



Migrating from the Fee-For-Service Model to the Value-Based Model

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Abstract

The United States healthcare has remained the most expensive healthcare system in the world. The budget allocated to healthcare has seen a tremendous increase yearly. However, the healthcare landscape is changing with patients demanding more value for healthcare. Traditional fee-for-service model where payment is dependent on the quantity of care rather than the quality of care no longer suffice. Value-based healthcare, although a relatively new concept has risen to meet this demand. This paper presents the factors accelerating the adoption of value-based healthcare in the upcoming decade. The continuous rise in the cost of healthcare and dissatisfaction of patients has led to the adoption of value-based care a solution that placates all stakeholders involved.

Based on certain eligibility criteria's several journals, conference proceedings and libraries were searched, and twenty papers selected for review that fit the study selection criteria. The results of these studies were summarized based on concepts of interest believed to be factors accelerating the adoption of value-based healthcare, occurring across works of literature. The results from the tabular synthesis show that policy (definition, creation, and adoption) among the main concepts of interest is the most critical factor accelerating value-based healthcare in the upcoming decade according to this review.

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Introduction

Objectives

In August 2019, Definitive Healthcare polled 1,090 healthcare leaders across different sections in the American healthcare industry. According to the results from the poll, the number of states in the United States adopting Value-Based healthcare programs has risen in the last 7 years from 3 states to 43 states (Waldron, 2019). Yet, within these states the growth has been stunted in the number of health institutions adopting these programs over the traditional fee-for-service model. The traditional fee-for-service model operates on a payment-based method where the focus was on volume not medical necessity. The value-based healthcare system takes a different approach. According to Porter (2013), value is the patient health outcomes per dollar spent and delivering high and improving value is the fundamental purpose of health care.

Extant literature has presented views that focus on adopting value-based healthcare (fee-for-value) over the traditional fee-for-service model yet this model remains largely unadopted in most health institutions. The objective of this study is to present the factors from works of literature accelerating the adoption of value-based healthcare in the upcoming decade. Analyzing current reports in the United States show that the healthcare system is the most expensive in the world, reaching about 3.5 trillion in 2017 and it is expected to reach 5.7 trillion by 2026 (Center for Medicare and Medicaid Services, 2017). The cost of healthcare is reaching non-viable levels, placing an increasing burden on the lower and middle class. From the data, it can be observed that there is an urgent need to migrate in a direction that is cost-effective and provides high quality patient care. This literature review provides a recap of the existing literature whilst synthesizing factors accelerating value-based healthcare from journals, conference proceedings and digital libraries among others.

Rationale

The adoption of value-based healthcare is important for a plethora of reasons. To begin with, quality care under value-based programs is achieved through a merit-based outcome evaluation for providers. Promoting better outcomes is the responsibility of the providers who enroll in value-based purchasing programs. This is crucial because it ensures they are held accountable for the effects of their services on patients. With this drive for accountability, patients will not be engaged in treatment plan indefinitely without keeping the outcome in view. Value-based care also creates a more integrated approach to managing people's wellness, instead of treating illness and disease as it occurs. When patients are being regularly followed by medical teams who know their history and situation, medical teams are better able to help counsel patients on how to make positive changes in their lives to increase or better deal with existing health issues or illnesses. This collaborative approach will lead to less expenditure on medical errors, incorrect diagnosis, ineffective or deleterious treatments, and reduction in malpractice lawsuits.

The subject area of this study encompasses a large range of topics. As stated above previous literatures, has focused on weighing the benefits of value-based healthcare over traditional fee-for-service model. This research paper aims to focus on why this migration is paramount and will consider the factors accelerating value-based healthcare. These factors give reason to why value-

based healthcare needs to be espoused. They lay claim to the urgency and inevitability of value-based healthcare.

