirect costs through lost productivity and an unmeasurable loss in the quality of life and the loss of ability to perform activities of daily living, such as bathing and eating.⁸

Figure 4
Chronic Disease Costs



Sources: Gerteis, Jessie, David Izrael, Deborah Deitz, Lisa LeRoy, Richard Ricciardi, Therese Miller, and Jayasree Basu, 2014, Multiple Chronic Conditions Chartbook: 2010 medical expenditure panel survey data, Agency for Healthcare Research and Quality, AHRQ Pub. No. 14-0038, <https://www.ahrq.gov/sites/default/files/wysiwyg/professionals/prevention-chronic-care/decision/mcc/mccchartbook.pdf>, and National Center for Health Statistics, 2017, Health, United States, 2016: With chartbook on long-term trends in health, <https://www.cdc.gov/nchs/data/bus/bus16.pdf#053>. Accessed Nov. 29, 2018.

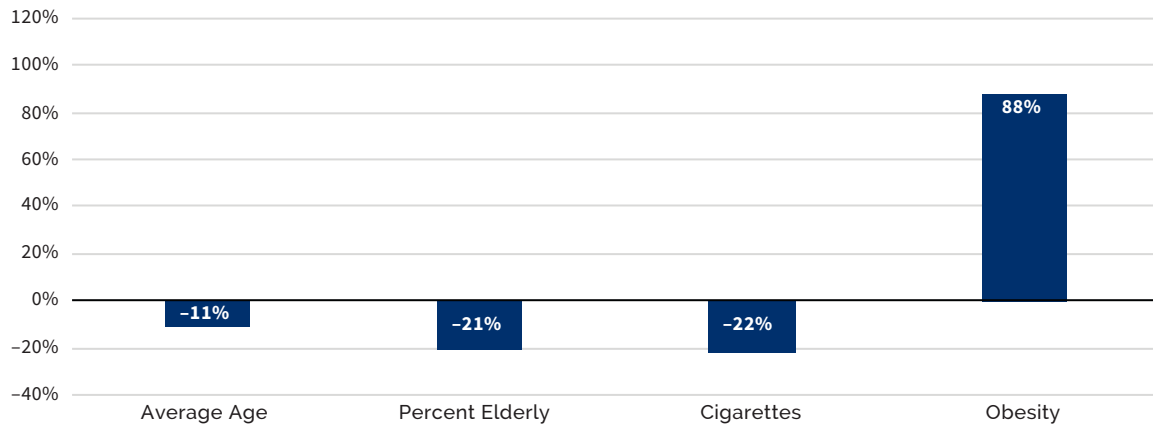
For adults, the most prevalent conditions are uncontrolled hypertension (uncontrolled blood pressure) and hyperlipidemia (high cholesterol and high triglycerides). For children, the most common conditions are allergies and asthma.

During the discussion, several participants with health plan ties indicated that the polychronics were the biggest concern, especially since there is a lack of robust cost-effectiveness measurement techniques for long-term solutions. They acknowledged that traditional longitudinal studies are valuable but indicated they tend to be very expensive and very specific. At least one participant noted that other countries have oversight boards set up to evaluate cost-effectiveness.

Risk Factors

Some risk factors for chronic diseases, like aging and family history, cannot be changed. Two key risk factors, smoking and obesity, can be modified. As Figure 5 shows, smoking rates in the United States are lower than comparable countries, but the obesity rates are much higher.

Figure 5
Key Risk Factors: U.S. as a Percentage of Difference From Comparable Countries



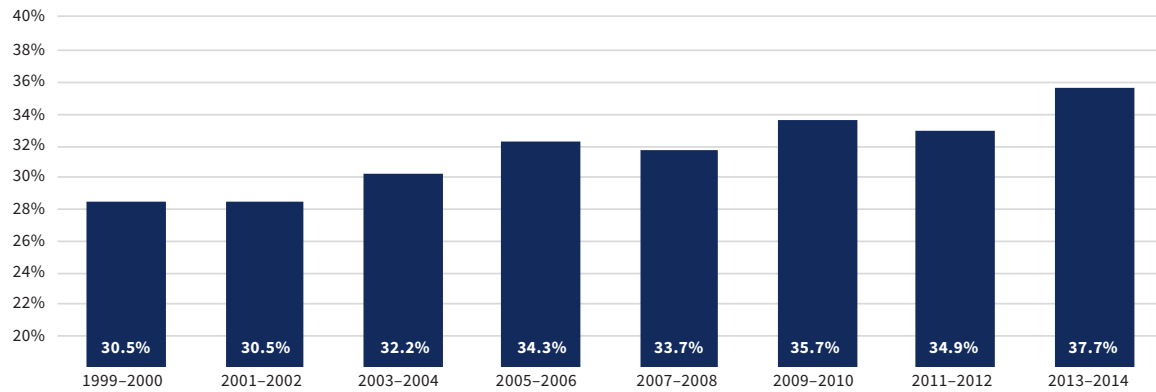
Source: Kamal, Rabah, Cynthia Cox, and Erik Blumenkranz, What do we know about social determinants of health in the U.S. and comparable countries? Health System Tracker, Nov. 21, 2017, https://www.healthsystemtracker.org/chart-collection/know-social-determinants-health-u-s-comparable-countries/?_sft_category=health-well-being#item-though-u-s-population-aging-younger-average-age-smaller-elderly-population-comparable-countries. Accessed Feb. 1, 2018.

