INTERNATIONAL BACCALAUREATE

ENVIRONMENTAL SYSTEMS AND SOCIETIES

EXTENDED ESSAY

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CONTENTS

“ TO WHAT EXTENT HAVE HEALTHCARE POLICIES IN UNITED STATES INFLUENCED THEİR HUMAN POPULATION CURVE?”

1.0 INTRODUCTION

Today, the world-class advanced technology of the United States and its growing economy are known by everyone. As a cosmopolitan state, the United States is home to dozens or even hundreds of races. Having the third-highest population in the world, the US deals with the economic, legal, and most importantly health needs of 331 million 2 thousand 647 people, both American and non-American. In this research, I would like to emphasize the importance of health and to recognize the health policies of the USA, to see how much they are implemented, and to examine their effects on the population curve.

My research will be on the main health problems in the USA, healthcare policies and how much they can be applied, and the effect of deaths due to health problems on the population graph.

1.1 HYPOTHESIS

The developments in health policy and the increase in the budget allocated to the health sector cause the health system to develop, and accordingly, an increase in the slope of the population curve and a significant increase in the population are observed.

2.0 WHAT IS HEALTHCARE POLICY?

A basic set of rules and goals that control how care is given and accessible is the best approach to think about health policy. Health policy can be developed at the national or state level, then refined at a hospital or clinic.

Health policy has promised since it demonstrates to health practitioners what type of outcomes they desire. Health policy, according to the WHO, "defines a vision for the future that aids in the establishment of objectives and benchmarks in the short and medium-term."

It also aids in the clarification of health policy goals as well as the definition of roles and duties for diverse groups such as physicians, nurses, and administrators. It also aids in the development of consensus among a community's or health system's various stakeholders.

There are various types of health policy, each targeting a different area of health care. Here are some noteworthy examples:

• *Global health:* Global health considers the big picture by examining the health needs of people around the world and seeking equity in care[1].

• *Public health:* Policies carried out at the national, state, or local level to promote healthy lifestyles and prevent the spread of infectious diseases are called public health[2].

• *Medicine:* Health policy may relate to pharmaceutical product regulation, availability, and pricing[3].

• *Financing:* Health policy can affect how care is paid and how much the government reimburses health care providers[4].

• *Mental Health:* Mental health care is an important factor to consider when developing health policies, setting goals and objectives for promoting mental health, and treating people with mental health problems[5].

• *Equity in health:* Many health policies claim to want to make sure care is distributed equally among communities and demographics[6].

• *Insurance:* The health policy can also identify the role insurance plays in health financing, promote affordable or public insurance options, and regulate what insurers can and cannot do[7].

• *Health care:* The types of health care offered in a place are directly affected by the codification of a health policy[8].

Effective supervision, coalition building, regulation, systems design, and accountability, as well as the execution of strategic policy frameworks, are all required for effective leadership and governance. Three categories of stakeholders interact with each other to establish the health system and governance:

Healthcare providers (public and private for-profit, non-clinical, paramedical, and non-clinical healthcare providers; trade unions and other professional groups; care or service networks); and citizens (population representatives, patient associations, non-governmental organizations/NGOs, citizens' associations safeguarding the impoverished, and so on).

2.1 UNIVERSAL HEALTH COVERAGE

Protecting people from the financial consequences of paying out-of-pocket for healthcare reduces the risk of people being plunged into poverty because unexpected diseases require

them to deplete their life savings, sell assets or borrow money, often ruining their futures from their children.

2.2 HEALTHCARE POLICIES OF UNITED STATES

UHC means that all people and communities may get the health care they need without having to pay a lot of money. It includes all essential, high-quality health services, from prevention through treatment, rehabilitation, and palliative care throughout one's life.

Appropriate and competent health and care professionals with optimal abilities, as well as distributed, appropriately funded, and respectable roles at the institution, outreach, and community levels, are required for these services. Identify the leading causes of morbidity and mortality, and ensure that the quality of these services is adequate to improve the health of those who utilize them.

The Affordable Care Act was signed into law by President Barack Obama in 20109. The law's goal was to give health insurance to all Americans while also lowering medical costs and prices. Since the law's passage in 2010, measures that had a significant impact on the insurance business have been phased down. Supporters of the reform stated that it would lower expenses and improve access to health care, while opponents said that it would raise and lower prices. standard of health

The bill has undergone several legal challenges, and according to a Kaiser Family Foundation poll conducted in July 2015, 78 percent of Americans believe the law will be challenged in the future[10]. Because of the complexity and breadth of the health sector, which accounts for one-sixth of all expenditure in the country, and political tensions around the law, the implications of the reforms are unexpected and will be closely examined over the next several years.