Decision making can be described in simple terms as the act of making tough decisions. Clinicians are often faced with this difficult choice. Value based healthcare programs as previously stated comprises of several other areas. One of the areas it drives is preventative healthcare. Patient data is analyzed across the health organization to identify specific data that can lead to health risks; clinicians are provided with this information that can provide support for reduction in fatal episodes of epidemics. Consequently, leading to the management of chronic diseases epidemics of nations. Further, with focus on patient outcomes physicians in value-based care programs are provided with additional resources and time to get acquainted with their patients. This familiarity makes it easy for the physicians to recognize the mental and physical well-being of the patient at all times.

Methods

Information Sources

For the purpose of the literature review, a variety of sources were used, namely journals, literature databases and conference proceedings. The following list of journals were consulted : The Journal of Preventative Medicine, The Journal of Healthcare Management, The Journal of Medical Care Research And Review, American Journal of Nursing, Journal for Healthcare Quality , Bulletin of the World Health Organization, Journal of Hospital Medicine, The American Journal of Managed Care, North Carolina Medical Journal, The New England Journal of Medicine- Catalyst and The Journal of Medical Economics. The aforementioned journals were chosen based on preliminary search results indicating an abundance of materials on the subject area.

The IEEE Xplore Digital library was sought, as it is a research database that grants access to journal articles and conference proceedings. Also, PubMed, a search engine that relies solely on the MEDLINE database was used. Similarly, other research databases that served as sources include Elsevier, Springer and Taylor and Francis. Likewise, the major conference that was used as an information source is the American Medical Informatics Association (AMIA) conference. This is a conference dedicated to the application of biomedical and health informatics in support of patient care, teaching, research, and health care administration.

Eligibility Criteria

This review is limited mainly by two constraints: time and geographical limitations. To begin with, as a relatively new subject area in the Healthcare Informatics community, value-based healthcare gained recognition in 2008 when the Centers for Medicare and Medicaid Services began emphasizing quality healthcare (Pierce, 2018). This eleven-year time period (2008-2019) restricts the possible number of published information available as compared to some other subject areas that have been around for a longer time. Also, based on the authors physical location at the time of this review, this study has been limited to the United States. Furthermore, the United States presents an alarming continuous growth in the cost of healthcare. Even more, studies that require additional costs or payments to be made to gain access will not be considered for the purpose of this review.

Search

To demonstrate this search, the Elsevier database is used. This database was chosen because it contains a majority of the journals used as information sources. This online database is accessed through the Elsevier publishing website (<https://www.elsevier.com/>). Upon landing on the homepage, the search button is visible at the bottom of the page. There are two search buttons on the page one searches the publishing database while the other searches the particular journal selected. For the purpose of this demonstration, a sitewide search is carried out.

The screenshot displays the ScienceDirect website interface for the journal 'Preventive Medicine'. At the top, the ScienceDirect logo is on the left, and navigation links for 'Journals & Books', a search icon, a help icon, 'Create account', and 'Sign in' are on the right. The main header features the journal title 'Preventive Medicine' and the text 'Supports open access'. Below this, the page is divided into several sections: a journal cover with CiteScore (3.72) and ISI (3.449); an 'Explore journal content' section with links for 'Latest issue', 'Articles in press', and 'Article collections'; a 'Latest issues' section listing 'Volume 129' (In progress, December 2019), 'Volume 127' (October 2019), 'Volume 126', and 'Volume 125' (pp. 1-80, August 2019); and a 'Find out more' section with links for 'Submit your article', 'Guide for authors', and 'About the journal'. At the bottom, there is a search bar labeled 'Search in this journal' and a search icon, with a note: 'Looking for an author or a specific volume/issue? Use advanced search'.

Figure 1: showing the different locations of the search buttons

The key term used in this search is “value-based healthcare” or “value-based care”. The term “value-based purchasing” is often used loosely in place of value-based healthcare, however the search results of these terms differ. The search results for “value-based purchasing” did not match intended results. Noteworthy is the difference in the results of “value-based healthcare” and “value-based care”. The latter comprises of a substantial difference in number of the resources available.