Adult smoking rates have decreased from 41.9 percent in 1965 to 15.3 percent in 2015, a 63 percent drop.⁹ These favorable results are not by accident. The decrease began with the publication of the 1964 Surgeon General’s report in documenting the health impact of smoking and continued with several social marketing efforts that led to important regulations that banned advertising cigarettes on television and restricting smoking in public buildings.

Although these results are certainly encouraging, cigarette smoking is still the leading cause of preventable deaths in the United States. In fact, about one in five deaths are attributed to cigarette smoking. The estimated cost attributable to smoking is approaching \$300 billion, with direct costs of at least \$170 billion and loss of productivity at more than \$150 billion.¹⁰

There have been similar efforts to reduce the obesity rates, including commercially available diet and exercise programs, community outreach programs and clinical solutions, like gastric bypass surgery. In totality, however, these efforts have not been as successful, as shown in Figure 6. Currently, estimates for the cost of obesity range from \$147 billion to \$210 billion per year.¹¹

Figure 6
Adult Obesity Prevalence



Source: Ogden, Cynthia L., Margaret D. Carroll, Cheryl D. Fryar, and Katherine M. Flegal, 2015, Prevalence of obesity among adults and youth: United States, 2011–2014, NCHS Data Brief no. 219, <https://www.cdc.gov/nchs/data/databriefs/db219.pdf>. Accessed Nov. 29, 2018.

Treatment Compliance

In developing a treatment plan, a patient and his or her doctor often focus on how to avoid complications for a disease. Some common strategies for reducing the risk of complications include further reduction in modifiable risk factors through lifestyle changes and, in some cases, prescription medications. Regular office visits and tests are scheduled to make sure the patient stays on track.

In a 2011 *Consumer Reports* survey, one of the leading complaints among primary physicians is that patients do not take the doctor’s advice or follow treatment. For example, although 3.8 billion prescriptions are written every year, more than 50 percent of them are not taken or are taken incorrectly. The cost of noncompliance has been estimated at \$290 billion. Also, 125,000 deaths each year are attributed to poor medication compliance.¹²

The reasons for noncompliance are complex. In addition to the obvious reason, affordability, some of the reasons cited most often include:¹³

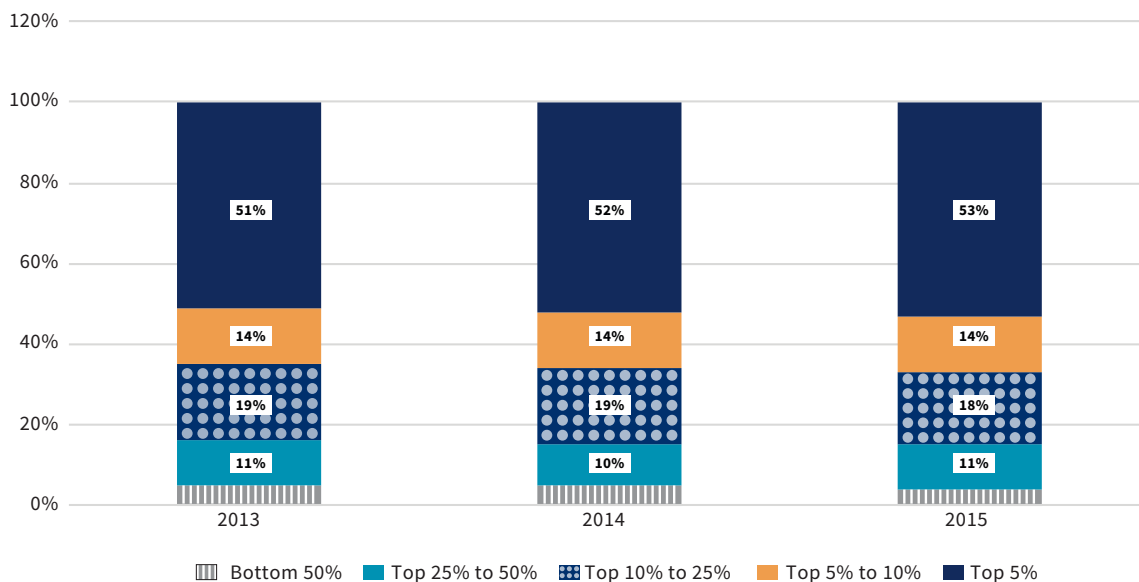
- Forgetfulness
- Perceived side effects
- Depression and other mental health conditions
- Lack of knowledge about the medication and benefits
- Trouble understanding the doctor’s advice
- Lack of social support for services, such as housing

