

Public Conceptions of International Healthcare Comparisons

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Introduction

The U.S. Healthcare System: History, Challenges, and Successes

The United States is enduring a health and life expectancy disadvantage and continues to rank far below populations in other comparable industrialized nations. While survival and life expectancy in affluent countries have increased, developing countries have outperformed the United States (Woolf, 2023). Even after accounting for mortality related to the COVID-19 pandemic (and its decline), morbidity and mortality from other causes have steadily increased (Kapadia, 2024). Further, the COVID-19 pandemic exposed systemic weaknesses, highlighting disparities in access and outcomes, particularly among marginalized communities (Bailey et al., 2021). Despite being one of the wealthiest nations, the U.S. faces a substantial health disparity, exacerbated by inadequate funding, a fragmented public health infrastructure, and the lack of a universal healthcare system, leaving a significant portion of its population uninsured or underinsured (Blumenthal et al., 2024; Emanuel, 2021; Woolf & Aron, 2013). As a result, Americans are experiencing a poorer quality of life, poorer healthcare, and a shorter lifespan than other Western countries.

The U.S. healthcare system has undergone significant reforms to expand access to care and improve equity. Employer-sponsored health insurance (ESI) has remained a leading source of health coverage for American adults under the age of 65, although government interventions have played an important role in bridging coverage gaps (Gupta & Pagan, 2022). Some of those interventions include the Children's Health Insurance Program (CHIP) of 1997, which expanded coverage for low-income children, while the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 introduced Medicare Part D, providing prescription drug coverage for seniors (Centers for Disease Control and Prevention, 2023; Megellas, 2006). The 2010

Affordable Care Act (ACA) was the most significant reform since Medicare and Medicaid, extending health insurance to millions of Americans through Medicaid expansion, insurance marketplaces, and protections for pre-existing conditions (Obama, 2017). The ACA notably reduced the uninsured rate for low-income populations and increased access to care through chronic illness treatment and preventative care utilization (Guth et al., 2020; Sommers et al., 2017). However, the U.S. still faces challenges, with some states opting out of Medicaid expansion, leaving gaps in coverage for vulnerable populations (Garfield et al., 2021). As of 2024, ten states have not expanded Medicaid, leaving an estimated 2 million low-income adults in a coverage gap where they earn too much to qualify for traditional Medicaid but not enough to afford marketplace plans (KFF, 2024). Additionally, the ACA's reliance on private insurers means that affordability remains an issue for many Americans.

High healthcare costs remain a major barrier, with per capita expenditures surpassing those of all other high-income countries while delivering worse health outcomes (Papanicolas et al., 2018). Administrative complexity, high drug prices, and medical procedures contribute to financial strain on both individuals and the government (Blumenthal et al., 2020). Many Americans delay or forgo necessary medical care due to financial hardships, exacerbating health disparities and leading to unfavorable long-term outcomes (Tolbert et al., 2024; Emanuel, 2021). Moreover, Americans face financial burdens to cover the cost of health care due to high out-of-pocket costs, deductibles, premiums, and copayments (Blumenthal et al., 2024; Garfield et al., 2021; Guth et al., 2020; Emanuel, 2021; Papanicolas et al., 2018). Although the U.S. spends more per capita on healthcare than any other nation, it has poorer health outcomes compared to countries with universal healthcare (KFF, 2024). Emanuel (2021) emphasizes the U.S.'s low ranking in key health outcome measures, including life expectancy, infant mortality, and chronic disease management, despite its substantial healthcare expenditure.

Despite these challenges, the U.S. healthcare system remains at the forefront of medical and healthcare research and innovation, contributing to pharmaceutical advancements, technology, and treatments. The World Health Organization (WHO) cites U.S. medical institutions for their capacity to manage and treat complex diseases, offering patients access to the latest treatments and technologies (WHO, 2021). U.S. healthcare systems and research institutions contribute significantly to specialized care for complex conditions. Hospitals such as the Mayo Clinic, Cleveland Clinic, and Johns Hopkins are internationally recognized for their expertise in treating rare and severe conditions, with survival rates for critical illnesses often surpassing global averages. The recent expansion of telehealth services has also served accessibility, especially for rural and underserved populations (Mehrotra et al., 2020). Research has indicated that telehealth has not only improved access to healthcare but also resulted in cost savings by reducing the need for travel and decreasing the number of missed appointments. A 2020 study by Mehrotra et al. found that telehealth visits in the U.S. surged by over 1500% during the COVID-19 pandemic, providing critical care to millions of Americans in isolated regions (Mehrotra et al., 2020). Despite challenges with costs and disparities in access, the U.S. healthcare system excels in innovation, specialized care, and technological advancements, which continue to influence and shape healthcare worldwide (Emmanuel, 2021).