Find articles with these terms
value based healthcare



Year: 2008-2019 X

Advanced search

Research article

Now Is the Time for Transparency in Value-Based Healthcare Decision Modeling

Value in Health, Volume 22, Issue 5, May 2019, Pages 564-569

Joel W. Hay

Correspondence

Moving forward with Value Based Healthcare: The need for a scientific approach

European Journal of Surgical Oncology, Volume 45, Issue 7, July 2019, Page 1299

Mirjam M. Garvelink, Paul B. van der Nat

Find articles with these terms

value based purchasing



Journal or book title: Preventive Medicine X

Advanced search

sorted by relevance | date

Research article

Sensitivity of hypothetical purchase task indices when studying substance use: A systematic literature review

Preventive Medicine, In press, corrected proof, Available online 7 August 2019, Article 105789

Ivori Zvorsky, Tyler D. Nighbor, Allison N. Kurti, Michael DeSarno, ... Stephen T. Higgins

Research article

The educational gap in tar and nicotine content in purchases of cigarettes: An observational study using large-scale representative survey data from Japan

Preventive Medicine, Volume 129, December 2019, Article 105828

Ying Yao, Ryota Nakamura, Nazmi Sari

Figure 2: showing the results of the different terms when used as search criteria's

Also, the difference between “value based” and hyphenated “value-based” should be noted, there tends to be more desirable results using the former. However, this difference is not generic among all sources. The search results are displayed in order of relevance. The process of query construction was based on the author’s previous experience on the subject. The generic search query was as follows:

value-based OR value based care AND (healthcare OR care AND concept of interest) OR value-based purchasing OR pay-for-performance OR fee-for-service

Find articles with these terms

value based healthcare



In this journal or book title

Year(s)

2008-2019

Author(s)

Author affiliation

Title, abstract or author-specified keywords

✓ Show all fields

Cancel

Search Q

Figure 4: showing the filters applied to the search field

Three relevant sources found from this search are:

- Moving forward with Value Based Healthcare: The need for a scientific approach (Mirjam & Paul, 2019).
- Now Is the Time for Transparency in Value-Based Healthcare Decision Modeling (Joel, 2019).
- Value-based mental healthcare: The quality aspect (Gaebel, 2016).

Lastly, the reference lists of relevant articles were searched to explore further sources.

Study Selection Criteria

This study was concerned with both the private insurer's implementations of these programs, as well as those proposed and currently implemented by public health insurance companies. This filters study selection to those studies that encompass arguments both for and against value-based healthcare. By being able to research both types of articles it was possible to filter down which best met the objective of this paper. In addition, only studies that defined value-based healthcare rigidly and concisely were reviewed. This was to ensure that the articles used in the study focused on value-based healthcare as it is formally defined. In addition to the previous criteria, only articles written within the last eleven years were reviewed. This is to ensure that all of the information used for this review is up to date and accurate.

Study selection was conducted by screening titles and abstracts based on eligibility criteria, for qualified papers the full texts were then assessed. The articles included are:

- Written in English
- Working papers and peer-reviewed papers
- Easily accessible on the web
- Clearly defined and focused on value-based healthcare
- Explicitly discussed the adoption of value-based healthcare.

Results

Twenty papers were reviewed in total for this study. The process was split in two, ten papers were reviewed separately in table one and another ten in table two. The tables summarize the works of literature based on setting, outcome, location and focus. These papers were chosen because they contain concepts of interests that influence the success of value-based healthcare. These concept of interest Policies (creation, adoption and requirements), Healthcare Reform, Information Technology, Chronic Disease Management, Healthcare Disparities, Hospital Readmission Rate, Reduced Healthcare Cost, Delivery Care Model, and Evidence Based Medicine (This is defined briefly as the thorough, explicit, judicious and reasonable use of modern, best evidence in making decisions about the care of individual patients (Masic, Miokovic, & Muhamedagic, 2008)).

First, discussing table one, some papers containing more than one concept of interests (Milani & Lavie (2015) this paper is concerned with chronic disease management, as well as delivery care model in value-based healthcare) and others having the same concept of interests, such as Putera (2017), Milani & Lavie (2015) and Choudhry et al. (2014) that deal with chronic disease management in value-based healthcare. Similarly, Calikoglu, Murray & Feeney (2012) and Keonig et al. (2014) deal with policy creation, adoption and requirements.

