Value-Based Healthcare

The Evolutionary Alignment of Stakeholders within Cost, Quality, and Reality

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Introduction

The United States has been on a 70-year journey to expand affordable healthcare access. The results have been mixed as legislative efforts have rolled out starting in the 1960's when healthcare spending represented only 5% of U.S. Gross Domestic Product (GDP), growing to represent just under 20% of GPD in 2020 (Figure 1).¹ This presently correlates to \$4.1 trillion in annual healthcare spending, or \$12,530 per person. By 2028, annual healthcare spending is expected to reach \$6.2 trillion, equating to \$16,774 per person in the U.S.² As the U.S. has struggled with the rising cost of healthcare over the past few decades, the call for a fundamental shift in the delivery and payment system has fostered the growth of value-based healthcare (VBH).

VBH evolved and was influenced by eight healthcare reform paradigms that extended over a 40-year period (figure 2).³ VBH represents a transformational shift away from traditional care within a utilization driven fee-for-service (FFS) reimbursement model to a patient-centric quality driven model. VBH seeks to establish quality payments linked to outcomes and cost within an episode-of-care to incentivize removal of measurable cost and quality variances within a set population through improved coordination and utilization of care (Figure 3).⁴ Maintaining equitable and affordable access to quality care that maximizes stakeholder value within measurable outcomes are central goals evolving within the paradigm of VBH.^{3, 5-7}

The successful integration of VBH innovation requires three key stakeholders to be aligned: The patient, the physician/provider (the clinician), and the payer (the Big 3) as these are the key stakeholders at the point-of-service driving the healthcare patient journey and paying for the engagement. All other stakeholders (hospital, pharmaceutical, allied health professionals, post-acute and long-term care facilities, ambulatory diagnostic and surgical facilities, ancillary care facilities, laboratory, and medical equipment) are engaged by the Big 3 interactions. Within the complex U.S. healthcare system, there are competing agendas across multiple stakeholders that have created obstacles to healthcare cost containment and the sustainability of value-driven care as a societal return on investment for healthcare dollars spent.

In 2007, Porter and Teisberg challenged the status quo, calling physicians to lead a transformation within the healthcare delivery system with the central goal of defining and delivering higher value for patients.⁵ They proposed a value-based competition model that would rely less on punitive cost reduction strategies targeting the clinician stakeholder that

have historically driven vertical integration into consolidated higher cost delivery models and rely less on cost shifting to the patient stakeholder.⁷ Adapting these conceptual principles for value-based competition and health plan benefit design within the current cycle of VBH innovation and legislative initiatives identifies eight key VBH transformational principles: 1) The focal stakeholder is the patient 2) The core tenet for the return on healthcare expenditures within a population is to create value in the patient's healthcare journey within that population 3) Clinical outcomes and costs are attributed to a full cycle-of-care (episode-of-care) within a medical condition and its related co-morbidities as well as services and facility engagements within that defined cycle-of-care 4) Clinician and patient stakeholder coordination and collaboration of care along with disease severity site-of-service awareness enhance value and outcomes achieved 5) Clinician stakeholder's VBH competency and the patient stakeholder's health literacy and social determinants at the point-of-care directly impact value and outcomes achieved 6) Competition should be population-based and protectionist barriers to cost-effective healthcare transformation removed 7) Transparency of healthcare price and outcomes must be widely available 8) Administrative burdens of the clinician stakeholders should be minimized to facilitate increased engagement with the patient stakeholder.

The U.S. Healthcare Reform Journey to Value-Based Care: Alignment of the Big 3 Stakeholders

Within healthcare reform efforts of the past 70 years, Big 3 stakeholder alignment has had successes and failures. Prior to 1965, the health insurance market was dominated by fragmented employer-based plans. This left a gap in coverage for elderly and low-income populations. In 1965, Congress passed the Medicare and Medicaid Act to respond to this identified coverage gap.⁸ Following its enactment, Medicare, Medicaid, private insurance, veterans care programs, and worker's compensation provided a third-party payer system for health insurance coverage for a majority of Americans. As a result of siloed stakeholder interests within the FFS model, the financial burden of care between the Big 3 stakeholders led to significant increases in healthcare cost due to lack of coordination and accountability for the volume of care being delivered.⁹ In this FFS delivery model, clinicians and hospitals were paid based on the number of services billed irrespective of outcomes, leading to the significant increase in both utilization and cost as access to healthcare expanded.

With expanded access to care, health expenditures, representing a percentage of GDP, rose from 5% in 1960 to 7.4% by 1970 and lawmakers looked for a solution to these rising costs focusing on managing coordination of care ^{3,10}. These efforts ushered in the era of managed care with the passage of the Health Maintenance Organization (HMO) Act of 1973. ¹¹ This act expanded private healthcare coverage through federally mandated prepaid health plans within a payer driven initiative to align patient and clinician stakeholder incentives toward more cost-effective use of services.

The HMO model grew rapidly in the 1980s, driven by newfound access to capital markets within the conversion of not-for- profit healthcare systems to for-profit corporations.¹² The resulting profit-centric competition resulted in mispricing of HMO contracts and premiums leading to significant financial losses in the 1990's resulting in rapid premium increases for the patient stakeholder (Figure 4).¹³ By the late 1990s, the costs of health benefits had increased by 7.3% per annum, three times the rate of inflation.¹⁴ To curtail costs, HMOs reduced plan benefits, employed utilization management strategies (e.g.; prior authorization and medical

necessity denials), and implemented narrowed networks of clinicians engaged through primary care-based gatekeeper models.^{12,15}

These unfavorable changes to care access and cost driven by the HMOs reduced their popularity and public perception. A 1997 nationwide survey found that 55% of adults believed that managed care and HMOs were making no impact in healthcare cost containment.¹⁶ Similarly, the clinician stakeholder had lost support for the HMO model as increased use of medical necessity denials, prior authorization requirements for requested care, and narrower networks through the involuntary removal of clinicians from regional network panels.^{12,17} A 1996 survey demonstrated that only 14% of primary care providers (PCP) believed gatekeeping patient access restriction had a positive impact on appropriate use of specialists, whereas 40% viewed gatekeeping as obstructive.¹⁸ The survey also showed that specialists viewed PCPs as competitors rather than members of the same patient-centered team. The resulting alienation of the patient and clinician stakeholder, as well as secondary stakeholders, resulted in over 900 legislative actions, tort reforms, and class action lawsuits to curb HMO restrictions^{3, 19,20}