2.3 AFFORDABLE CARE ACT

Highlights

On December 24, 2009, On March 21, 2010, the Senate approved the Affordable Care Act by a vote of 60-39 and the House by a vote of 219-212. Thirty-four Democrats in the House voted against the bill[11].

As of November 2018, 36 states and the District of Columbia had chosen to expand Medicaid, while 14 had chosen not to. The map below depicts the Medicaid expansions by state. In expanding states, hover over the province to see the governor's political affiliation during the expansion[12].

The greatest healthcare proposal proposed by President Donald Trump aims to fulfill his campaign promise to repeal and replace the Affordable Care Act. He has expressed support for House and Senate bills aimed at replacing parts of the Affordable Care Act, but as of November 2018, Congress has failed to pass a bill.

The bill’s increased premium tax credits, which are payments made by the federal government to help cover the cost of premiums for consumers who buy on exchanges, for people with incomes ranging from 100 percent to 400 percent of the federal poverty level (FPL). Individuals were not allowed to benefit from both Medicaid and health insurance subsidies in states that have expanded Medicaid to include adults with incomes up to 138 percent of the poverty level. Eligibility for the tax credit is set to begin at 139 percent of the poverty level in states that have expanded Medicaid to include adults with incomes up to 138 percent of the poverty level. It set a limit on the percentage of income these people may use to pay their premiums and calculated loan amounts based on the difference between that percentage and the whole cost of a benchmark plan's premiums. The percentage of income that households must pay is adjusted each year based on premium increases relative to income

growth. Consumers were offered the choice of paying their tax credits directly to their insurance carrier every month or claiming the complete benefit once a year when completing their tax returns.

For people earning between 100 and 250 percent of the FPL, the ACA decreased cost-sharing duties, allowing them to enroll in silver plans for up to 94 percent of their cost[13]. Under the law, people who bought a health plan through an exchange were not eligible for tax credits or cost-sharing reductions.

The United States Department of Health and Human Services utilized the 2016 poverty standards to establish tax credit and cost-sharing eligibility in 2017:

• The federal poverty line for individuals was $11,880 and $24,300 for families of four.

• The 138 percent of FPL for people was $16,394, and the 400 percent was $47,520.

• The 138 percent of FPL for a family of four was $33,534 and the 400 percent was $97,200.

• Individuals' incomes at 250 percent of the FPL were $29,700, while a family of four's income was $60,750[14].

Individuals earning less than the poverty line were not eligible for tax benefits under the statute. Adults without children who live in a state that does not extend Medicaid and have earnings between their state's Medicaid eligibility threshold and the poverty line can purchase insurance through exchanges but not through tax credits. To access full statistics on 2016 earnings for a family of four and the 2017 maximum monthly premium paid by poverty level for a benchmark plan, click 'show' in the tables below.

3.0 HEALTH INSURANCE

3.1 GENERAL INSURANCE COVERAGE

The number of uninsured people in the United States has decreased since the Affordable Care Act (ACA) was enacted in 2010, especially since the first open enrollment period began in 2013 and was implemented on health insurance marketplaces. Medicine. According to the Census Bureau, the number of uninsured people decreased by 18.8% between 2013 and 2014, from 45 million to 36.7 million. Uninsured people accounted for 16.3% of the population in 2010, 14.5 percent in 2013, and 11.7 percent in 2014. In 2016, 8.6% of the population did not have health insurance[15].

A total of 16.9 million Americans were newly insured between October 2013 and April 2015, with 22.8 million being newly insured and 5.9 million being newly insured. The number of uninsured Americans in the United States decreased from 42.7 million to 25.8 million16.

Gains in employer-sponsored insurance coverage accounted for a large portion of this increase. Employer-sponsored health plans attracted 9.6 million new customers, followed by Medicaid (6.5 million), individual markets (4.1 million), non-market individual plans (1.2 million), and other insurance sources (1, 5 million).

3.2 DEMOGRAPHICS

The healthcare industry is concerned about the changing demography of the country and its states. Various health services assist different groups of people, such as men and women. The proportion of people aged 65 and up in the general population is steadily increasing, and by 2050, this proportion is expected to reach 20.2 percent. This trend resulted in an increase in the demand for healthcare services as well as an increase in costs. When more seniors sign up for Medicare, the government's budget will be impacted.