Although, some differences also exist between the articles, while all articles were written with regards to healthcare in the United States, some articles focus solely on specific states healthcare industry. Such as Calikoglu, Murray & Feeney (2012) that focuses on the state of Maryland, and Keonig et al. (2014) that is solely focused on the state of Oregon. Also, Meinert et al. (2018) and D'amore et al. (2018) discuss the adoption of information technology in value-based healthcare, however coming from different approaches.

Similarly, from table two above it can be inferred that some papers also have the same concepts of interest, such as Peile, E. (2013), Bauer, G., (2018), Farahnik, B., Nakamura, M., Bhutani, T., & Koo, J. (2016), Millwee, B., Goldfield, N., & Turnipseed, J. (2017), Elf, M., Flink, M., Nilsson, M., Tistad, M., Koch, L. V., & Ytterberg, C. (2017), Rajkumar, R., & Thomas, J. (2019), which all focus on policy definition. Narrowing it further, Rajkumar, R., & Thomas, J. (2019) and Millwee, B., Goldfield, N., & Turnipseed, J. (2017) focus on policies that were adopted in certain states (North Carolina and Texas respectively), the success these policies have had and how it can be expanded and adopted statewide to serve as national model. They both present statistics to show value-based outcomes. Also, Zadeh, R., Sadatsafavi, H., & Xue, R. (2015) and Peile, E. (2013)

Citation	Setting	Outcome	Location	Focus
Koenig, L., Dall, T.M., Ruiz, D., Saavoss, J., & Tongue, J. (2014)	Total Knee Arthroplasty Surgery	Affordability of the procedure after cost-sharing resulted in earlier treatment, increasing QALYs and savings for patients.	Oregon, USA	Cost-Sharing Policies in Medical Procedures
Putera, I. (2017)	Clinical and Nonclinical	Successful VBP initiatives depend on an integrated healthcare delivery system to track continuity of care.	USA	Healthcare Reform (Incentivized Provider Reimbursement Schemes), Chronic Disease management
Meinert, E., Alturkistani, A., Brindley, D., Knight, P., Wells, G., & Pennington, N. D. (2018)	Administrative	Patient data must be guarded against breach and misuse, while remaining accessible and compliant with HIPAA standards.	USA	Data Privacy/Information Technology
Choudhry, N.K., Bykov, K., Shrank, W.H., Toscano, M., Rawlins, W.S., Reisman, L., ... Franklin, J.M. (2014)	Randomized Clinical Trial/Observational Studies	Utilizing cost-sharing programs to reduce copayments, patient medication adherence and incidence of a first vascular event in non-white patients improved.	USA	Health Disparities (Cost-Sharing/Socioeconomic)
Ryan, A. M., Krinsky, S., Adler-Milstein, J., Damberg, C.L., Maurer, K.A., & Hollingsworth, J.M. (2017)	Clinical	Value Based Program enrollment on a voluntary basis is associated with a lower rate of patient readmission compared to non-participating hospitals. Participation saved insurance company and enhanced hospital infrastructure and strengthened their incentives to reduce readmission.	USA	Hospital Readmission Rate(effects of enrolling in VBP programs on rate of readmission)
Calikoglu, S., Murray, R., & Feeney, D. (2012)	Clinical	Maryland government VBP initiatives saw a reduction in hospital-acquired conditions in patients.	Maryland, USA	Policy Adoption (Incentivized Provider Reimbursement Schemes)
Milani, R.V., & Lavie, C.J. (2015)	Chronic & Post-acute Care	Refining healthcare delivery to coordinate long-term, patient-centered care among clinicians and caregivers in a team results in improved outcomes. This care model is facilitated by various technologies and data analytics.	USA	Delivery care model, Chronic Disease Management and Information Technology
Song, Z., Safran, D.G., Landon, B.E., Landrum, M.B., He, Y., Mechanic, R.E., ... Chernew, M.E. (2012)	Administrative	Blue Cross Blue Shield of Massachusetts' Alternative Quality Contract utilized a global spending budget, and reduced spending among Accountable Care Organizations. Patient quality of care saw a marginal increase.	Massachusetts, USA	Penalty-Based Reimbursement Schemes, Cost Reduction in Healthcare

