

# Systematic Review Suggests Government Policy as Key Factor of Rising Health Care Expenditures

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**Abstract:** In 2020, there was a noted increase of national health expenditures, specifically a 9.7% increase, which comprises about 19.7% of the Gross Domestic Product in the United States. This trend is expected to continue and it is forecasted that health care costs and expenses may escalate into the trillions in the near future. To identify the most influential factors associated with increased health care expenditures, a systematic review was conducted. The intent of this important research endeavor is to increase the knowledge of current and future health care leaders, for both educational and practical purposes and specifically towards the understanding and development of health care policies intended for controlling the rise in health care expenses. After applying appropriate research guidelines to the initial search for journal articles on this topic, a total of 14 articles were chosen as accessed from three publicly accessible databases. After collecting and analyzing the articles, the following key factors were found to be among the most influential when considering health care expenditures in the United States: (1) technology, (2) government policies, (3) the increased prevalence of chronic diseases, (4) inflation, and (5) pharmaceutical cost and utilization. This systematic review indicates that government policies may be the primary reason for the increase in United States health care expenses, with pervasive chronic diseases as the second most prevalent factor. Based on this review, pharmaceutical cost and utilization were observed to be the least impactful on the rise of health expenditures; whereas, inflation and the growth of new technological advances remained relatively consistent in their impact on national health expenditures. Although limitations of this study exist, this systematic literature review provides an opening dialogue for the need for further research aimed at reducing and controlling health care costs, especially research that provides an in-depth review of how national health expenditures impact equal access to health care services for all individuals.

**Keywords**— Health care expenditures, health care prices, inflation in the United States, and medical costs

## INTRODUCTION

Over the last two decades, health care expenditures in the United States (U.S) have been, and continue to be, on the rise. In 2020, there was a noted increase of national health expenditures, specifically a 9.7% increase, which comprises about 19.7% of the Gross Domestic Product in the United States [1]. Access to health care services often are perceived as a luxury rather than an easily accessible and affordable resource [2]. Increased knowledge is needed in a number of areas including how to expand the lifespan of people, which ultimately leads to the access and delivery of more health care services per individual [3]. For example, more services, procedures, and prescribed pharmaceuticals are provided per patient throughout U.S health care organizations (including dental care organizations) [4]. In addition, certain diagnosed diseases and conditions, such as diabetes, have been proven to be more expensive for individuals when compared to the costs of health care services of those without these chronic diseases or medical conditions [5]. Despite efforts to reduce the cost of health care services, health care expenditures continue to grow in the U.S. [4]. This systematic review aims to investigate the most influential key factors linked to increased health care expenditures. In 14 articles utilized for this systematic review, five common themes explained the

possible rise in national health care expenditures. These themes included technology, government policies, increased prevalence of chronic diseases, inflation, and pharmaceutical costs and utilization.

## METHODS

To determine the most influential key factors associated with national health care expenditures in the U.S., Google Scholar was initially utilized to determine the appropriate availability of literature as related to the research topic. Once it was determined that suitable information on the research topic was available, three databases (EBSCOhost, PubMed (including MEDLINE), and Web of Science) were accessed to locate the literature used in this systematic review study. In varying patterns and configurations, the following keywords were used to search for topic-relevant literature in each database: health care expenditures, health care prices, inflation in the U.S., and medical costs. Guidance for narrowing down the literature that would be allowed into this systematic review was obtained from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) [6]. Exclusion criteria were identified and applied as outlined below.

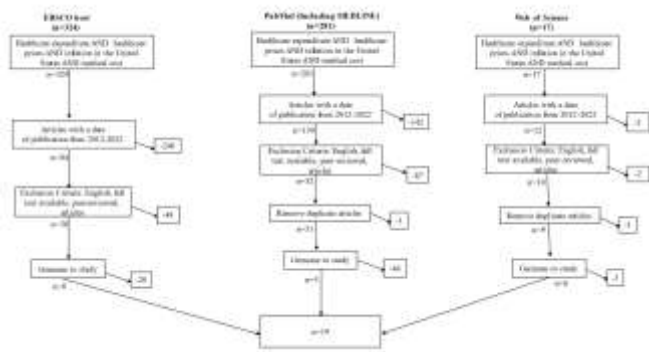
**EXCLUSION CRITERIA**

A single-researcher review was conducted after gathering and arranging the 622 articles initially identified from EBSCOhost, PubMed (including MEDLINE), and Web of Science. Duplicate articles (n= -2) were found and eliminated. Then, filters were applied to exclude articles that appeared outside the 2012 to 2022 publication period (n = -387). Those articles that:

- (a) were not in English (n= -1),
- (b) were not peer-reviewed (n= -69),
- (c) did not have a full text (n= -60), and
- (d) were not research-related articles (n = -7)

were also excluded from the literature review process. As a result of the exclusion criteria, 19 articles remained for the literature review, and they were used to further the research process. (See Figure 1).

