

The Inequity of Cancer Treatment Options for Patients of Low Socioeconomic Backgrounds

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Abstract: Reports indicate that the number of cancer patients in the United States is rising, with the amount of patients doubling by 2050. As patients in hospital beds increase, the cost to treat patients increases. Treating the most prevalent cancer is associated with the highest costs of treatment. This disproportionality affects patients of low-socioeconomic backgrounds. Paying for cancer treatments result in dire situations for thousands of individuals throughout the nation. People of low socioeconomic backgrounds also seem to be highly correlated with certain demographics. This limits the availability of certain treatments to specific demographics, representing the inequality present in healthcare. The impact of such inequality is extremely detrimental to people of these demographics, resulting in immense financial strain that changes entire lives. This paper goes into depth regarding the effects that rise from the high costs of cancer treatment and explores possible solutions that may aid those suffering from the financial strain of treating such illnesses.

Keywords: health care, oncology, cancer treatment, treatment options, cancer expenses, treatment costs.

I. INTRODUCTION

The United States remains the only industrialized country that lacks universal healthcare for its populace. This policy has shown its ineffectiveness through the damaging effects left from paying for the high costs of cancer treatment. Research has shown that cancer treatment remains out of reach for those coming from a low socio-economic background. The financial strain that arises from receiving cancer treatment has been linked to a higher mortality rate in patients. The high costs of cancer treatment within the United States also seem to affect people of certain ages and races more often, resulting in the rise of inequality as treatment costs increase. As the costs of treatment rise, it becomes ever more critical to address the lack of affordability of cancer treatment and its detrimental effects on those of certain demographics. Analyzing the healthcare systems utilized in other nations and the benefits it provides are a start to improving the current state of the United States. Introducing policy changes and modifying the current system are possible solutions that can diminish the harmful effects that low income individuals face.

II. HISTORY OF CANCER RESEARCH

Cancer comes in a multitude of forms and is notorious for its difficulty to treat and the devastating effects left behind from such treatments. To truly understand the nature of cancer treatment, the history of cancer itself must first be explored.

The Edwin Smith Papyrus depicts the world's first recorded case of cancer near 1600 B.C. The papyrus talks of "bulging ball-like tumors" near the chest area, most likely referring to breast cancer, and depicts the treatment of such tumors with "fire-sticks" to burn them off¹. Evidence from other recordings during the time appear to reveal that ancient Egyptians of the era could differentiate between malignant and benign tumors². Moving forward, the word karkinos was used to describe the findings of benign tumors and karkinoma for malignant tumors by Hippocrates between 460-360 B.C.

A deeper understanding of the function of cancer came during the 17th century, when Wilhelm Fabricius published his experiences with tumors whilst conducting various autopsies to explore the human body¹. Eventually, William Morton began to utilize anesthesia during surgery, allowing for aggressive advances in regards to cancer research and surgery. A key development in the race to understand cancer came during the early 1800s, in which the study of tumors under microscopes brought the conclusion that cancer was made up of a "particular type of cell" and that metastasis occurred due to such cells¹.

III. 1900S - PRESENT

Cancer research made immense advancements beginning from the 20th century through developments such as radiation, chemotherapy, and other forms of treatment. The discovery of X-rays in 1895 revolutionized cancer research as they became more readily utilized to treat various cancers by the 1900s¹. Scientists in France discovered that the use of small doses of radiation over time decreased the chances of mortality and increased the chances of finding a cure³. Eventually, such a finding extended towards cancer treatment and, by the early 20th century, radiation therapy was discovered to be effective in treating cancer. It is important to note that a deeper understanding of the effects of radiation therapy had not been established, leading many to develop leukemia from too frequent radiation exposure. Near the final quarter of the 20th century, developments in radiation technology allowed for radiation to be specifically aimed at target points and become increasingly accurate at attacking cancer cells. Radiation therapy and accompanying techniques have been developed over time and new innovations are continuously being made.