Given this level of complexity, it is unlikely there will be a silver bullet to reduce the chronic disease burden. Instead, it is likely there will be multiple solutions geared toward specific consumers and populations. We can expect to see more research in this area going forward.

The 5/50 Population

According to a 2016 Agency for Healthcare Research and Quality (AHRQ) study, more than half of the cost of health care can be attributed to 5 percent of the population.¹⁴ This is certainly the case for the commercial population, as shown in Figure 7. A special case is end-of-life care for Medicare, where the last year of life represents about 25 percent of the total traditional Medicare spending.¹⁵

Figure 7
Adult Spending Share



Source: Johnson, Bill, and Sally Rodriguez, Top spenders among the commercially insured increased spending concentration and consistent turnover from 2013 to 2015, Health Care Cost Institute, Feb. 1, 2018, <https://www.healthcostinstitute.org/research/publications/hcci-research/entry/top-spenders-among-the-commercially-insured-increased-spending-concentration-and-consistent-turnover-from-2013-to-2015>. Accessed Nov. 29, 2018.

This concentration of costs can be very valuable in developing solutions, but we need to know more about the underlying population first. Does the 5/50 rule apply for all demographic groups? Are there predictors of the 5 percent population? Do the claims for the 5 percent tend to be episodic in nature? For example, solutions for patients in the 5 percent cohort year after year, like the frail elderly, will be different for those who are only in the 5 percent population during a specific episode of care.

The 5 percent population is important not only because it is a major driver of health care costs, but also because it is a major source of variation in health care. This variation impacts payers' ability to predict and budget health care costs. In addition, research results may be skewed because of this variation.

Section 3. What Can We Do About the Cost of Health Care?

After the discussion on cost drivers, the group turned its attention to identifying potential solutions, including current efforts. The Initiative 18|11 leadership team then used that list to determine priorities for the next phase of the initiative.

POTENTIAL SOLUTIONS

Most of our discussion centered around care transformation models, or Managed Care 3.0. This concept is still loosely defined at this point, but we can expect to see considerable evolution in both care models and administrative functions in the next few years as new technologies, data sources and analytical methods emerge. The changes will not be limited to technology alone. We can expect to see increased innovation in techniques to prevent diseases, identify gaps in care earlier and coordinate needed care. Also, many new players are entering the field. In some cases, the players are part of a large organization, like IBM Watson. In other cases, the player is smaller and more focused, like Navvis, AVIA or HMC HealthWorks.

We can expect each effort to claim significant savings. That said, undoubtedly, there will be significant overlap among these activities, which will make it difficult to measure the overall impact on the cost of care and to prioritize activities. New evaluation methods will likely be needed to measure this impact.

State, Local and Health Plan Solutions

Given the complexity associated with the chronic disease burden and the fragmentation of care in the U.S., most participants were convinced the key to reducing costs would be found in solutions developed at the state, local or health plan level. There has always been considerable activity in this area through the work of public health organizations, nongovernmental organizations and health plan wellness programs. Most of these types of efforts have centered on identifying gaps in care and coordinating care, two critical factors in managing the chronic disease burden. Traditionally, these types of efforts have focused only on medical services, but more and more we are seeing an emphasis on mental health services and other social support services, including housing. We are also seeing similar efforts by health plans. For example, some health plans have a "house call" program for Medicare and other at-risk members. Under this program, a nurse practitioner visits the member's home to determine if the member is indeed taking medication as prescribed, has transportation to office visits and so on.