**Figure 1: Literature Review Process**



Once the pre-determined exclusion criteria were applied, four researchers reviewed each of the 19 articles previously selected to assure that they specifically addressed the research topic regarding key influential factors associated with national health care expenditures. The raters’ review indicated five of the 19 articles did not specifically, or adequately, address the research topic of this study. Therefore, five additional articles from the original literature search were also removed leaving 14 articles remaining for this systematic literature review. Through a careful review of these 14 remaining articles, five common themes emerged regarding key factors that influence U.S. health care expenditures.

**RESULTS**

As previously discussed, researchers analyzed the 14 articles found to be germane to this study, and relevant themes emerged associated with the factors that influence health care expenditures in the U.S. The five most frequent themes associate with the research topic were identified as:

- (a) technology,
- (b) government policies,
- (c) increased prevalence of chronic diseases,
- (d) inflation, and
- (e) pharmaceutical cost and utilization.

Within the articles chosen for this literature review, the frequency of the themes and occurrences can be observed in Table 1.

**Table 1: Frequency of Occurrences in Literature**

Factors	Occurrences	Instances of Attributes	Percentage
Technology	3, 7, 8, 9, 10, 11	n=6	43%
Government policies	4, 7, 8, 9, 10, 11, 12, 13, 14,16	n=10	71%
Increased prevalence of chronic diseases	4, 5, 7, 8, 9, 11, 13, 15	n=8	57%
Inflation	4, 5, 8, 10, 11, 13, 17	n=7	50%
Pharmaceutical cost and utilization	5, 12, 17, 18	n=4	29%

The research findings demonstrated, in 43% of articles, detailed evidence of impact of technology [3, 7, 8, 9, 10, 11]. About 71% of the analyzed articles addressed Government policies [4, 7, 8, 9, 10, 11, 12, 13, 14, 16]. Moreover, 57% of the articles demonstrated an increased prevalence of chronic diseases [4, 5, 7, 8, 9, 11, 13, 15]. Furthermore, 50% of the articles reviewed listed inflation [4, 5, 8, 10, 11, 13, 17]. Lastly, 29% of the articles provided an understanding of the pharmaceutical cost and utilization impact [5, 12, 17, 18].

**DISCUSSION**

The purpose of this systematic literature review was to identify the key factors that influence U.S. health care expenditures. As discussed above, five main themes emerged including, technology, government policies, increased prevalence of chronic diseases, inflation, and pharmaceuticals cost and utilization. Each of these key influential factors present complex issues that may impact U.S. health care expenditures. A brief discussion on each key factor follows.

*Technology*

Theme one indicates that technology is recognized as one of the key factors associated with health care expenditures in the U.S. As stated in Table 1, technology is discussed in 43% of the articles, [3, 7, 8, 9, 10, 11]. Due to the increasing advancement in technology development, health care organizations are adopting new and more expensive technology in order to provide more accurate and better-quality care. The new technology development and increased knowledge of diseases is allowing the health care industry to identify the signs and symptoms related to chronic diseases

such as diabetes. This increase in the diagnosis of chronic disease may expand the treatment provided for these patients, thus increasing the overall cost of health care treatment patients are receiving.

Three categories of health care technology use can be inferred from the effectiveness of said health care technologies (technology here can also indicate drug therapy utilization):

- a) Low cost, yet effective treatments – or treatments that are not necessarily low cost, but are highly effective, yet limited in their population use (the limited population use increases its value in utility and high cost effectiveness and excludes it from the other categories);
- b) technologies that are effective for a small population and provide small benefits to cost-effectiveness; and
- c) technologies that show negligible or no evidence of benefit to the patients, regardless of the cost [7].

Increased health care costs are likely to be derived from the third category of health care technology use in the U.S. because of patient utilization or provider procurement of technologies, and the false association of newer medical technology with better medical technology. It may be the case that an increased level of income precipitates health care expenses in the U.S. due to advancements in certain fields; however, the data is inconclusive as to how much it can be assumed that health care services can be treated as a normal good, an item or service whose utilization can be expected to follow trends with income level [3, 8, 9].