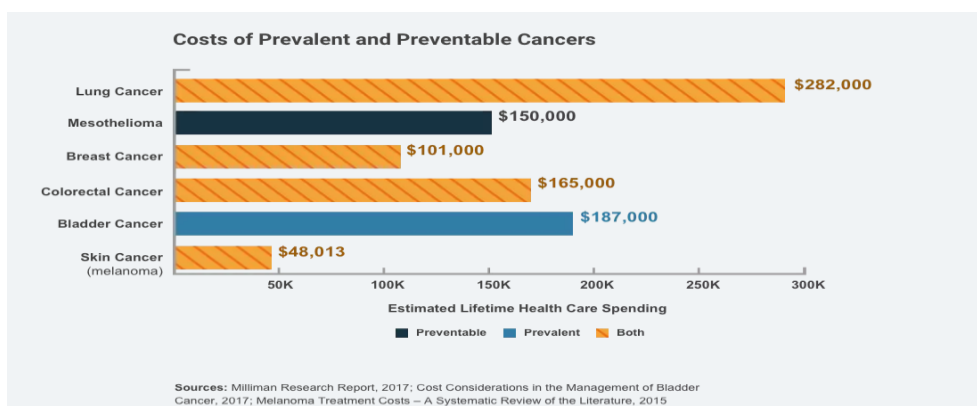
The 20th century also marked a stage of innovation in regards to chemotherapy, or the use of drugs to attack cancer cells. During the Second World War, mustard gas became widely utilized in chemical warfare. The study of mustard gas and the development of related chemicals led scientists to discover a compound known as nitrogen mustard. After studying soldiers exposed to mustard gas, it became known that the chemical decreased the number of lymphocytes within the body. After nitrogen mustard was discovered, scientists began to realize that nitrogen mustard could be utilized to target the lymph nodes that cause lymphoma. Nitrogen mustard targeted lymph nodes and prevented cancer from spreading further. With this information in hand, scientists began to develop a variety of chemotherapy drugs that would target specific cells, stopping the multiplying of cancer cells in its tracks. However, a disadvantage of chemotherapy exists in that it cannot differentiate between healthy cells and cancerous cells. This often leads to the death of healthy sides, causing intense side effects throughout the body¹. Chemotherapy continues to be explored and is currently considered a viable form of cancer treatment.

IV. COSTS OF CANCER

Cancer is widely known for its incurable and hopeless nature. However, cancer also remains notorious for its astonishing price to find treatment. Multiple studies have concluded that the average cost of receiving treatment for cancer comes out to a total of \$150,000. But this is an average estimate, and reports conclude that some cancer treatments can come near \$100,000 in monthly costs⁴. Such a high cost in treatment results from a fractured healthcare system that places an exorbitantly high price on drugs that offer minimal, if not any, improvements on existing treatments¹³.

Evidence of the high cost of treating cancer plagues the United States, as more than half the drugs approved for cancer treatment from the Food & Drug Administration between 2009 and 2013 cost more than \$100,000. A study by the Mesothelioma Center at Asbestos.com indicates that nearly 20% of cancer patients pay more than \$20,000 in out of pocket costs while funding treatment for themselves, with 24% of cancer patients paying between \$5,000 - \$10,000⁴. When viewing the United States as a whole, a total of \$150.8 billion were spent on cancer care in 2018 according to the National Cancer Institute.

The average cost to treat cancer varies by the type of cancer being treated. Studies have revealed that the highest treatment costs occur in cancers that are considered to be the most preventable. This includes breast cancer, lung cancer, mesothelioma, and other varying types of cancer. A correlation between high cancer costs and common cancers have also been noted, as lung cancer and breast cancer are among the most common of cancers found within patients.



Furthermore, cancer patients paid nearly \$4 billion dollars in out of pocket costs for cancer treatment in 2014 as reported by the American Cancer Society, and it has been concluded that the average cancer patient will pay close to \$12,000 per year to afford one cancer treating drug. A disturbing fact also emerges in that the average cost for a newly approved drug is estimated to be \$10,000 with certain drugs costing near \$30,000 a month, yet only a decade prior the average cost to obtain new drugs was a mere \$4,500. The Hutchinson Institute for Cancer Outcomes Research also concluded that cancer patients are more than 2 ½ times likely to declare bankruptcy as a result of the high costs of treatment compared to those who are not cancer patients⁴. The devastating effects of the high costs of cancer treatment, alongside its relationship to those of middle class and low socioeconomic conditions will be further explored in the following sections.