At the end of the HMO healthcare reform paradigm in the early 2000's, the clinician and patient stakeholders became aligned within opposition to the payer stakeholder driven reform efforts. However, the clinician-patient stakeholder structural alignment produced little immediate impact on actual healthcare reform other than through advocacy and electoral efforts which ultimately ushered in the value-based care era. It was also notable for the patient stakeholder's newfound voice as a consumer resulting from increased cost shifting as higher out-of-pocket costs and deductibles reduced access to affordable healthcare despite having health insurance coverage (Figure 5). ²

A necessary payer and clinician stakeholder risk alignment to drive value was achieved within the CMS Innovation Center's Physician Group Practice (PGP) Demonstration in 2005 that was the precursor test model to the Accountable Care Organization (ACO) model. It was codified in the Affordable Care Act (ACA) in 2010 and expanded further in 2015 with the Medicare Access and CHIP (Children's Health Insurance Program) Reauthorization Act (MACRA) with the repeal of the sustainable growth rate formula that mandated FFS physician payment cuts, establishing pay-for-performance and Alternative Payment Models (APMs)²¹⁻²³ An important milestone precursor to the ACA and MACRA was the near universal integration of Electronic Health Records (EHR) through incentives from the 2009 American Recovery and Reinvestment Act which offered the potential for aggregation of large amounts of populationbased healthcare data (Big Data) to analyze and manage care pathways between payer and clinician stakeholders.²⁴

The ACOs, powered by Big Data, laid the groundwork to operationalize VBH nationally within CMS pay-for-performance models with hospital systems and PCP groups engaging within ACOs. CMS established pay-for-performance (P4P) incentive APMs within the Pioneer and Medicare Shared Savings Program (MSSP) ACO Models.²⁵ When first introduced, there were upside only risk-sharing models where CMS assumed the downside risk utilizing traditional FFS payment models (Category II payments), meaning the opportunity for bonus payments for predefined quality performance without risk of a financial penalty for poor performance to the participating clinician within the ACO (Figure 6).²⁶ The introduction of NextGen (upside and downside risk models) , expansion of Medicare Advantage (Part C Medicare modified bidirectional capitated risk), and creation of REACH (health equity) ACO models were designed

to move ACOs and population health models further into Level III and IV APMs.²⁷⁻²⁹ Ending 2021, 59% of ACOs participating in a MSSP assumed bidirectional risk with 483 MSSP ACOs covering 11 million lives across the country, representing a >300% increase in participation since program implementation in 2012/2013.³⁰

Unintended adverse consequences occurred within these innovative reform efforts. The introduction of downside risk slowed the growth of ACOs within the MSSP program and began to contract after CMS initiated the Pathways to Success program introducing bidirectional risk sharing, bringing downside risk to the ACO models (Figure 7) ³¹ While allowing physician stakeholder participation in financial incentives offered alignment advantages that did flatten the healthcare expense curve as a portion of GDP level prior to the disruptive impact of Covid 19, the initial reduction in the annual percentage change in healthcare costs achieved soon after the passage of the ACA faded after the passage of MACRA in 2015 (Figures 1, 8)^{1,3}. MACRA-related quality reporting programs tied to future physician Medicare payment adjustments were also shown to be overly burdensome and penalized small group independent practitioners, concentrated in non-urban regions. ³²⁻³⁶ These groups lacked the necessary administrative scale to support the required reporting burdens and lower operational margins to absorb the FFS payment reductions, or lack of increases, to keep up with operational costs and inflation. This impact was felt most acutely in non-urban and criticalaccess hospital regions of the U.S. where most small group independent practitioners and smaller hospitals are located.³⁷⁻⁴¹ This unintended consequence favored the employed physician over the independent physician resulting in a positive influence for increased vertical integration which has been shown to increase Medicare costs long-term.⁴²⁻⁵³

For the patient stakeholder, similar in the prior HMO era, from 2010-2022 household out-of-pocket expenses, deductibles, continued to rise while premiums grew at a rate more than double that of inflation and workers earnings (Figures 4, 9,10)^{13,54}. Personal consumption of healthcare has shown a correlation with the percentage change in total healthcare costs (Figure 8)^{3,55}. This raises an interesting paradox: is the flattening in healthcare spending relative to GDP within the same timeframe partially driven by the patient's inability to afford and engage healthcare despite having healthcare insurance coverage? That trend would negatively impact the goals of VBH, leading to a decrease in timely access to preventative or early intervention care. The net impact results in a long term and gradual increase in higher disease and severity, furthering the complexity of healthcare management needs which dramatically escalates healthcare costs. Future VBH design models should drive access to care which produces the near and intermediate disease management impact necessary to lower future disease complexity and progression and result in lower long-term healthcare costs. VBH is not achievable when the access burden to preventative and timely care is too high for the population to engage.

WHERE DO WE GO FROM HERE

The past ten years have witnessed a significant expansion shifting from supply-driven, volume-based care to demand-driven, value-based care across all spectrums of healthcare. To understand and map out future innovation within America's future VBH journey one must recognize the key driver for change: the trend line to insolvency of the Medicare Trust Fund (figure 11).⁵⁶ With just under 65 million beneficiaries, Medicare is the single largest payer in the U.S. health system averaging \$2.27 billion in claims paid daily.² Considering the immense

number of daily payments conducted by CMS, it is imperative to understand that the transition to VBH innovation must be achieved on the infrastructure of the existing FFS system. The current logistics of the US healthcare electronic claims submission and adjudication system drives a significant amount of the strategic thought process because any new VBH model must somehow work within the existing electronic payment infrastructure.