The increased use of newly developed medical technology on patient care in the U.S. does not show a correlation with increased health care outcomes, which likely indicates that less cost-efficient strategies are being deployed for conditions with the trade-offs of being among the first (or only) to prioritize adoption [10]. This is perhaps an anticipation of yet realized future benefits of these technologies, leading to overutilization of services and a ballooning of health care expenditures. The ability of a health care facility to finance and employ technologies and providers who are qualified to work with those technologies may be the fundamental strategy to justify price mark-ups for medical care. This could ultimately mean that patients are paying for prestige, not necessarily the desired health care outcome(s) [10, 11].

#### *Government Policies*

Theme two, as seen in Table 1, shows that 71% of the articles reviewed for this literature review [4, 5, 6, 9, 10, 11, 12, 13, 14, 16], identify government policies as a key factor that influences the cost of health care in the U.S. In fact, this literature review revealed the theme of government

policies as the most influential factor associated with health care expenditures in the U.S. Higher cost of patient care services precedes changing rules and regulations within the health care sector. There is seemingly much consensus in tying health care policies to health care expenditures. Even the decision to include or exclude certain services from Medicare and Medicaid funding changes the level of health care expenditures by insurance companies and private-pay patients [4, 5, 8, 10, 11, 12, 13, 16]. U.S. government health care policy constantly evolves and changes based on political factors such as presidential administrations and congressional dynamics. This likely increases the uncertainty and challenge posed to policymakers in the delivery of health care services in the U.S. [8, 10, 11, 16]. The patchwork approach of legislation to change the health care policy landscape lends to this uncertainty, especially when compliance with laws in other areas, such as malpractice law and ethical requirements per profession are fragmented by federal and state statutes and iterative over the course of decades [7, 8, 10]. Health care policy uncertainty, actual policies and the timing of implementation of rules and policies, has a generally negative effect on health care expenditures [8]. The primary reason is that the demand and supply participants in the health care industry have a great influence over the prices charged and expenditures incurred as observed by Horenstein and Santos (2016), the mark-up of prices in the health care industry was nearly 200% while other industries only increased by 55% in the period ranging from years 1970-2007 [8, 10]. It is important to note that these price mark-ups can be largely explained by increasing administrative costs that are tied to other aspects of health care delivery [8, 9].

Laws and policies are important drivers of health care expenditures because insurance companies are tied to medical necessity determinations by physicians and state laws; the insurance companies, largely, cannot determine what they pay for, just how much they are going to set their reimbursement rates [7]. An extreme version of price setting is done every two years in Japan to control health care expenditures, however geographic adjustment is not done. The reimbursement to providers is done at a flat rate wherever they may be in the country, regardless of the cost of living adjustments in other segments of the economy [14]. In the U.S., the fact that Medicare has restrictions on competition of payment of services also leads to an increase of health care expenditures. Medicare cannot base their decision to contract with providers based on efficiency metrics as this leads to the observation that between 1965 and 1970, hospital spending by Medicare was six-fold compared to private insurers [7, 10]. Certainly, a review of how Medicare pays for efficient services and relevant laws pertaining to health care delivery is necessary, since compared to what is discussed in the previous section, Medicare pays generously for procedures and services (technology) that are not only inefficient but unproven in effectiveness as well as paying for inefficient services given by providers [7].

*Increased Prevalence of Chronic Diseases*

Theme three demonstrates that the increased prevalence of chronic disease diagnosis plays a factor in the rise of health care costs in the U.S. Table 1 shows an increased prevalence of disease was discussed in 57% of the articles reviewed [4, 5, 7, 8, 9, 11, 13, 15]. Increased health care knowledge and research have resulted in increased diagnoses of chronic diseases. For instance, individuals diagnosed with diabetes have 2.3 times higher health care expenditures than healthy individuals and are 3.1% greater than healthy individuals to be out of work and reliant on disability payments [5]. Price levels in health care correlate with average country income levels. The U.S. is a country with higher income levels when compared to other underdeveloped countries. This causes U.S. health care expenditures to be higher [9]. From this, it can be deduced that some chronic diseases prevent people from working to support themselves financially, making them unable to afford the U.S.'s higher health care costs. Results in article 1 indicate that diabetic health care expenditures, for example, are expected to increase annually. As of right now, 73% of diabetic costs come directly from health care expenditures while the remaining 27% represent lost income from work-related absenteeism [5]. Diabetes is just one of the many chronic illnesses' individuals face which is likely to increase their health care expenses [13]. Medical expenditures are dependent on individual conditions as well as age groups [7]. In adolescents, medical expenditures are increasing annually by 2.5% [8]. On the opposite end of the spectrum, since geriatric individuals are living longer, an increased number of diseases and conditions are becoming apparent. Geriatric patients are paying more for general health care as well as dental care. Over the last two decades, dental care costs for geriatric patients have doubled. This is a result of geriatric patients keeping and maintaining their permanent dentition for longer with improvements in dental innovations [4]. Additionally, overtreatment, one of the most common reasons for wasteful spending, occurs in many patients with chronic diseases [15]. Some studies indicate that disease prevalence and incidence are not highly associated with increased health care expenses [11]. Thus, more research is needed to be done on this topic.