State	Total residents	Children 0-18	Adults 19-64	65+	Male	Female
United States	313,395,400	25%	61%	14%	49%	51%
Massachusetts	6,595,300	23%	63%	14%	48%	52%
Utah	2,878,200	32%	57%	11%	50%	50%

Figure 1: Age and Gender Demographics, 2013

3.3 ECONOMIC INDICATORS

A healthy economy has a "stable and vigorous rate of economic growth" (in this example, gross domestic product or gross government product) and low unemployment rates, among other factors. The economic health of a state can have a big impact on health spending, insurance coverage, access to care, and inhabitants' physical and mental health. During a downturn, for example, employers may decrease employee insurance coverage, while employees may lose coverage outright. In stressful situations, people also opt to spend less on non-emergency treatment and postpone doctor consultations. These shifts may have an impact on governments' decisions on how to respond to industry changes. In addition, a person's socioeconomic situation has a substantial impact on their ability to access care and the quality of care they receive.

Between 2011 and 2013, the national median annual household income was $52,047, with the vast majority of residents earning at least 400% of the federal poverty level. In September 2014, the country's unemployment rate was 5.9%, and its GDP in 2013 was at $16.7 trillion[17].

3.4 INSURANCE COVERAGE

Employers have been the primary source of health insurance for people since the late 1940s and early 1950s. This is due, at least in part, to the income tax exemption provided to businesses for contributions to employee health insurance. The second most important source of health insurance is Medicaid, which is provided jointly by the state and federal governments for low-income people; Medicare, which is supported by the federal government for the elderly and disabled, is the third most important source of health insurance.

Around 48% of Americans were insured by their employer's insurance in 2013. Medicaid covers approximately 16 percent of the population, whereas Medicare covers 15%. The percentage of people without health insurance was 13%[18].

The percentage of persons who obtained health insurance via their jobs peaked in the 1980s and then began to fall. According to a study led by researchers at the University of Minnesota State Health Access Data Assistance Center and funded by the Robert Wood Johnson Foundation, fewer companies choose to provide health insurance to their employees, and fewer employees sign up when they do.

Between 2000 and 2012, the number of people with employer-sponsored insurance fell by 10%. The number of people on Medicare climbed by 2.2 percent, while the number of people on Medicaid increased by 5.8%. The percentage of people who are uninsured has risen by 2.3 percentage points.

3.5 SPENDING AND COSTS

Health and spending have become a top priority for state and federal governments as a result of increased consumer and employer concerns. Health expenditures as a percentage of national GDP increased from 5% in 1960 to 17.4% in 2009, accounting for more than one-sixth of the country's economy, and stayed constant through 2013.

The total value of the public and private sectors came to $2.9 trillion. The federal, state, and municipal governments each covered about 43% of these costs. If current trends continue, health spending will account for 19.3 percent of GDP in 2023, according to projections[19].

Part of the increase in spending can be ascribed to greater demand, but the majority of it can be linked to rising prices for delivering and receiving treatment. Consumers would have less disposable income, businesses will have to pay more to hire new employees, and politicians will have a more difficult time creating budgets. In 2009, the most recent year for which state-level data is available, total national health spending was $2.5 trillion.

A total of $8,175 was spent on each participant. In the United States, hospital treatment accounts for around 36% of total healthcare costs, with doctors and professional services accounting for the remaining 27%. Prescription medications and other non-perishable medical supplies accounted for about 14% of the total, with the remainder going to other special services[20].

Figures regarding total health expenditures are shown in the table below. These data contrast with data in Massachusetts and Utah, where per capita health expenditures are highest and lowest, respectively.

4.0 UNITED STATES' POPULATION

#	CITY NAME	POPULATION
1	**California**	37,253,956
2	**Texas**	25,145,561
3	**New York**	19,378,102
4	**Florida**	18,801,310
5	**Illinois**	12,830,632
6	**Pennsylvania**	12,702,379
7	**Ohio**	11,536,504
8	**Michigan**	9,883,640
9	**Georgia**	9,687,653
10	**North Carolina**	9,535,483

Figure 2: Population Statistics of US in 2010

#	CITY NAME	POPULATION
1	**California**	39,613,493
2	**Texas**	29,730,311
3	**Florida**	21,944,577
4	**New York**	19,299,981
5	**Pennsylvania**	12,804,123
6	**Illinois**	12,569,321
7	**Ohio**	11,714,618
8	**Georgia**	10,830,007
9	**North Carolina**	10,701,022
10	**Michigan**	9,992,427

Figure 3: Population Statistics of US in 2020

The first table shows population statistics for the United States in 2010. The ten most populous states in 2010 are listed, along with the population of each state. In the second image, the same measurements are depicted in 2020.