V. EFFECTS OF CANCER ON THE AVERAGE AMERICAN

With the costs of cancer being so high and estimates placing out of pocket costs over \$10,000 for more than 50% of cancer patients, it is important to analyze how the costs of cancer can affect an everyday American, unprepared to financially face a life-threatening illness.

According to the American Cancer Society, there are more than 16.9 million Americans currently living that have a history related to cancer. The ACS also stated that the United States paid a total of \$5.6 billion in out of pocket costs by cancer patients in 2018. Such a high total points at the high cost of cancer and the financial burden it places on the average American. The average spending on cancer care is also projected to rise with numbers reaching close to \$245.6 billion by 2030¹⁴.

People who are or have been cancer patients are proven to face a higher probability of filing for bankruptcy. To be more specific, an analysis of various “medical, personal, legal, and bankruptcy sources” have found that cancer patients were “2.65 times more likely to go bankrupt” in the Western District of Washington State¹³. This corresponds with similar studies placing the national value to be near 2.5 times more likely to face bankruptcy. Such a tremendous increase in likelihood is thoroughly supported by numerous data points. For example, 40 to 80 percent of cancer patients take a leave of absence during their treatment, choosing to focus on their recovery rather than work. This period of unemployment usually lasts between forty five days and six months. Between this time, the total income of a cancer patient falls tremendously in comparison with those who are healthy. Studies have shown that cancer patients usually see a decrease in average earnings of \$3,600 up to five years after their original diagnosis. On the other hand, healthy individuals usually saw an average increase of \$1,800 in their earnings¹⁴. The lack of ability to take employment, even after full recoveries, alongside surmounting piles of debt, leaves many Americans in the face of bankruptcy and poverty.

Certain demographics are also more liable to face financial difficulties after being diagnosed with cancers. Those between the ages of 18-54 are 10.4% more likely to face financial difficulties most likely due to the lack of stability and income that come with a younger age¹⁴. The less educated are also more likely to face financial hardships as high school dropouts have a 17.4% higher chance of facing some type of financial hardship¹⁴. Evidence suggests that higher levels of education result in higher levels of income, and the lack of even a high school diploma suggests that those with lower levels of education are much more likely to be financially stressed from a cancer diagnosis. Finally, the study concludes that people of color, alongside people of lower incomes have a much higher chance of facing financial difficulties in comparison to their counterparts. Such figures are not shocking and simply reveal the inequity in access to affordable cancer treatment for people of certain ages, races, and socio-economic conditions.

VI. THE DEBILITATING EFFECTS CAUSED BY CANCER AND ITS TREATMENT

There are many life-changing habits and effects that pop up during and after being treated for cancer. For example, it is common for many cancer patients to face depression for years after being cancer-free. An example of this can be seen in VJ Sleight.

VJ Sleight is currently 63, but has been diagnosed with cancer twice. Her cancer diagnosis had struck right as she left her previous job and moved away from her friends and family. When Sleight found a lump on her body, she avoided seeing a doctor as her health insurance would have been removed had she been diagnosed with cancer. After waiting for 90 days, she had successfully been able to sign up for a private health plan. She also found that her previous job had left her eligible for a COBRA plan, allowing her to be “covered by two policies, so all her medical bills were taken care of”⁵. Though covered by two policies, Sleight went into heavy debt trying to pay for the insurance premiums.

Waiting 90 days in order to become eligible for a health insurance plan and going into debt had left Sleight extremely depressed. Sleight stated that she had “contemplated suicide” at one point⁵. She recalls thinking that she was “depressed,” “fat,” “broke,” and “in her 30s”⁵.

Sleight, however, decided not to remain witholden by such impulses due to her responsibility to help others. Sleight had signed up to be a teacher in a program that assisted people to quit smoking. Sleight herself had started smoking at 14 years old and understood how hard it was to quit. Sleight stated, “I thought, I have another class coming up. Who’s going to help these people if I don’t?”⁵. Sleight’s ability to help people and her finding a new job had allowed her to move on and remember why she was motivated to survive.