The Medicare Trust Fund finances beneficiary health services claims that are projected to exceed total Fund income beginning in 2023 leading to fund capital depletion and insolvency (Table 1)⁵⁶. Current estimates are for Medicare costs to grow faster than GDP through 2070 as the U.S. population life expectancy grows, leaving Medicare with the largest Payer Enrolment Duration Liability Risk (PEDLR) compared to its payer peer group (Figure 12). ⁵⁷⁻⁶⁰ Thus, CMS has the most urgent need for a value-based healthcare solution for its growing beneficiary population obligations paired with a dwindling trust fund which accounts for its leadership in payment innovation strategy.

Since 2007, Medicare Advantage, (Part C private payer Medicare initiative) has been a leading value rather than volume driver of innovation; penetration has grown from 19% of the Medicare eligible population to 48%.⁶¹ In addition, the formation of the Centers for Medicare and Medicaid Innovation Center (CMMI) has deployed over 40 models involving 18 million across every state.⁶² While the growth and expansion of VBH has primarily been generated from CMMI in the Medicare population it has significantly impacted healthcare markets in commercial, employer, and Medicaid markets.

Big 3 Stakeholder sustainable VBH Innovation Strategy: EM³

A single stakeholder approach to VBH will fail to achieve a sustainable solution. For success to be achieved, the Big 3 stakeholders much be engaged and find benefit to build a sustainable solution. Strategically engaging in meaningful innovation solutions to achieve better value within constrained healthcare funds requires more dynamic solutions analysis than the single dimensional Value=Outcomes/Cost in the traditional VBH equation. Representation of the three stakeholders' unique roles and perspectives within VBH solutions strategies has not been captured within this single dimensional formula. Alignment on foundational elements where the Big 3 stakeholders can collaboratively engage to manage key variables impacting outcomes and costs within the VBH experience produces a sustainable value-oriented transformation. An examination of the fundamental needs and challenges of each stakeholder identifies three core principles where mutual benefit must be achieved in: 1) experience value, 2) economic value, and 3) outcome value (Figure 13).

The patient experience value add involves predictive mapping of the patient's care journey and strategically deploying resources to support and manage the patient's overall experience, resulting in an increase in compliance to the prescribed care. Patient journey mapping maximizes efficiency and care trackability to ensure strategies integrate with and support the patient's health literacy and social determinants impact. Clinician and payer stakeholders face the responsibility of collaboratively understanding their collective interactions along the patient's healthcare journey and how each will be supported and navigated to achieve improved healthcare outcomes. Coordination of care and communication is critical to a patient's retention and compliance along their healthcare journey and simplifies the overwhelming amount of information often inundating the patient. Clinicians must be responsible leaders of a comprehensive healthcare team collaborating resources addressing the complex biopsychosocial care needs of the patient. Improving patient experience means clinicians must focus beyond their therapeutic treatment strategy, which accounts for only 20% of health variation outcomes, and expand into the patient's health literacy and social determinants of health which account for 50% of variation in outcomes.⁶³ Clinician and payer stakeholders need to measure and map the patient experience to better understand how to collaborate and maximize the variables are vital to each patient's outcomes.

It is important as well to recognize the impact on patient experience within the scope of clinician wellness especially within the current context of rising professional burnout. Clinician burnout rates achieved a historic high in 2021 with over 60% up from 45% ten years earlier.⁶⁴ A CHG Healthcare study found that 80% of all clinicians were experiencing some form of burnout prior to the COVID pandemic, and after the pandemic over 62% respondents indicated the burnout issues had increased.⁶⁵ New emerging VBH innovation dimension must assess clinician experience and professional satisfaction alignment within measurable variables that directly impact the clinician/patient relationship within the patient's clinical care journey.⁶⁶⁻⁶⁹ Clinician experience and the capacity for empathy and effective patient engagement is diminished with increasing administrative and EHR reporting burdens, low staffing levels, and barriers to delivering care to patients (i.e., prior authorization and care denials).⁷⁰⁻⁷²

It is essential for VBH to contribute both economic value and benefit to the key stakeholders to sustain the VBH transformation. Patients need economic simplicity and certainty. Clinicians and payers create undue stress exasperating patient mental health issues by promoting and permitting practices such as surprise billing, inaccurate and confusing billing statements, complex benefit plans, opaque pricing information, and disassociating outcomes and experience with payments.^{72,73} Payers need to achieve expected economic value within clinician engagement by aligning the exchange of services for payments based on clear and consistent outcome measures. To expand adoption of VBH programs across all clinicians the VBH payment and cost methodologies need to be sustainable and demonstrate a clear path in returning economic value for investments required to engage these VBH platforms. Clinicians engaging in VBH will need to add significant resources in staffing, technology, and operations to capture and improve value to payer and patient stakeholders, so it is vital to know these investments will be offset with reasonable and reliable financial incentives. These investments demand an unequivocal APM model which is reasonably achievable and viable for all clinicians, both employed and independent.

Long-term, it is problematic that in most VBH models the clinician stakeholder is benchmarked against their previous year's performance which means the net return for high performing clinicians' contracts rapidly in a race to the bottom as they excel in VBH payment models.⁷⁴ Thus VBH high value performers would eventually be devalued within future performance measures as their ongoing net impact on change in value would be negligible despite delivering excellent VBH care within existing APMs. This explains clinician APM attrition. In the Bundled Payments for Care Improvement (BPCI) model between 40% to 60% of participants exited from the program within three years.⁷⁵ It will be difficult to adopt new VBH models if 50% of clinician participants cannot achieve long-term financial sustainability based on predictable and acceptable economic models. Another critical area of economic value in VBH is aligning population health and episode-of-care models. The overlap between BPCI and ACO models increased significantly over the course of development going from a one in ten patients overlapping to one in four.⁷⁶ Overlapping APMs risk provoking conflict and fragmentation between clinician stakeholders by creating confusion as to who is the responsible party. Currently, the ideology has been to default to a single physician, the PCP, however if we have not learned from the history of the PCP gatekeeper era, we are doomed to repeat the history of its epic failure. Healthcare is an immensely complicated field which requires years of specialized training to develop skilled clinicians and specialists, so it is crucial to build VBH models organized around the appropriate key clinician necessary to treat the patient within their care journey.