According to the measures of success used in the 2018 Commonwealth Fund scorecard on state health system performance,¹⁶ on balance, health care systems exhibited more improvement than decline between 2013 and 2016. These measures cover access to health care, quality, efficiency, outcomes and disparities. States that have shown improvement tend to form community coalitions to achieve their results. States are still facing challenges in the form of higher death rates, high levels of obesity, the opioid epidemic and gaps in care.

In addition, we are seeing efforts to change how care is delivered. For example, there is a pilot program in Massachusetts that permits paramedics to treat some conditions at home rather than transport the patient to the emergency room.¹⁷ There are similar projects being sponsored by the Center for Medicare & Medicaid Innovation and organizations like the American Hospital Association.

One participant suggested we consider a “global budget for all” concept. This would be like Medicare Advantage for all, but it would be more flexible and give more independence at the state and local levels. The Maryland Health Enterprise Zone Initiative¹⁸ may serve as an early example of this type of approach.

Technology in Direct Patient Care

There has been a tendency to associate the use of technology with overutilization of MRI, CT scans and other costly procedures. The role of technology in health care is changing, however. A few examples:

- The technology associated with computer-assisted imaging continues to evolve in hopes that this will reduce the number of detection errors.
- We are seeing an increase in the use of robotic surgery, which often results in few complications, less pain and blood loss, and a quicker recovery. It remains to be seen if those benefits will offset the use of more costly equipment.
- Similarly, we are seeing a focus on targeted gene therapy for cancer treatment. This therapy uses information about a person’s genes and proteins to prevent, diagnose and treat cancer. In theory, this is a less toxic treatment because it is more precise. Although there are considerable benefits to this type of treatment, the cost of determining the exact regimen may more than offset any cost savings. There are considerable side effects to both forms of treatment.

Although all of these technologies show great promise, the role of the physician will continue to be key, especially when it comes to coordinating an overall treatment plan and communicating the results and options to the patient. Physicians will also need to be judicious in the use of technology because devices are not subject to the same regulatory scrutiny that drugs are.¹⁹

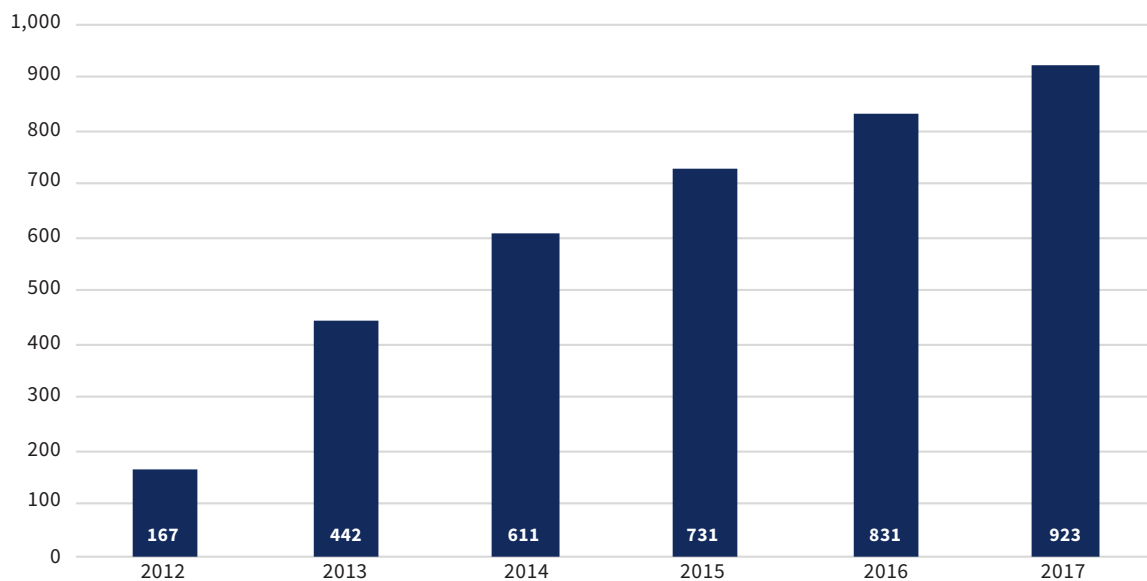
Value-Based Reimbursement Methodologies

Many in the health care community are exploring the possibility that value-based reimbursement (VBR) methodologies will serve as a forcing function like those found in other countries, but without the regulatory bureaucracy.