Unfortunately, Sleight had been diagnosed with cancer once again when she was 55 years old, 23 years after her first dance with cancer. At first, she was in denial and hoped it was an incorrect scan. However, she soon accepted the situation, but with greater strength than before as she already “knew the drill”⁵. Interestingly enough, the treatment cost when she first encountered cancer was \$40,000, but by the second time the treatment cost was \$120,000. In only 23 years, the cost to treat similar cancers had risen by three times. Sleight was covered by insurance again, but “copays and premiums added up to \$25,000 at a time when she couldn’t work” and went back into debt⁵.

VJ Sleight can be considered as one of the fortunate ones. Her insurance had covered her treatment costs for both her cancer encounters, and she had been able to successfully recover financially from her debt. However, this leaves the question of how other people could possibly deal with being diagnosed with cancer, especially with the debilitating mental health effects that commonly follow.

VII. YOUNGER PATIENTS IN RELATION TO FINANCIAL SURVIVABILITY

Cancer is never an expected obstacle during one’s lifetime, however, studies have proven that certain demographics are more likely to survive the financial hardships that come alongside cancer treatment than others. One of the most prevalent cancer types found in the United States is breast cancer. A research paper by Samila Obeng-Gyasi and a group of colleagues present data that analyzes how specific demographics are more likely affected by breast cancer. The paper stated that “younger age, lower income, unemployment, and Medicaid or uninsured status have all implicated as risk factors for financial insolvency among patients with breast cancer”⁶. The paper goes on to state that individuals between the ages of 18 and 44 who have been diagnosed with cancer have “annual medical costs 5 times higher than individuals in that age group without cancer”⁶. Such a statistic expresses the financial strain that breast cancer treatment places on individuals, especially of the younger variety. The paper also writes that a correlation between those less than or equal to the age of 64 have a higher chance of filing for bankruptcy when diagnosed with breast cancer.

The higher risk of filing for bankruptcy associated with an age lower than 64 are not without its reasons. The paper states that younger patients are in need of “more costly multimodal treatments secondary to aggressive underlying disease”⁶, increasing the price to receive adequate treatment. The paper also states that younger patients are more likely to require and pay for other health treatments. These treatments include services such as fertility preservation and mental health resources. The addition of such services drives the cost of treatment up dramatically.

Younger patients also have a higher chance of facing bankruptcy and financial hardships due to their unstable employment. As younger patients will have less chances to cement their incomes and maintain a level of financial stability, they are heavily affected by “missed workdays, reductions in work hours, and loss of employment”⁶ than other individuals of the same age. Being diagnosed with cancer forces individuals to give up on their career advancements to take care of their health. However, in this process, these individuals are giving up their chance at gaining wealth and destroying any financial literacy that arises from a stable, constant stream of income. The devastating toll of cancer treatment on one’s finances is more evident in those less than 64, and especially prevalent in those between the ages of 18 and 44.

VIII. NON-WHITE PATIENTS AND INSURANCE IN RELATION TO FINANCIAL SURVIVABILITY

The same study previously referenced also discussed the connection between higher rates of bankruptcy in individuals of the non-White race. The data provided is representative of the larger problem of inequity that plagues the United States. Minorities are at a disadvantage in multiple areas, but healthcare seems to be an especially detrimental and common area. In terms of breast cancer treatment, non-White women carried a much higher risk of filing for bankruptcy and facing financial problems later down the line in the United States. The paper states the study conducted to reveal such data had a

population of black women in the non-White category, indicating that the comparison can be specified between black women and white women who are diagnosed with breast cancer. The riskier chance at facing bankruptcy is related to the higher costs of treatment as black women are shown to be diagnosed with cancer at a younger age than their white counterparts and have been stated to have “higher rates of aggressive cancer subtypes” than white women.