The balanced budget is the only bill that state legislators must pass each session. State legislators have finally passed a $250.7 billion budget for 2020-2021 that covers existing spending and funding new initiatives, with a $10 billion, or 16 percent, increase in spending between 2018 and 2019. There were no line-item vetoes in Governor Greg Abbott's budget[21].

State and federal spending on health and human services total $84.4 billion, indicating a 1% increase over the previous two-year budget cycle. Texas can invest fewer state resources to attract more federal funds since it has a higher federal match rate. Budget writers were allowed to spend $1.9 billion less in state total income for Texas Medicaid this session due to adjustments in the federal match rate.

Texas hospitals have performed admirably in general, achieving many of the industry's basic financial standards. The Texas Hospital Association pushed for the passage of the following critical budget issues and contributed to their passage:

4.1 Medicaid Rate Enhancements

• $140 million GR-D: Continue to increase Medicaid rates for certain trauma centers (House and Senate, HB 1). The project is fully funded.

• $23 million GR: Maintain Medicaid outpatient rate increases at rural hospitals (House and Senate, HB 1). The project is fully funded.

• $116 million GR/GR-D: Continue to enhance Medicaid rates for safety-net hospitals (House and Senate, HB 1). The project is fully funded. Grant money for selected trauma hospitals in the amount of $25 million from the ESF (House, SB 500). ESF of $15 million.

• $100 million GR: Medicaid rates for children's hospitals have improved (House, SB 500). 1,000,000,000,000 g

• $55 million GR: Improved Medicaid rates at rural hospitals for inpatient care (House, HB 1). AF: $90.5 million; GR: $35 million

• $6 million GR: Medicaid rates for rural hospital employees and maternity services improved (Senate, HB 1). 16 million AF for 6.2 million USD[22].

4.2 Behavioral Health

• $6 million GR: Funding for the Government Prescription Tracking Program, which will be connected with hospitals' electronic medical data ($6 million, SB 500). The Senate will spend $5 million, while the House will spend $1 million. The project is fully funded.

• GR: $39 million for 75 non-state mental institution beds ($39 million in the House, HB 1; $11 million in the Senate, HB 1). The cost of 50 beds is 26 million GR.

• Substance abuse treatment: $50 million GR (House, HB 1).

• $769 million ESF: Planning and construction of a public psychiatric hospital reconstruction during WWII. The House had passed the 659 million HB 1,300 million bill, while the Senate had passed the SB 500 bill. $445.4 million in ESF[23].

4.3 Maternal Health

• $67 million GR: Expanded Medicaid coverage for mothers aged 2 to 12 months (HB 1) ($20 million for home emergencies). This is completely inappropriate.

• $7 million GR: Maternal safety programs at the state level (Contingency in House, HB 1). 7,000,000

• TexasAIM maternal safety initiatives: 3 million GR (Senate, HB 1). The $7 million figure includes a 2.66 million GR.

• $8 million GR: Purchase in bulk long-acting reversible birth control tablets for Family Planning or the Healthy Texas Women's Program (House, HB 1). The rider has agreed to request that the Texas Health and Human Services Commission work with Medicare and Medicaid Service Centers to include the LARC bulk purchase in the HTW Medicaid 1115 Waiver. 4.4 Workforce.

Continue to support the Professional Nursing Disability Reduction Program ($19.9 million in House and Senate, HB 1), and have House riders assess the program's performance in addressing nurse shortages ($20 million GR). It has a total of 19.9 million GR.

• $60 million GR: Increasing physician and postgraduate medical education (House and Senate, HB 1). 100% funded[24].