Under a VBR methodology, the provider is reimbursed not only on the services performed but also receives a bonus or pays a penalty based on compliance with specified quality and efficiency measures. Value-based reimbursement agreements rely heavily on the same techniques described above, like identifying gaps in care and coordination of care. In addition, services are generally performed at the lowest appropriate license level. Specific VBR agreements go by distinct names, including accountable care organizations (ACOs), medical home organizations and shared savings programs.

We are seeing an increase in the number of value-based agreements throughout the industry. For example, the number of CMS-approved ACOs has increased rapidly, as shown in Figure 8.

Figure 8
Number of ACOs



Sources: Muhlestein, David, Robert Saunders, and Mark McClellan, Growth of ACOs and alternative payment models in 2017, *Health Affairs* blog, June 28, 2017, <https://www.healthaffairs.org/doi/10.1377/bblog20170628.060719/full/>, and Centers for Medicare & Medicaid Services, CMS welcomes new and renewing Medicare shared savings program ACOs, SSP Fact Sheet, Jan. 18, 2017, <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/2017-MSSP-Fact-Sheet.pdf>. Accessed Nov. 29, 2018.

It is still too early to tell if VBR methodologies will live up to the promise. The overall penetration rate is still low, and most of the current arrangements are upside only (bonuses but no penalties). According to a recent study sponsored by HFMA, few value-based reimbursement models offer significant incentives to manage total cost of care.²⁰ This study also pointed out that early information shows results are often dependent on market circumstances, including competition between health systems and health plans.

One participant noted a drawback of current VBR agreements is that they are limited to a one-year time horizon. There is no construct that measures or rewards providers for longer-term improvements.

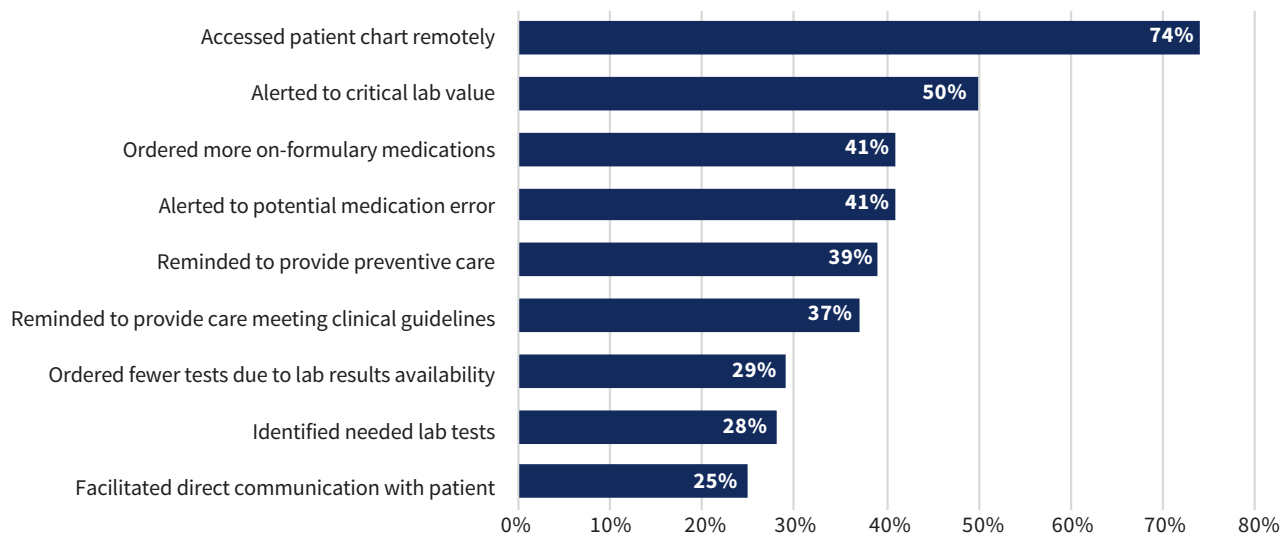
Data Sources and Data Systems

More and more data are becoming available to providers, consumers and researchers, including click-stream data, consumer demographics, telemonitoring results and electronic health records (EHRs).

The ACA required providers to adopt meaningful use electronic health records. So far, about 67 percent of providers have met this requirement,²¹ but there is general dissatisfaction with the functionality of the systems.

Currently, physicians are using EHRs primarily to access records, as shown in Figure 9. Over time, the group sees a real growth in the use of electronic health records not only to provide better care to individual patients but also to assist in research and to measure provider and system performance.