Another factor that heavily impacts the financial stability of black women being treated for breast cancer is the lack of financial stability present in the first place. Black women, and the black population as a whole face higher levels of poverty and have higher rates of financial hardships. This arises from higher levels of unemployment instability present in the African American population that are not as prevalent in the white American population. The paper states that a recent systematic review paints African American ethnicity as one of the most important “factors associated with unemployment after breast cancer”⁶. Thus, the ethnicity of individuals, especially black women, can prove to be extremely disadvantageous and detrimental to the financial health of those attempting to pay for the treatment costs of breast cancer, an inequality that cannot be allowed to continue.

IX. LINK BETWEEN CANCER TREATMENT BANKRUPTCY AND MORTALITY RATES

Continuing on, cancer is known to cause bankruptcy and affect certain demographics more than others. However, the effects of the costs of cancer treatments, especially in regards to mortality rates have not been discussed often enough. A study by Mary Kim Barton titled “Bankruptcy Linked to Early Mortality in Patients With Cancer”⁷ explores exactly that. As the title suggests, bankruptcy is evidenced to be linked to higher and earlier mortality rates occurring in patients with cancer. The study occurs between 1995 and 2009 with 231,596 individuals older than 21 years old and being diagnosed with cancer chosen to be studied.

The study based its conclusion by measuring the mortality rate and comparing it between individuals who had filed for bankruptcy and individuals who had not. The results of the study correspond with previous studies as those who filed for bankruptcy were more likely to be “younger, female, and non-White” lining up exactly with what is previously stated. Individuals who had local or regional diseases and had received treatment were also found to be more likely to file for bankruptcy⁷. Within the group that filed for bankruptcy, the mortality ratio was discovered to be 1.79. This ratio revealed that those who filed for bankruptcy had a 79% greater chance of facing mortality compared to those who had not filed for bankruptcy⁷. Those with colorectal cancer had the highest rate of mortality among those who filed for bankruptcy, maintaining a 2.5 times more likely chance than those who had not filed for bankruptcy. The study proposed in this paper is a pivotal turning point in cancer research as it shows indication of a relationship between “financial distress and greater mortality” states Dr. Zarfar of the Duke Cancer Institute located in Durham, North Carolina states that the greater mortality rates most likely occur due to the “impact of cancer-related expenses on patient well-being, health-related quality of life, and adherence to therapy”⁷.

A probable cause discovered to be a likely cause of higher mortality rate is due to the fact that bankruptcy and its accompanying financial problems can cause patients to stop adhering to their treatment, leading to the cancer developing further without intervention. The doctors and scientists who conducted the study remarked that the results of the study declares the need to consider and create new policies that “reduce out-of-pocket costs, preserve insurance, and protect job security for persons with cancer”⁷. However, this is easier said than done, and is highly challenged by companies who seek to profit from the struggles of cancer patients.

The conclusion reached by this study demonstrates the need for new policies and regulations to be released in order to ensure that cancer patients have the highest rate of survival. The fact that cancer patients who filed for bankruptcy could have a higher chance of dying by 2.5 times is appalling and clearly expresses the issue of overwhelming treatment costs that pull down hundreds of thousands of Americans.

X. CANCER COSTS IN AMERICA COMPARED TO SOUTH KOREA AND CANADA

It is of equal importance to compare the costs of cancer treatment between the United States and other nations. South Korea and Canada were chosen as the nations of comparison due to the stark difference in the quality of healthcare provided by the nations alongside its low costs. Though South Korea has barely reached the age of 70 as a nation, it has made strides in healthcare that has allowed it to overtake the United States, even as the United States continues to have a GDP nearly 3 times the size of South Korea. Canada also remains known as having great healthcare with a GDP much less than that of the United States. As both are developed nations with globally recognized talents, it becomes necessary to compare the costs of treatment to determine how costly American healthcare is to the average citizen.

Table 2

Costs.