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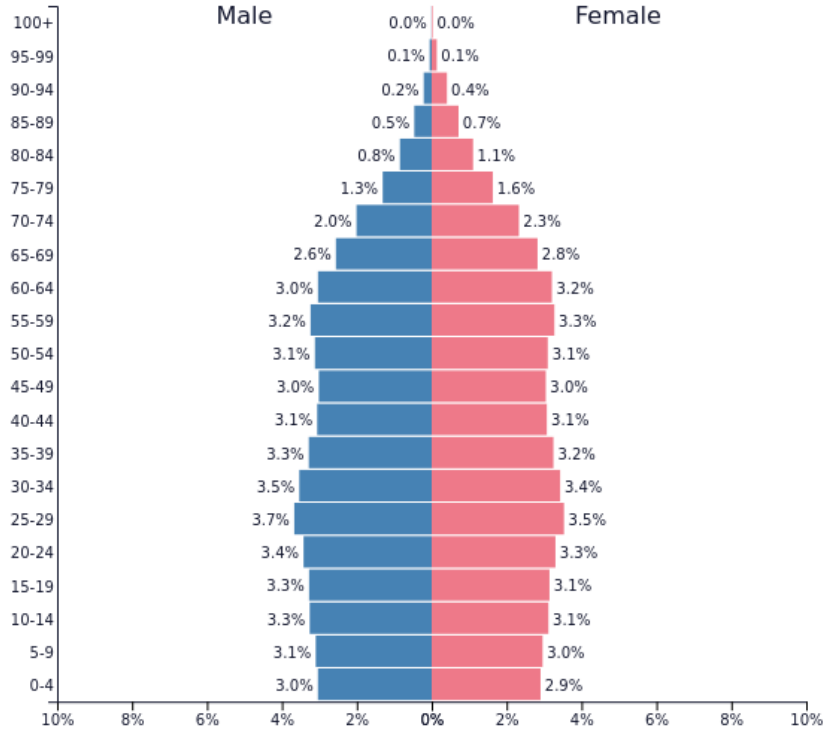
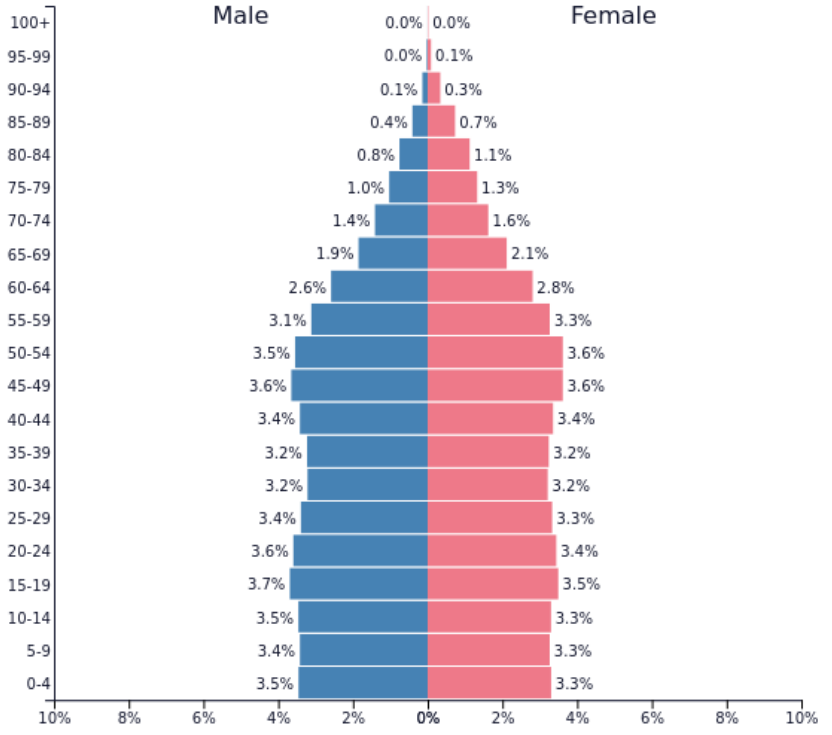
4.5 Medicaid Managed Care Management

- $755,000 GR: Contractor for an independent review agency for Medicaid-administered non-care medical reviews (House and Senate, HB 1). completely financed[25].