D'amore, J., Li, C., Mccrary, L., Niloff, J., Sittig, D., Mccoy, A., & Wright, A.	Ambulatory care facilities	Quality measure calculation is possible using interoperability standards to collect data from a variety of EHRs. Interoperability standards to support quality measurement provides a long-term incentive to jointly improve interoperability, clinical documentation, and care quality. This is pivotal as payers transition to value-based contracting	USA	Clinical Data Interoperability
Tsevat, J., & Moriates, C. (2018)	Administrative	Cost-Effective Analysis in provider organizations has the potential to lower costs of care and drive value as a complement to VBP programs, if it can accommodate quality and availability of care.	USA	Policy Definition

Table 1: A summary table showing relevant research on factors influencing the adoption of Value-Based Healthcare programs.

Citation	Setting	Outcome	Location	Focus
Bauer, G. (2018)^f	Clinical and Nonclinical	Patients become more engaged with their care through the use of technology to facilitate rich and frequent communication with their clinician.	USA	Information Technology
Chernew, M. E., Rosen, A. B., & Fendrick, A. M. (2007)	Administrative	The authors indicate copayment reduction and data-driven, condition-specific risk adjustment as effective components of Value-Based care programs, while citing implementation costs, lack of research, and privacy concerns among the barriers to success.	USA	Cost-Sharing/Risk Adjustment, Delivery care model
Deen, W. K. V., Spiro, A., Ozbay, A. B., Skup, M., Centeno, A., Duran, N. E., ... Hommes, D. W. (2017)	Clinical	Successfully implemented VBHC for IBD, resulting in fewer emergency department visits, hospitalizations, and long-term corticosteroid	USA	Chronic Disease Management (Inflammatory Bowel Disease (IBD))
Elf, M., Flink, M., Nilsson, M., Tistad, M., Koch, L. V., & Ytterberg, C. (2017)	Clinical and Nonclinical	The availability of cycle of life data shows a history of the various facilities and care specialists involved in the patient's experience. Long-term care treatment requires coordination across these people and places to truly evaluate quality of treatment.	California, USA	Chronic Disease Management, Policy Definition/Outcome Measure Definition
Farahnik, B., Nakamura, M., Bhutani, T., & Koo, J. (2016)	Administrative	An effective Value-Based Care model must take into account both the costs of medical products and procedures involved in treating a condition, and also the indirect costs in its physical and mental toll on the patient.	USA	Policy Definition
Haley, Donald & Zhao, Mei & Spaulding, Aaron. (2016)	Clinical	Under CMS's programs that evaluate a facility's Total Performance Score, providers can improve their standing by taking steps to coordinate inpatient and outpatient care to reduce their rates of patient readmission.	USA	Hospital Readmission Rate
Millwee, B., Goldfield, N., & Turnipseed, J. (2017)	Clinical/Surgical	Initiatives in Texas to reduce potentially preventable medical events credit significant financial motivation to providers, properly maintained risk-adjustment, and a policy framework that considers its function its intended care setting.	Texas, USA	Policy Definition
Peile, E. (2013)	Administrative	Through continued education training, clinicians can learn to influence the quality of care they administer by aligning their decision making with their patient's values.	USA	Policy Definition, Evidence Based Medicine

Rajkumar, R., & Thomas, J. (2019)	Administrative	Blue Cross North Carolina has considered the failures and successes in other states' approaches to Value-Based healthcare. In particular, incentives and penalties for providers, continuous outcome measure improvement, and team-based care are employed in this model.	North Carolina, USA	Policy Definition
Zadeh, R., Sadatsafavi, H., & Xue, R. (2015)	Administrative	Evidence-Based Medicine applied to Value-Based frameworks support better patient outcomes.	USA	Evidence-Based Medicine (Clinical Decision Making)

Table 2: A summary table showing relevant research on factors influencing the adoption of Value-Based Healthcare program