	Cost (US\$), Korea	Cost (US\$), Canada	Cost (US\$), the US
CT scan	133	1100	353
MRI	376	900	534
RH	2316	7888	14,241
WPRT	7845	4347	9198
ICR	1097	3381	4693
Chemotherapy (weekly cisplatin)	1421	2963	1645
Palliative care			
Medical cost for final year	11,266	8875	18,300
Major complications			
Anemia	354	5670	6874
Neutropenia	164	5670	6874
PE/DVT	3421	5822	6064
GI fistula	2562	6342	9683
GU fistula	3141	7065	6739
Hydronephrosis	1853	5646	3512
Bladder dysfunction	770	4637	9748
Small bowel obstruction	1739	3812	3364
Severe infection	1261	12,886	6874
Cystitis	276	5255	4540
Inflammatory bowel	323	5854	4127

RH, radical hysterectomy; WPRT, whole pelvic radiotherapy; ICR, intracavitary radiation; PE, pulmonary embolism; DVT, deep vein thrombosis; GI, gastrointestinal; GU, genitourinary.

The table above comes from a study conducted that compared the costs of medical care between three countries: the United States, South Korea, and Canada. The table shows a clear representation of the varying medical costs and illustrates the clear difference present between these countries.

As demonstrated by the table, the United States seems to have the highest medical costs, followed by Canada, with South Korea having the lowest medical costs in comparison. South Korea had the lowest cost for a CT scan with it costing a mere \$133, while Canada cost nearly 10 times that amount at \$1100⁸. South Korea had significantly lower costs to treat major complications compared to the United States and Canada with none of the major complications costing over \$3,500 while the costs to treat the same complications regularly went over \$5,000 in both the United States and Canada⁸.

South Korea seemed to have the lowest medical costs in terms of the costs of medical evaluations and major complications, with Canada's costs fluctuating between South Korea and the United States. However, the results of the table remain clear, and the statement that medical costs are significantly higher in the United States compared to South Korea. The same level of medical care and the same procedures are being provided, yet the United States costs multiple times more. This is indicative of the serious issue of the rising cost of healthcare that exists, seemingly only, within the United States.

XI. HOW CANCER TREATMENT OPTIONS ARE LIMITED IN THE UK

Cancer costs have steadily risen over the past decades. There have been many proposed solutions ranging from "increasing the total budget" through taxation or direct payment, or by "radical reform of the entire system from its insurance function through to its delivery system"⁹. However, an analysis of how limited the healthcare system is in England could provide insight into the similarities between the UK and the US and offer possible solutions to the problem.

Inequity exists currently as patients have to receive their care privately, which "is simply unaffordable to many, who have, after all, paid their tax-based insurance premium"⁹. There are many options for paying for cancer treatments. The first option is denial. The "denial of the existence of a drug, device or service and refusal to discuss any of its possible benefits during an NHS consultation is one way of dealing with the situation"⁹. However, this is not a viable option as patients want to and

can access all the information regarding cancer treatments, making sure that drug treatments are available for everyone in the NHS.

Another option provided for patients is the transfer of entire care to the private sector. Karol Sikora states that “without insurance, this amounts to signing a blank cheque” and asks how an increase in costs will be dealt with if “medical complications occur”⁹. Sikora also states that this gives rise to inequity as only people who have the financial means to afford such treatment will be able to, whilst poorer families can not afford better insurance.

Sikora identified another option in that a patient is “referred for private care to either the same consultant or to a colleague at a private hospital just for the component of care not available through the NHS”⁹. This proves inequity in the healthcare field once again as only those with financial wealth would be able to afford to pay for care given through the private sector. This is also shown in the next option that states that patients are invoiced by the NHS for extra treatment alongside a mark-up that covers the hospital costs and improves the quality of care. Sikora states that this option leads to “patients sitting in the same day ward receiving different drugs based solely on their ability to pay, but this is already happening”⁹.

The final option stated by Sikora is that patients will often obtain drugs and upgrades from untrustworthy sources, trusting the internet rather than their healthcare provider. Bans on copayments to “obtain drugs” will inevitably lead to patients seeking treatment from “underground markets”⁹.

The options left for patients in the United Kingdom are very limited and are only available to those with a lot of financial flexibility. Patients who are poor will have to seek treatment with less quality or seek treatment elsewhere. This leaves poor patients with a lack of options and down a path of danger and death.