5.0 POPULATION PYRAMIDS



United States of America - 2020
Population: **331,002,647**



United States of America - 2010
Population: **309,011,469**

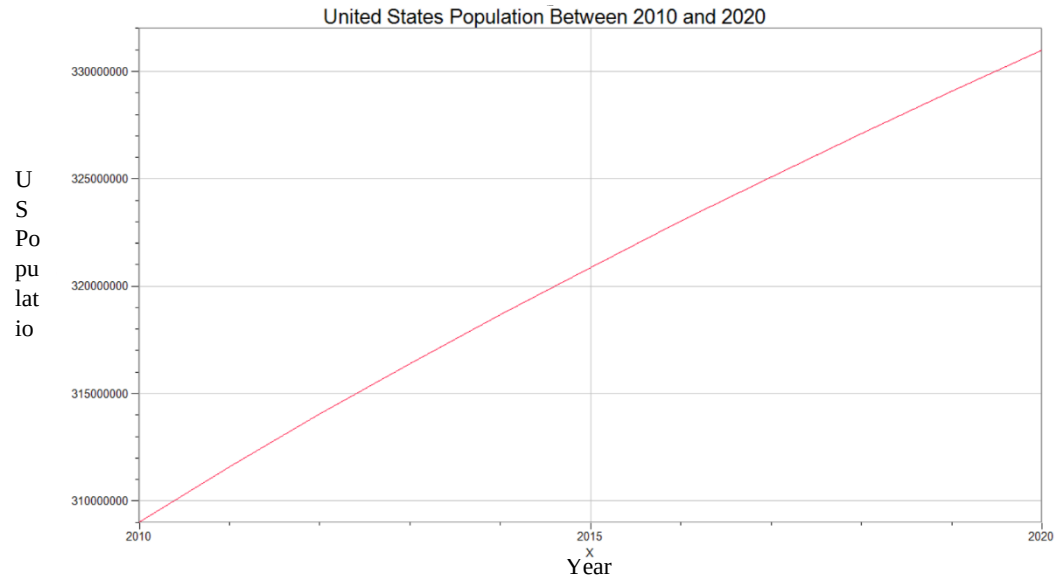


Figure 6: United States' Population Graph

6.0 DATA ANALYSIS

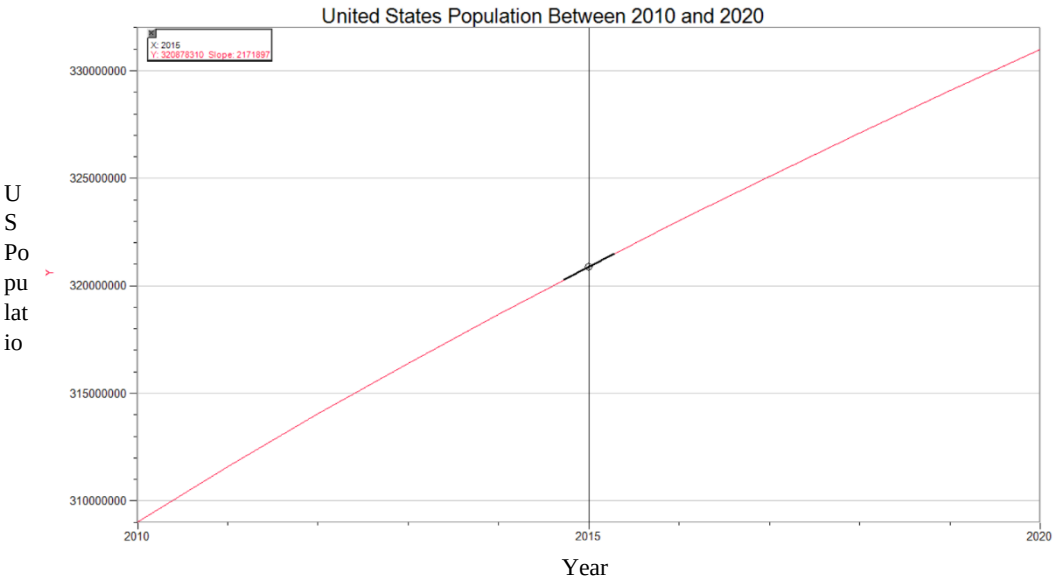


Figure 7: United States' Population Graph Gradient

While doing data analysis, I found the tangent, or slope, of the point corresponding to each year from 2010 to 2020 of my graph. The increase in this slope gives us the rate of change (increase) of the population. When I write the equation of my graph and take its derivative, I will have found the gradient of that point.