All the Big 3 stakeholders want value achievable within the outcomes of VBH models and these outcome measures necessitate a methodology which can be achieved, consistently measured and benchmarked, provide meaningful results, and remain fully transparent. Patient reported outcomes measures (PROMs) are designed to detect the value a patient perceives from the care delivered. Clinician and payer stakeholders should look to expand upon next generation PROMs to better understand all dimensions of value received by the patient while improving both patient compliance within PROM response rates and the operational functionality of the data generated. Current reporting of PROMs, which rely on comparing mean differences between groups rather than the proportion of patients who meet a clinically relevant threshold, may overestimate treatment effects for individual patients.⁷⁷ Development of diagnostic reported measures, care coordination measures, and clinician experience measures allow for the establishment of standards which can be benchmarked through claims and/or EHR data, providing a foundation on which clinician and payer stakeholders can agree on VBH best practice and alleviate the need for payer centric prior authorization and denial of care which prevents timely efficient care delivery. These clinical measures should look to other non-traditional co-morbidities that affect outcomes such as in behavioral health, mental health, and social determinants of health to provide a comprehensive and all-encompassing understanding of the patient's true experience and barriers to successful care. By introducing clinician experience measures within VBH models, one can correlate the PROM data and other clinical measures evaluating the clinician skills, empathy, and outcomes necessary to maintain improve a patient's healthcare status. Developing and refining VBH measures relating to the management of cost and clinical outcomes requires collaboration among the payer and clinician stakeholder, and full collaboration of the Big 3 stakeholders relating to the patient's experience.

For VBH to succeed within a population, it must expand to become a collaborative effort. True value can be achieved when all three key stakeholders find common ground and areas of mutual benefit.

Figures and Tables

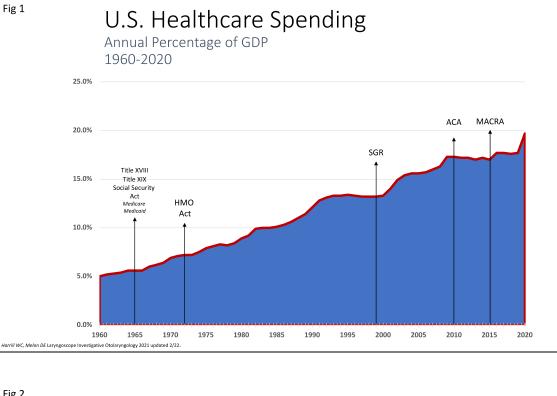
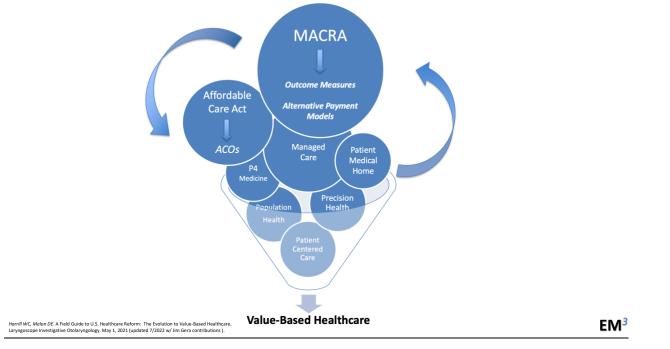
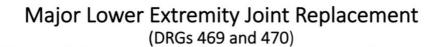


Fig 2





90-day Episode-of-Care Cost Single Orthopedic Group

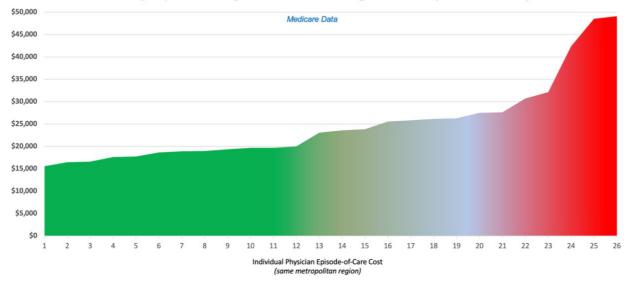
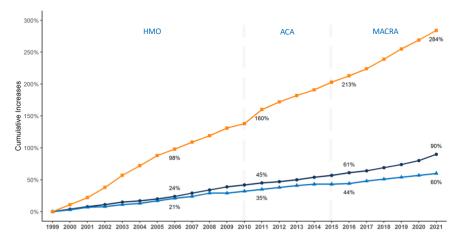


Fig 4

Value-Based Healthcare Stake Holder: The Patient Consumer

- Workers' Earnings - Overall Inflation - Family Premiums



2021 KFF Employer survey

Fig 3

Household Out-of-Pocket Health Spending 1987-2020

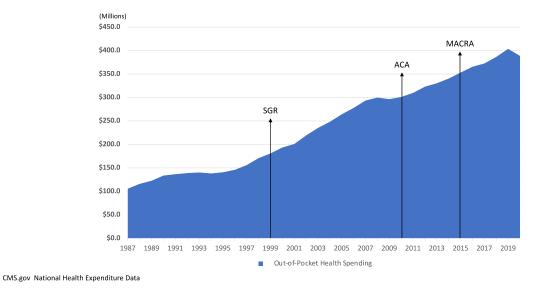
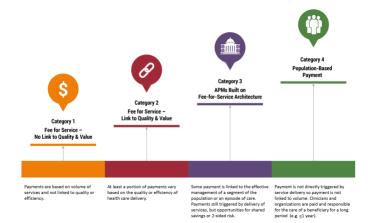