XII. THE ROAD FORWARD

The number of cancer patients in the United States is projected to rise between 2015 and 2050. A published research paper states that the total number of cancer cases in the United States is expected to rise by 49% from 1,534,500 cases in 2015 to 2,286,300 cases by 2050. Such a stark rise is characterized by a rise in the older population in the United States. The paper states that the largest percent increase “was projected for adults aged ≥ 85 years followed by adults aged 75–84 years”¹⁰. The rising older population is heavily correlated with the predicted rise of total cancer patients.

With a 49% projected increase in cancer cases in just a few decades, it becomes necessary to address the rising costs that are heavily associated with cancer¹⁰. The costs of cancer ruin people’s livelihoods and, though they have cleared their bodies from the disease, the accompanying stress is something no one should deal with.

The most obvious solution that presents itself the most quickly would be policy changes. Changes in policies in regards to insurance companies and government regulations would certainly bring about massive change rather quickly. The rising costs of cancer could be addressed very quickly as soon as such a policy change is enacted. However, this solution is not utilized for many reasons. The act of proposing policy changes requires voters to elect leaders who are loyal to such a cause. This is rather difficult due to the volatile nature of politics. Intense lobbying by the insurance industry prohibits such policies from being proposed by denying any politicians who can bring about such change a position of power. However, policy changes have been previously proposed, with each policy change unable to bring about such monumental change.

The most obvious example of policies that have been introduced in the United States as of lately is the Affordable Care Act. Dubbed “Obamacare as it was introduced in the Obama administration, the Affordable Care Act aimed to provide support for patients of low-income backgrounds against rising medical costs and reduce the life altering effects of paying for treatment. It sought to reduce costs by “providing preventative care,” “limiting out-of-pocket costs,” “encouraging competition,” and “helping low and middle income people afford health coverage”¹². The Affordable Care Act changed American healthcare for the first time in decades and helped many individuals find affordable treatment for their illnesses. However, the implementation of the Affordable Care Act did not come without its objectors. Conservative legislators were against the higher taxes and insurance premiums that became associated with the Affordable Care Act and fought tooth and nail to change its policy. By 2016, the election of President Donald Trump gave the push needed to change certain policies regarding the Affordable Care Act which reduced the high taxes and cut down on the effectiveness of the Affordable Care Act. The introduction of the Affordable Care Act came with fierce opposition from the opposite party due simply to party differences. Thus, it becomes clear that the introduction of policies aimed to reduce the costs of healthcare cannot be a long term solution as the stark party differences leave both parties unable to compromise. Until politics and lobbying are moved to the sidelines, reducing the costs of healthcare will never be a true priority for the leading parties in America.

A research paper titled *Reducing Cancer Costs and Improving Quality Through Collaboration With Payers: A Proposal From the Florida Society of Clinical Oncology* discussed the issues regarding rising healthcare costs and offered solutions to mitigate the costs of treating cancer specially. The paper cites statistics stating that “US per-capita health care spending was 53% higher than that of any other country” in 2002¹¹. This is a trend that has continued into the present day. Yet even though the United States spends the most money on healthcare, it “consistently had fewer physicians, nurses, hospital beds, doctor visits, and hospital days per capita than the median OECD country”¹¹. This is an issue that has increasingly been plaguing the cancer treatment portion of the healthcare system. The American healthcare system has been aiming to lead patients towards large hospitals rather than smaller, private practices that can provide the same services at a cheaper cost. FLASCO is a group of like minded oncologists in Florida who offered a solution. FLASCO recommends that a program that emphasizes “clinical pathways, disease management, end-of-life care, and patient guidance to preferred providers” is a viable solution to combat the high costs of treating and diagnosing cancer.