$$y = A \times \log(B\,x)$$

Where; A= 1.000, B= 1.000

Differentiate, $y' = (A \times \log(B\,x))'$

$$\frac{dy}{dx} = \frac{d}{dx}(A \times \log(Bx))$$

$$\frac{dy}{dx} = A \times \frac{d}{dx}(\log(Bx))$$

$$\frac{dy}{dx} = A \times \frac{d}{dg}(\log(g)) \times \frac{d}{dx}(Bx)$$

$$\frac{dy}{dx} = A \times \frac{1}{\ln(10)\,g} \times B$$

$$\frac{dy}{dx} = A \times \frac{1}{\ln(10)\,Bx} \times B$$

$$\frac{dy}{dx} = \frac{A}{\ln(10)\,x}$$

For example, if we find the slope of our graph in 2015;

$$\frac{1.000}{\ln(10) \times 2015} = 0.2171897 \cong 0.22$$

If we apply these procedures for each year and create a table with the budget allocated to the health sector that year, our table becomes as follows,

YEARS	SLOPE OF THE GRAPH
2010	0.254
2011	0.248
2012	0.240
2013	0.232
2014	0.224
2015	0.217
2016	0.210
2017	0.204
2018	0.199
2019	0.196
2020	0.194

Figure 8: United States Population Graph Slope over the years 2010-2020 Chart

7.0 DISCUSSION AND CONCLUSION

If we deduce from the graphs and tables, it can be observed that the US population has increased by about 20 million in 10 years. If we subtract the immigrations and the number of refugees who are US citizens, this value corresponds to approximately 14 million. The population has increased by 14 million in 10 years, but there is no significant change in the birth rate, the birth rate change of 0.43%, the reason for the increase in the population is not due to the high number of the new generation, but due to health problems, due to financial difficulties during birth, due to the lack of health insurance. Evidence that people who do not receive support have a reduced death rate. One fact that proves that US healthcare policies are functional in the burgeoning state-supported healthcare sector is the increase in the elderly population across demographics. The elderly population aged 65 and over, which was 12.8%

in 2010, increased to 16.5% in 2020 after 10 years. The reasons for this increase are the increase in the quality of life and the prolongation of life, the decrease in the number of people who lost their lives at the beginning of their old age due to health problems. Accordingly, it can be said that the effect of US healthcare policies on the US population curve is positive and supports the increase in the population.

When I took the derivative of the equation of the graph that I examined from 2010 to 2020 and found the slope of the graph at that point, I reached the rate of increase of the population. The population growth rate, which was about 0.254 in 2010, has decreased to 0.194 when we look at 2020. The decrease in this rate of increase does not mean that the population is also decreasing. The increase in population continues, but each year, there is less increase than the previous year. The reasons for the decrease in the rate of increase of the graph may be the decrease in the marriage rate, the decrease in people's desire to have children, the lesser number of children married by married couples, or the out-migration. What is important to me is the decrease in the elderly population and deaths due to health problems. It is not possible to increase the population only with healthcare policies, but one of the main reasons for the increase in the elderly population is the decrease in the number of people who lost their lives due to health problems in old age. This proves that healthcare policies are effective.

8.0 EVALUATION

8.1 STRENGTHS

The healthcare policies' main strength is the help to many people suffering from illnesses and can not find treatment because of financial difficulties. The state's allocation of such a budget to the health sector shows that it values its people and is a social state. Since the concepts of private and public hospitals are not frequently encountered in the US and the quality of

operations and controls performed in public hospitals is no different from those in private hospitals, people prefer public hospitals for treatment as much as their budgets allow. On top of that, fulfilling the needs of the patients in public hospitals, and the hospitals renewing its devices and equipment with this budget, and having it provided care is one of the important developments for public health. I also make a correct interpretation of these developments with the help of graphs and data, and I think that I have examined their benefits to society (population curve) optimistically.

8.2 WEAKNESSES

Those who have emigrated, and the refugees are included in the population. Because the numerical data isn't subtracted the immigrations and the number of refugees who are US citizens, this value corresponds to approximately 14 million. Numeric data changes from resource to resource. While researching the budgets allocated to each area in the health sector, I realized that these budgets differ from each other in the resources I found. I have tried my best to find the most accurate source and interpret it, but there may be a margin of error in its accuracy and precision. The health care policy budget that the US reserved, isn't enough for the 300,000,000 population of this country. Although the United States, with a population of over 300,000,000, uses large sums of money for health policy, there are people in the slums and cities who cannot benefit from this budget. Some hospitals cannot use the allocated budget, operating theaters that lack equipment, are not suitable for operation, and doctors who cannot receive a salary. This budget allocated is still too little for such densely populated states which are united.

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