Fig 6

VBH Payment Models

2020 Healthcare Spending Percentages





Medicare MSSP ACO Growth

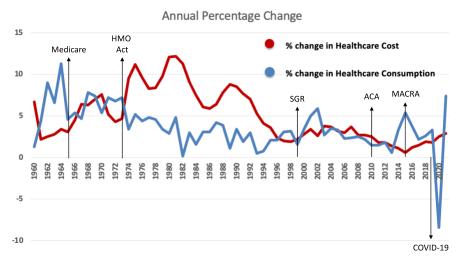


Fig 8

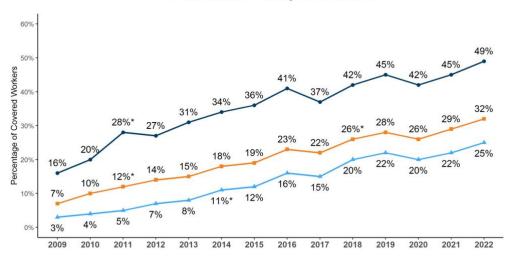
NAACOS

U.S. Personal Consumption of Healthcare

Impact of Affordability on Utilization 1960-2021



Percentage of Covered Workers Enrolled in a Plan with a General Annual Deductible of \$2,000 or More for Single Coverage, by Firm Size, 2009-2022



- All Small Firms - All Large Firms - All Firms

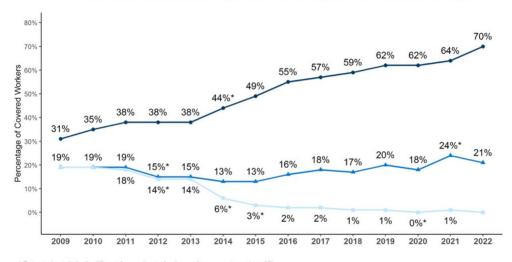
* Estimate is statistically different from estimate for the previous year shown (p < .05).

NOTE: Small Firms have 3-199 workers and Large Firms have 200 or more workers. These estimates include workers enrolled in HDHP/SOs and other plan types. Average general annual deductibles are for in-network providers.

SOURCE: KFF Employer Health Benefits Survey, 2018-2022; Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 2009-2017

Fig 10 Percentage of Covered Workers in a Plan with an Out-of-Pocket Maximum Above Certain Thresholds for Single Coverage, 2009-2022

- OOP Maximum Above \$3,000 - OOP Maximum Above \$6,000 - OOP Maximum Above \$8,700



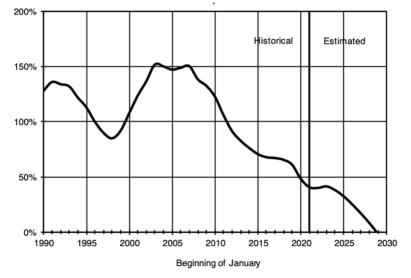
* Estimate is statistically different from estimate for the previous year shown (p < .05).

NOTE: OOP is 'out-of-pocket'. OOP maximums are for in-network services. Covered workers without an OOP maximum are considered to be exposed to at least the specified threshold. Some of these workers may be enrolled in plans whose cost-sharing structure has other limits. SOURCE: KFF Employer Health Benefits Survey, 2018-2022; Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 2009-2017

Fig 9

Medicare Trust Fund Insolvency Projections

Trust Fund Balance as percentage of annal expenditures



https://www.cms.gov/files/document/2022-medicare-trustees-report.pdf

Table 1

Estimated Proforma of the Medicare Trust Fund

Calendar Years 2021-2013

Calendar y ear	Total income ¹	Total expenditures	Change in f und	Fund at y ear end	Ratio of assets to expenditures ²
2021 ³	\$337.4	\$328.9 ⁴	\$8.5	\$142.7	41%
2022	386.0	356.24	29.8	172.4	40
2023	412.6	415.6	-3.0	169.4	41
2024	430.2	444.6	-14.3	155.1	38
2025	450.5	476.7	-26.2	128.9	33
2026	475.1	510.7	-35.6	93.3	25
2027	500.4	545.4	-45.0	48.3	17
2028 ⁵	523.7	580.6	-56.9	-8.6	6
2029 ⁵	547.9	616.6	-68.7	-77.3	6
2030 ⁵	570.4	650.5	-80.1	-157.4	6
2031 ⁵	593.7	683.7	-90.0	-247.4	6

¹ Includes interest income

²Ration of assets in the fund at the beginning of the year to expednitures during the year

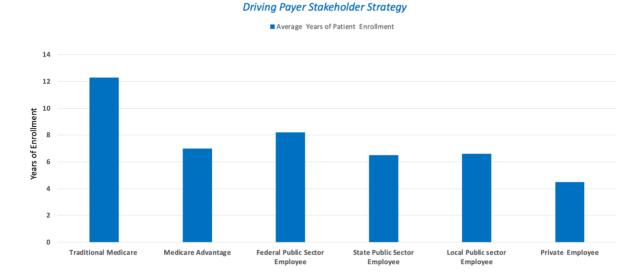
²Ration of assets in the fund at the beginning of the year to experiments using one year ²Figures for 2021 represent actual experience ⁴includes net repaymets of \$29.1 billion and \$34.4 billion in calendar years 2021 and 2022, respectively for Medicare Acellerated and Advanced Payments Program ⁵Estimates for 2028 and later are hypothetical since the Medicare Trust Fund would be depleted in those years ⁶Medicare Trust Fund reserves would be depleted at the beginning of 2028

https://www.cms.gov/files/document/2022-medicare-trustees-report.pdf

Fig 11

Fig 12

Payer Enrollment Duration Liability Risk (PEDLR)



Interdisciplinary VBH Stakeholder Approach A Three-Dimensional Model

Fig 13



Patient Experience Management: EM³

• Management of the Patient's Experience

- ٠ PATIENT JOURNEY MAPPING
- . PATIENT HEALTH LITERACY AND SOCIAL DETERMINANTS IMPACT
- PATIENT REPORTED EXPERIENCE MEASURES •
- PHYSICIAN/PROVIDER WELLNESS IMPACT •

Management of the Cost of that Experience

- CLAIMS-BASED QUALITY MEASURES
 - EPISODE-OF-CARE
 - DISEASE SEVERITY MEDICAL COST VARIANCE
 - DISEASE SEVERITY SITE-OF-SERVICE MANAGEMENT
- PHYSICIAN/PROVIDER HEALTHCARE COST LITERACY
- PRICE TRANSPERANCY