Bauer, G., (2018), Farahnik, B., Nakamura, M., Bhutani, T., & Koo, J. (2016), Millwee, B., Goldfield, N., & Turnipseed, J. (2017), Elf, M., Flink, M., Nilsson, M., Tistad, M., Koch, L. V., & Ytterberg, C. (2017), Rajkumar, R., & Thomas, J. (2019), which all focus on policy definition. Narrowing it further, Rajkumar, R., & Thomas, J. (2019) and Millwee, B., Goldfield, N., & Turnipseed, J. (2017) focus on policies that were adopted in certain states (North Carolina and Texas respectively), the success these policies have had and how it can be expanded and adopted statewide to serve as national model. They both present statistics to show value-based outcomes. Also, Zadeh, R., Sadatsafavi, H., & Xue, R. (2015) and Peile, E. (2013) discuss applying Evidence Based Medicine into Value-based healthcare, with both presenting beneficial outcomes to this kind of framework if implemented that could improve patient outcomes.

Though in table two, some articles contain the same concept of interest they differ in the way of approach. For instance, Deen, W. K. V. et al. and Elf, M. et al., both articles consider chronic disease management (in complex conditions) both approach it from different angles, Elf, M. et al. discusses adopting value-based care in complex conditions in order to define the beginning and end of care cycles for patients uniquely. Whilst, Deen, W. K. V. et al. was focused on highly coordinated care, task differentiation of providers, and continuous home monitoring for Irritable Bowel Disease (IBD) patients.

Further, in researching these documents some questions that stood out included, are these concepts of interests scalable and replicable in every healthcare setting? This is due to the fact that a significant portion of research had taken place in safety-net hospitals, acute-care hospitals or similar settings. Secondly, which patients do we focus on? How is a choice to be made in the patient population and determine the chronic disease that requires more attention? This is especially important because chronic disease management is one of the concepts of interest.

Limitations

This review has several strengths. An extensive search was performed across several journals, conference proceedings, and libraries so that important studies would not be missed. Eligibility criteria were objectively defined and applied in the screening of each study by the authors. However, the results of this review need to be interpreted in the context of some limitations. This review focused on works of literature in the United States. Due to the undeniable high cost of healthcare in the United States. Also, this study does not focus on comparing healthcare organizations that have adopted value-based healthcare as opposed to those that have not. Understanding the differences between value-based healthcare and traditional-fee-for service model is relevant, but have been previously reviewed, so this paper focuses on the factors accelerating the adoption of value-based healthcare.

Conclusions

As stated previously, the rising cost of healthcare in the United States has provoked the demand for better healthcare initiatives. Value-based healthcare came about as a better alternative to the traditional fee-for-service model. The objective of this review is to present factors accelerating the adoption of value-based healthcare in the upcoming decade. Applying the methods described across several information sources, ten concepts of interests believed to be driving factors in the adoption of value-based healthcare in the upcoming decade were revealed. These concepts of interest are policies (creation, adoption, and requirements), healthcare reform, information technology, chronic disease management, data interoperability, healthcare disparities, hospital readmission rate, reduced healthcare cost, evidence-based medicine, and delivery care model. Twenty papers fitting study selection criteria were chosen.

Upon evaluating these papers, findings indicate nine papers reviewed of the twenty papers focus on policy (definition, creation, and adoption), five focus on chronic disease management, three focus on information technology, two focus on delivery care models, two focus on hospital readmission rate, two focus on evidence-based medicine, two focus on cost reduction, one on data interoperability, one on healthcare disparities. Although some papers focus on more than one concept of interest. Following the findings from this review, policy (definition, creation, and adoption), is the most critical factor accelerating value-based healthcare in the upcoming decade. These findings meet the objective of this paper, presenting factors possibly driving the adoption of value-based healthcare based on the methods applied.

Finally, future research should strive to review these studies focusing on policies (creation, adoption, and requirements) to explore their role in driving value-based healthcare. An examination of the effectiveness of these policies in healthcare systems that have adopted them should be looked into.

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