*Inflation*

Theme four represents 50% of the articles [4, 5, 8, 10, 11, 13, 16], reviewed for this study. Inflation, the general increase in price of goods and services, has proven to have a substantial impact on health care expenditures. The increase of inflation expenditures is implied to continue an annual increase every year as the costs of medical (including dental care) continue to increase annually, despite the efforts to decrease them [4, 5]. Pricing indexes are recommended for use based on specific needs in determining and understanding health care expenditures and increased costs due to inflation [11]. The adoption of value-based care has been predicted to

reduce wasteful spending in health care [13]. Reducing wasteful spending may reduce future costs accumulated in health care, resulting in a decrease in health care inflation [13]. While not all spending is wasteful, spending on technologies that improve health care delivery may still cause an inflation increase. For example, use of multiparametric Magnetic Resonance Imaging (MRI) systems to monitor and maintain conditions such as prostate cancer, increases health care spending on a yearly basis [10]. The increase in inflation and health care expenditures have shown to have consequences for low-income families. For instance, 17.7% of families in the U.S. have at least one member in the family that forgoes treatment or has unmet needs [16]. This is known as the stress threshold that a low-income family experiences due to health care costs. On the opposing side of this topic, while medical expenditures in adolescents is proven to increase annually by 2.5% per person, no significant inflation-adjusted medical expenditures were identified [8].

*Pharmaceutical Cost and Utilization*

Theme five demonstrates 29% of the articles [5, 12, 17, 18] reviewed for this study. Pricing of pharmaceutical medicine has been and continues to be rising as new diseases are discovered and more medications are created. The increase in the cost of medication for diabetes control [12], for example, upsurge to 45% within the span of five years (2012-2017) [5] due to inflation, whereas the inflation-adjusted cost was increased up to 110% (2012-2017) [5]. Moreover, this increase is also because patents allow a company to maximize profits for a period to regain their amount of money they spent on the process of patent [12]. Moreover, pharmaceutical companies are often criticized for abusing their influence over legislators to prevent governmental regulation of drug prices [17]. The soaring cost of research and development in the drug industry has also resulted in a productivity crisis that has significantly raised the cost of health care spending [12]. Using medication more frequently results in fewer hospitalizations [18]. Conclusively, these are the factors affecting an increase in health care expenditures due to pharmaceutical cost and utilization.

**LIMITATIONS**

The present systematic review on the key influential factor associate with health care expenditures in the U.S. has some limitations. It is important to consider these limitations while interpreting the results of this study. The major limitations of the study included the time constraints associated with conducting the study during an accelerated, graduate course. Additionally, the availability of articles and the selection criteria of the articles used for the literature review provide only a picture of the data available on this topic. Single-reviewer analysis of the initial articles gathered, as well as unintentional author bias of the articles selected could also be considered limitations. Although efforts were made to include all research articles related to the aim of the

study some may not have been identified and/or selected due to the nature of the selection process.

Despite the limitations of this study, the results are helpful in identifying key factors associated with health care expenditures in the U.S. This literature review should create an open dialog for future research and discussion, especially to future health care managers, administrators and other applicable health care professionals.

#### FUTURE RESEARCH

In future studies, the results or findings from this systematic review can be utilized to develop strategies for controlling the rising costs of health care. Further studies are needed to develop strategies and policies regarding each factor that contributes to health care inflation. Reducing costs of health care is paramount and understanding factors that lead to rising health care expenditures is essential in addressing this in a productive and efficient manner [8,12,15].

#### CONCLUSION

The rising cost of health care expenditures continues to be a pervasive complication in the U.S. [1]. The purpose of this study was to determine the key factors associated with health expenditures in the U.S. This systematic review produced five themes related to U.S. health care expenditures including: technology, government policies, increased prevalence of chronic diseases, inflation, and pharmaceuticals cost and utilization. After careful review of all of the relevant articles allowed as part of the literature review, the key factor identified to most likely be associated with health care expenditures in the U.S. was government policies. As described in the chosen articles, health care pricing and expenditures have been increasing for decades and will likely continue to increase moving forward [1,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18]. The need for additional research on this topic is crucial to assure future health care managers/administrators have an in depth understanding of the issues pertaining to health expenditures, especially in academic settings.

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