· Management of the Clinical Outcomes of that Experience

- COORDINATION OF CARE MEASURES
- PATIENT REPORTED OUTCOME MEASURES
- DIAGNOSTIC REPORTED MEASURES
- PHYSICIAN/PROVIDER EXPERIENCE MEASURES
- EQUITABLE ACCESS & DELIVERY OF CARE MEASURES

Citations

- Centers for Medicare and Medicaid Services. National Healthcare Expenditures by Type of Service and Source of Funds: 1960-2020. <u>https://www.cms.gov/research-statisticsdata-and-systems/statistics-trends-andreports/NationalHealthExpendData/NationalHealthAccountsHistorical</u>. Accessed September 4, 2022.
- Centers for Medicare and Medicaid Services. Historical National Health Expenditure Data. <u>https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trendsand-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical</u>. Accessed September 28, 2022.
- 3. Harrill WC, Melon DA. A field guide to US healthcare reform: the evolution to valuebased healthcare. Laryngoscope Investig Otolaryngol. 2021;6(3):590-599.
- 4. MI-Logix Inc. Episode-of-Care Analysis BPCI year 1 and 2 Major Joint Replacement of the Lower Extremity. Personal Communication
- 5. Teisberg E, Wallace S, O'Hara S. Defining and Implementing Value-Based Health Care: A Strategic Framework. Acad Med. 2020 May;95(5):682-685.
- 6. Porter ME, Teisberg EO. How physicians can change the future of health care. JAMA. 2007 Mar 14;297(10):1103-11.
- 7. Porter, Michael E., and Elizabeth Olmsted Teisberg. *Redefining health care: creating value-based competition on results*. Harvard business press, 2006.
- National Archives. Medicare and Medicaid Act of 1965. <u>https://www.archives.gov/milestone-documents/medicare-and-medicaid-act. Accessed</u> <u>10/24/22.</u>
- 9. Kongstvedt P. Essentials of managed health care. 6th edition. Burlington: Jones & Bartlett Learning; 2013.
- 10. Centers for Medicare and Medicaid Services. *NHE Summary, including share of GDP, CY* 1960-2020. <u>https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical</u>. Accessed September 4, 2022.
- Congress.gov: H.R. 7974 -Health Maintenance Organization Act. <u>https://www.congress.gov/bill/93rd=congress/house-bill/7974</u>. Accessed September 4, 2022.
- 12. Hadley JP, Langwell K. Managed care in the United States: promises, evidence to date and future directions. Health Policy. 1991;19(2-3):91-118.
- 13. Kaiser Family Foundation. 2021 Employer Health Survey. <u>https://files.kff.org/attachment/Report-Employer-Health-Benefits-2021-Annual-Survey.pdf</u>. Accessed Sept 13, 2022.
- 14. Gruber LR, Shadle M, Polich CL. From movement to industry: the growth of HMOs. Health Aff (Millwood). 1988 Summer;7(3):197-208.

- 15. Sekhri NK. Managed care: the US experience. Bull World Health Organ. 2000;78(6):830-844.
- Leavitt Partners/Brookings Institution. <u>https://www.brookings.edu/wp-</u> <u>content/uploads/2016/06/Impact-of-Accountable-CareOrigins-052015.pdf</u>. Accessed September 5, 2022.
- 17. Blendon RJ, Brodie M, Benson JM, Altman DE, Levitt L, Hoff AT, Hugick L. Understanding the managed care backlash. *Health Aff (Millwood)*. 1998;17(4):80-94.
- 18. Bodenheimer T, Lo B, Casalino L. Primary care physicians should be coordinators, not gatekeepers. JAMA. 1999;281(32):2045-2049.
- 19. Havighurst CC. Consumers versus managed care: the new class actions. Health Aff (Millwood). 2001 Jul-Aug;20(4):8-27.
- Center for Justice and Democracy: Hypocrities of "Tort Reform" Doctors and organized Medicine. <u>https://www.centerjd.org/system/files/MDHypocrites.pdf</u>. Accessed September 29, 2022.
- 21. Centers for Medicare and Medicaid Services. Medicare Physician Group Practice Demonstration. https://innovation.cms.gov/innovation-models/physician-group-practice-transition. Accessed October 26, 2022.
- Congress.gov: H.R.3590 Patient Protection and Affordable Care Act. https://www.congress.gov/bill/111th-congress/house-bill/3590/. Accessed October 26, 2022.
- 23. Centers for Medicare and Medicaid Services. Medicare Access and CHIP Reauthorization Act of 2015 (MACRA). https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/MACRA-MIPS-and-APMs. Accessed, Sept 23, 2022.
- 24. Medicare and Medicaid programs; electronic health record incentive program. Final rule. Fed Regist. 2010;75(144):44313-44588.Phillips AD. The origins of the shift toward value-based care. <u>https://www.imohealth.com/ideas/article/the-origins-of-the-shift-toward-value-based-care</u>. Accessed September 17, 2022.
- 25. Centers for Medicare and Medicaid Services. Shared Savings Program. <u>https://www.cms.gov/Medicare/Medicare-Fee-for-Service-</u> <u>Payment/sharedsavingsprogram</u>. Accessed October 22, 2022.]
- 26. Healthcare Payment Learning & Action Network (HCPLAN). Alternative Payment Model (APM) Framework. <u>http://hcp-lan.org/workproducts/apm-refresh-whitepaper-final.pdf</u>. Accessed September 1, 2022.
- 27. Centers for Medicare and Medicaid Services. Next Generation ACO Model. <u>https://innovation.cms.gov/innovation-models/next-generation-aco-model</u>. Accessed September 1, 2022
- Centers for Medicare and Medicaid Services. Medicare Advantage Value-Based Insurance Design Model. <u>https://innovation.cms.gov/innovation-models/vbid</u>. Accessed October 22 2022.
- Centers for Medicare and Medicaid Services. ACO REACH. <u>https://innovation.cms.gov/innovation-models/aco-reach</u>. Accessed September 1, 2022.