Figure 9
Benefits of Electronic Health Records



Source: Office of the National Coordinator for Health Information Technology (ONC). Benefits of EHRs, Last updated Oct. 5, 2017, <https://www.healthit.gov/providers-professionals/benefits-electronic-health-records-ehrs>. Accessed Feb. 1, 2018.

One challenge will be the interoperability of systems. That is, to make the best use of the new data, systems will have to be able to easily receive data, incorporate the data into their systems, and then use the data. Although this goal has not been achieved, the Office of the National Coordinator for Health Information Technology (ONC) has laid out a vision and road map for achieving this goal by 2024.²²

Clinical Research

Historically, the gold standard for clinical research has been the random control trial (RCT), since this is the best technique for determining if a new procedure or drug is effective on an “all other things being equal” basis. For example, suppose a new drug is being tested. Test subjects are divided into two groups: one that receives the new drug and one that receives a placebo. Results between the groups are compared to determine if there is a statistically significant difference between the two groups.

While it is unlikely RCTs will ever be replaced as the gold standard, we are seeing more emphasis on predictive analytics in research. For example, pharmaceutical companies are using artificial intelligence to narrow the search for potential therapies to solve a specific problem. Once the field is narrowed, potential therapies are then tested using standard clinical trial techniques.

Health plan researchers are using similar techniques to identify gaps in care and to predict large claims. Depending on the organization, there may or may not be a process in place to test the validity and reliability of the models over time.

Section 4. Initiative 18|11

This conference report represents the close of the initiative’s Phase 1, where the emphasis was on identifying the main drivers of cost in health care. We also began breaking down the siloes. The purpose of Phase 2 will be to complete some very defined steps to address the identified problems.

PHASE 2 PRIORITIES

In developing the priorities for Phase 2, the leadership team focused on projects that will be led by the three 18|11 partners but will include participants from other organizations. The three priorities are described below. In each case, the deliverable will be a formal document describing the subject in detail. That document will form the basis for follow-up articles, presentations and discussions.

- **The 5/50 Research Project.** This project will focus on the 5 percent of the population that causes 50 percent of the health care costs. The emphasis will be on determining how to predict who will fall into the 5 percent cohort and how to prevent or minimize the cost and variation associated with those people. The work for this project will be performed by SOA staff under the guidance of a project oversight team.

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- **Pharmacy Strategic Initiative.** The purpose of this initiative is to provide a description of the pharmacy development and pricing process from the time a new concept is developed until a person picks up a prescription at the pharmacy. The goal will be to provide transparency and understanding to the process. The final document will include a discussion of the recommendations from various organizations. This will be a volunteer-only effort.
- **Managed Care 3.0 Strategic Initiative.** The purpose of this initiative will be to build out the concepts described earlier, with an emphasis on understanding analytical and evaluation techniques. This will also be a volunteer-only effort.

Although the focus will be on the three projects described, we will continue to use resources to advance the discussion on other topics, such as obesity and consumer behavior.

After the deliverables described above are complete, then, undoubtedly, we will look for similar projects. In addition, we will be looking for opportunities to continue breaking down barriers. Although planning has just begun, the 2019 SOA Health Meeting, to be held June 24–26 in Phoenix, will provide a good opportunity for that.

This report was authored by Joan Barrett, FSA, MAAA, of Axene Health Partners. It was reviewed by Brian Pauley, FSA, MAAA; Joe Wurzbarger, FSA, MAAA; Sarah Osborne, FSA, FCA, MAAA; Karen Shelton, FSA, MAAA; Larry Levitt; Gary Claxton; and Cynthia Cox.

Endnotes

- ¹ Gonzales, Selena, and Bradley Sawyer. How does U.S. life expectancy compare to other countries? Health System Tracker, May 22, 2017, https://www.healthsystemtracker.org/chart-collection/u-s-life-expectancy-compare-countries/?_sf_s=life#item-u-s-lowest-life-expectancy-birth-among-comparable-countries. Accessed Nov. 29, 2018.
- ² Schneider, Eric C., Dana O. Sarnak, David Squires, Arnav Shah, and Michelle M. Doty. Mirror, Mirror 2017: International comparison reflects flaws and opportunities for better U.S. health care. The Commonwealth Fund, July 14, 2017, <https://www.commonwealthfund.org/publications/fund-reports/2017/jul/mirror-mirror-2017-international-comparison-reflects-flaws-and>. Accessed Nov. 29, 2018.
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