Clinical pathways focus on standardizing care, “which reduces inappropriate drug utilization”¹¹. Studies have shown that standardizing care reduces the time spent in nursing, allowing for higher quality nurse-patient interactions to occur. By providing guidance on how to provide effective care, a higher quality of care will be provided alongside savings in costs. The paper states that several studies have shown “adherence to clinical pathways” to have “significant savings to the health care system”¹¹. A 2007 report stated that patients receiving pathway-adherent treatment cost €1,665.5, while those receiving nonadherent treatment cost €1,710.5.¹¹ Not only are costs saved when clinical pathways are implemented, the quality of care and effectiveness of the treatment also improves. A 2007 report on the “use of clinical pathways in treatment of acute low back pain” resulted in patients “receiving adherent treatments” to have “fewer physician visits, lower cost of care, 25.8% adjusted mean difference in improvement in disability, and 22.4% adjusted mean difference in improvement in pain”¹¹. The study also reported that 64.7% of patients who received adherent care had a successful physical therapy outcome, heavily contrasting the 36.5% of patients who had a successful physical therapy outcome after receiving nonadherent care. Therefore, clinical pathways provide a sense of guidance towards healthcare workers that improve time management while improving upon the quality of care and decreasing the costs of treatment.

Disease management is also a major element of the program proposed by FLASCO. Disease management exists in various different practices and is not an uncommon sight. However, disease management remains disorganized and without order in its current usage. FLASCO states that “training staff to evaluate patients for treatment related toxicities’ ’ can help in identifying and treating problems before such problems become “acute” and life threatening¹¹. Healthcare costs effectively increase as the issues patients deal with become more destructive. By preventing such serious diseases from developing, overall healthcare costs will also decrease. The paper also states that a clear disease management plan can “support patient compliance with prescribed medicine”¹¹. A study by the University of Michigan found that the overall healthcare costs decreased as “compliance focused interventions in patients with asthma” resulted in more patients taking their medication and less patients in the emergency room or being admitted to a hospital¹¹. Although the overall drug use increased, more money was saved by an effective disease management plan as patients did not have to pay for expensive hospital treatment.

Finally, FLASCO recommends that End-of-Life Care and Patient Guidance to Cost Effective Providers will lower the treatment of healthcare and cancer significantly. It is shown that a fourth of all Medicare benefits are used in the last 12 months of patient lives and of this amount, 40% is “consumed in the final 30 days”¹¹. A report stated that “33% of Massachusetts patients and 26% of California patients received chemotherapy in the last 6 months of life” in 2003¹¹. In the final 3 months, 23% of patients in Massachusetts and 20% in California received chemotherapy treatment. Another report from Duke University concluded that hospice care could effectively reduce treatment costs for terminal cancer. The use of hospices saved an average of \$2,309 in Medicare costs for each patient and saw an average savings amount of \$7,000 in patients who utilized hospices in the final stages of their lives. This brings up the question of whether terminal cancer patients should pay for expensive chemotherapy for terminal cancer patients who could receive a better quality of life and save money by receiving palliative care and symptom control instead of curative treatment¹¹. However, “physicians are not reimbursed for the complex and often time-consuming discussions with patients and their families regarding advanced planning for end-of-life care” and so there is no incentive for physicians to do as such if they can make more money by recommending expensive chemotherapy treatment instead¹¹. Hence, programs that incentivise proper advanced planning for patients with terminal cancer would significantly reduce costs for patients. FLASCO also recommends that patients receive adequate guidance regarding facilities that offer the best quality of care through proper implementation of “clinical pathways and hands-on disease management”¹¹. By communicating effectively between providers and payers, both parties

are heavily motivated to provide the best quality care at the best prices. Providers would be appropriately reimbursed for their services while patients could seek out the best quality healthcare available to them.

XIII. CONCLUSION

The rising costs of cancer accompanied by the rising inequality between two opposites of the economic spectrum creates a new problem for the healthcare system of the United States. People of color and people of younger ages are effectively more vulnerable to face such inequality when attempting to receive cancer treatment. As people from low socio-economic backgrounds attempt to treat cancer, the effects of paying off treatments results in demoralizing and dangerous consequences as an increased mortality rate is heavily associated with a high risk of bankruptcy for those seeking treatment. Understanding why cancer costs are so expensive and searching for a solution will prove to be the best course of action to address the inequity present in this field. By looking at the practices of other countries such as the United Kingdom and analyzing the differences in costs between countries like Canada or South Korea, the United States should be able to make informed decisions that influence policy to help create affordable cancer care for those in need.

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