- 30. Centers for Medicare and Medicaid Services. <u>https://www.cms.gov/files/document/2022-shared-savings-program-fast-facts.pdf</u>. Accessed September 17, 2022
- National Association of ACO's. MSSP ACO participation. <u>https://www.naacos.com/press-release--medicare-aco-participation-flat-in-2022</u>. Accessed October 22, 2022.
- 32. Centers for Medicare and Medicaid Services. Pathways to Success Program. https://www.cms.gov/newsroom/fact-sheets/final-rule-creates-pathways-successmedicare-shared-savings-program
- **33.** Gettel CJ, Han CR, Canavan ME, Bernheim SM, Drye EE, Duseja R, Venkatesh AK. The 2018 Merit-based Incentive Payment System: Participation, Performance, and Payment Across Specialties. Med Care. 2022 Feb 1;60(2):156-163.
- Miller LE, Kondamuri NS, Xiao R, Rathi VK. Otolaryngologist Performance in the Merit-Based Incentive Payment System in 2018. Otolaryngol Head Neck Surg. 2022 May;166(5):858-861.
- 35. Cwalina TB, Jella TK, Acuña AJ, Samuel LT, Kamath AF. How Did Orthopaedic Surgeons Perform in the 2018 Centers for Medicaid & Medicare Services Merit-based Incentive Payment System? Clin Orthop Relat Res. 2022 Jan 1;480(1):8-22.
- 36. Khullar D, Bond AM, O'Donnell EM, Qian Y, Gans DN, Casalino LP. Time and Financial Costs for Physician Practices to Participate in the Medicare Merit-based Incentive Payment System: A Qualitative Study. JAMA Health Forum. 2021 May 14;2(5):e210527.
- 37. Qi AC, Joynt Maddox KE, Bierut LJ, Johnston KJ. Comparison of Performance of Psychiatrists vs Other Outpatient Physicians in the 2020 US Medicare Merit-Based Incentive Payment System. JAMA Health Forum. 2022 Mar 25;3(3)
- 38. Rosenblatt RA, Hart LG. Physicians and rural America. West J Med. 2000 Nov;173(5):348-51.
- Kelley E, Lipscomb R, Valdez J, Patil N, Coustasse A. Medicare Access and CHIP Reauthorization Act and Rural Hospitals. Health Care Manag (Frederick). 2019 Jul/Sep;38(3):197-205.
- 40. Department of Health and Human Servcies. HRSA Workforce. <u>https://bhw.hrsa.gov/sites/default/files/bureau-health-workforce/data-research/hwsm-</u> <u>rural-urban-methodology.pdf</u>. Accessed October 15, 2022.
- 41. Harrill WC, Melon DE, Seshul MJ, Katz MS, Zanation AM. Contemporary analysis of practicing otolaryngologists. Laryngoscope. 2018 Nov;128(11):2490-2499.
- 42. Government Accountability Office. Healthcare quality: CMS could more effectively ensure its quality measurement activities promote its objectives. <u>https://www.gao.gov/assets/gao-19-628.pdf</u>. Accessed 10/25/22
- Kelley E, Lipscomb R, Valdez J, Patil N, Coustasse A. Medicare Access and CHIP Reauthorization Act and Rural Hospitals. Health Care Manag (Frederick). 2019 Jul/Sep;38(3):197-205.
- Song Z, Wallace J, Neprash HT, McKellar MR, Chernew ME, McWilliams JM. Medicare Fee Cuts and Cardiologist-Hospital Integration. JAMA Intern Med. 2015 Jul;175(7):1229-31.

- 45. Johnston KJ, Wiemken TL, Hockenberry JM, Figueroa JF, Joynt Maddox KE. Association of Clinician Health System Affiliation With Outpatient Performance Ratings in the Medicare Merit-based Incentive Payment System. JAMA. 2020 Sep 8;324(10):984-992.
- **46.** Richards MR, Seward JA, Whaley CM. Treatment consolidation after vertical integration: Evidence from outpatient procedure markets. J Health Econ. 2022 Jan;81:102569.
- Post B, Norton EC, Hollenbeck B, Buchmueller T, Ryan AM. Hospital-physician integration and Medicare's site-based outpatient payments. Health Serv Res. 2021 Feb;56(1):7-15.
- 48. Reschovsky JD, Rich E. Hospital Acquisition of Physician Groups: On the Road to Value-Based or Higher-Priced Care? JAMA Intern Med. 2015 Dec;175(12):1939-41.
- 49. Neprash HT, Chernew ME, Hicks AL, Gibson T, McWilliams JM. Association of Financial Integration Between Physicians and Hospitals With Commercial Health Care Prices. JAMA Intern Med. 2015 Dec;175(12):1932-9.
- 50. Masoudi FA, Viragh T, Magid DJ, Moghtaderi A, Schilsky S, Sage WM, Goodrich G, Newton KM, Smith DH, Black B. Trends in Medicare Payment Rates for Noninvasive Cardiac Tests and Association with Testing Location. JAMA Intern Med. 2019 Dec 1;179(12):1699-1706.
- 51. Godwin J, Arnold DR, Fulton BD, Scheffler RM. The Association between Hospital-Physician Vertical Integration and Outpatient Physician Prices Paid by Commercial Insurers: New Evidence. Inquiry. 2021 Jan-Dec;58
- 52. Sen AP, Singh Y, Anderson GF. Site-based payment differentials for ambulatory services among individuals with commercial insurance. Health Serv Res. 2022 Oct;57(5):1165-1174.
- 53. Medpac. Aligning fee-for-service payment rates across ambulatory settings. <u>https://www.medpac.gov/document/http-www-medpac-gov-docs-default-source-default-document-library-jun21_ch6_medpac_report_to_congress_sec-pdf-copy/</u>. Accessed 10/24/22.
- 54. Kaiser Family Foundation. 2022 Employer Health Survey. https://www.kff.org/healthcosts/report/2022-employer-health-benefits-survey/. Accessed October 28, 2022.
- 55. The Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical

Insurance Trust Funds. https://www.cms.gov/files/document/2022-medicare-trustees-

report.pdf. Accessed October 24, 2022.

- 56. U.S. Census Bureau. Historical and projected gains to life expectancy: 1960-2060. <u>https://www.census.gov/library/working-</u> papers/2019/demo/paa19 medina sabo.html. Accessed October 24, 2022.
- 57. Fang H, Frean M, Sylwestrzak G, Ukert B. Trends in Disenrollment and Reenrollment Within US Commercial Health Insurance Plans, 2006-2018. JAMA Netw Open. 2022 Feb 1;5(2)
- Meyers DJ, Belanger E, Joyce N, McHugh J, Rahman M, Mor V. Analysis of Drivers of Disenrollment and Plan Switching Among Medicare Advantage Beneficiaries. JAMA Intern Med. 2019 Apr 1;179(4):524-532.

- **59.** Dong J, Zaslavsky AM, Ayanian JZ, Landon BE. Turnover among new Medicare Advantage enrollees may be greater than perceived. Am J Manag Care. 2022 Oct;28(10):539-542.
- 60. Finances Online Reviews for Business. Employee Turnover Statistics. <u>https://financesonline.com/employee-turnover-statistics.</u> Accessed October 24, 2022.
- 61. Kaiser Family Foundation. Medicare Advantage in 2022: Enrollment Update and Key Trends. <u>https://www.kff.org/medicare/issue-brief/medicare-advantage-in-2022-enrollment-update-and-key-trends/</u>. Accessed October 28, 2022.
- 62. Kaiser Family Foundation. "What is CMMI?" and 11 other FAQs about the CMS Innovation Center. <u>https://www.kff.org/medicare/fact-sheet/what-is-cmmi-and-11-other-faqs-about-the-cms-innovation-center/</u>. Accessed October 28, 2022.
- 63. Assistant Secretary for Planning and Education. Addressing Social Determinants of Health: Examples of Successful Evidence-Based Strategies and Current Federal Efforts. <u>https://aspe.hhs.gov/sites/default/files/documents/e2b650cd64cf84aae8ff0fae7474af8</u> <u>2/SDOH-Evidence-Review.pdf</u>. Accessed October 28, 2022.
- 64. American Medical Association. Pandemic pushes U.S. doctor burnout to all-time high of 63%. https://www.ama-assn.org/practice-management/physician-health/pandemic-pushes-us-doctor-burnout-all-time-high-63#:~:text=The%20researchers%20found%20that%2C%20overall,consistent%20across%20nearly%20all%20specialties. Accessed October 22, 2022.
- 65. CHG Healthcare. Addressing provider burnout in the wake of the COVID pandemic. <u>https://chghealthcare.com/blog/address-provider-burnout/</u>. Accessed October 22, 2022.
- 66. Dewa CS, Loong D, Bonato S, Trojanowski L, Rea M. The relationship between resident burnout and safety-related and acceptability-related quality of healthcare: a systematic literature review. BMC Med Educ. 2017 Nov 9;17(1):195.
- 67. Rathert C, Williams ES, Linhart H. Evidence for the Quadruple Aim: A Systematic Review of the Literature on Physician Burnout and Patient Outcomes. Med Care. 2018 Dec;56(12):976-984.
- Ogundeji YK, Quinn A, Lunney M, Chong C, Chew D, Hopkin G, Senior P, Sumner G, Williams J, Manns B. Optimizing Physician Payment Models to Address Health System Priorities: Perspectives from Specialist Physicians. Healthc Policy. 2021 Aug;17(1):58-72.
- 69. Hodkinson A, Zhou A, Johnson J, Geraghty K, Riley R, Zhou A, Panagopoulou E, Chew-Graham CA, Peters D, Esmail A, Panagioti M. Associations of physician burnout with career engagement and quality of patient care: systematic review and meta-analysis. BMJ. 2022 Sep 14;378:e070442.
- 70. Tajirian T, Stergiopoulos V, Strudwick G, Sequeira L, Sanches M, Kemp J, Ramamoorthi K, Zhang T, Jankowicz D. The Influence of Electronic Health Record Use on Physician Burnout: Cross-Sectional Survey. J Med Internet Res. 2020 Jul 15;22(7):e19274.
- Li C, Parpia C, Sriharan A, Keefe DT. Electronic medical record-related burnout in healthcare providers: a scoping review of outcomes and interventions. BMJ Open. 2022 Aug 19;12(8)
- 72. Kyle MA, Frakt AB. Patient administrative burden in the US health care system. Health Serv Res. 2021 Oct;56(5):755-765. doi: 10.1111/1475-6773.13861.

- 73. Tipirneni R, Politi MC, Kullgren JT, Kieffer EC, Goold SD, Scherer AM. Association Between Health Insurance Literacy and Avoidance of Health Care Services Owing to Cost. JAMA Netw Open. 2018 Nov 2;1(7):e184796.
- 74. Healthcare Innovation. Senior Leaders Push Forward Through the Complexities of Value-Based Contracting. <u>https://www.hcinnovationgroup.com/population-health-</u> <u>management/payers-providers/article/21270775/senior-leaders-push-forward-through-</u> <u>the-complexities-of-valuebased-contracting</u>. Accessed October 28, 2022.
- Lewin Group. CMS Bundled Payments for Care Improvement Initiative Models 2-4: Year
 7 Evaluation & Monitoring Annual Report. <u>https://innovation.cms.gov/data-and-reports/2021/bpci-models2-4-yr7evalrpt</u>. Accessed October 28, 2022.
- 76. Journal of Hospital Medicine. Overlap between Medicare's Voluntary Bundled Payment and Accountable Care Organization Programs. <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7412968/</u>. Accessed on October 28, 2022.
- 77. Annals of Surgery Open. Patient Reported Outcome Measures: Challenges in the Reporting.

https://journals.lww.com/aosopen/Fulltext/2021/09000/Patient_Reported_Outcome_ Measures__Challenges_in.3.aspx. Accessed on October 28, 2022.