Social Imaginaries and Conceptions of the U.S. Healthcare System

Social imaginaries are formed when individuals conceive their social existence. These conceptions of phenomena, events, issues, and surroundings then become shared by large groups to form a common understanding (Taylor, 2004). They are dynamic frameworks that bridge understanding gaps and help make sense of familiar and unfamiliar issues (Bruce et al., 2024). According to Taylor (2004), common understandings of common practices contribute to a widely shared sense of legitimacy. Shared understandings are both factual and normative; they reflect how things generally function while incorporating imaginaries of ideals and what missteps might invalidate them (Bruce et al., 2024; Taylor, 2004).

In the context of healthcare, these imaginaries influence how individuals perceive and engage with health systems (Bizri-Baryak et al. 2025; Ivanitskaya & Erzikova, 2025). Complex health systems are seldom fully comprehended, and even more infrequently experienced in a comparative context, as few individuals receive health services in different countries (Ivanitskaya & Erzikova, 2024). Digital platforms like YouTube, however, provide spaces where these social imaginaries can be expanded (Bizri-Baryak et al., 2025). YouTube discussions reflect social imaginaries (Bizri-Baryak et al., 2025) of health systems (Ivanitskaya & Erzikova, 2024). When members of digital communities engage on platforms the social imaginary can be penetrated and transformed into new practices (Bizri-Baryak et al. 2025; Ivanitskaya & Erzikova, 2025).

According to Ivanitskaya and Erzikova (2024), digital platform users often relied on ideological labels to comment on universal healthcare and other health reform ideas. Frequently occurring nodes in their semantic network included the terms *capitalism*, *socialism*, and *communism* (Ivanitskaya & Erzikova, 2024). Comments proffered by conservatives supported the imaginary that healthcare is an individual's responsibility and not a collective human right subsidized by the state (Ivanitskaya & Erzikova, 2024). Conversely, commenters who identified as progressives or left-leaning argued that the U.S. healthcare system is already a mixture of capitalism and socialism (Ivanitskaya & Erzikova, 2024). These findings align with Taylor's work arguing that social imaginaries shape how citizens perceive the legitimacy of different forms of government and their interventions in policy (2004).

The U.S. healthcare system is viewed as inefficient, expensive, and a contributor to structural inequity (Bluementhal et al., 2024). Despite broad support for universal access to care among Americans and acknowledgment of the U.S.'s underperformance in comparison to OECD nations, healthcare reform remains out of reach (Ivanitskaya & Erzikova, 2025). Social imaginaries and comparative analyses define what is politically and socially conceivable in the evolution of policy (Taylor, 2004) like transitions to a single payer system, drug price regulation,

cost caps, and administrative cost reform (Rodina Bizri-Baryak et al., 2024). Despite evidence from other nations demonstrating the benefits of universal access and reduced costs of care and fragmentation, the persistence of social imaginaries about the role of government continues to challenge efforts of systemic reform (Rodina Bizri-Baryak et al., 2024). The absence of a common understanding of the U.S. government's role in providing healthcare to its citizens contributes to stalling attempts at reform (Blumenthal et al., 2024).

Bizri-Baryak et al.'s (2025) study of abortion and Ivanitskaya and Erzikova's (2024) research on the U.S. health system visualized large collections of social media comments as network clusters. The clusters—thematically distinct collections of co-occurring nouns and noun phrases—could be conceptualized as collective imaginaries. The overturn of *Roe v. Wade*, ending the right to abortion, gave rise to social media debates that reflected divergent imaginaries about the people and circumstances involved in abortion decision-making. Similarly, the discourse on the U.S. healthcare system gives rise to imaginaries because it defies complete understanding by a layperson due to its complexity. Healthcare imaginaries arise when people who encounter U.S. healthcare make assumptions or fill in the missing pieces with their own ideas, ideological intrenchments or beliefs. These imaginaries may not always reflect the actual realities of healthcare. Nevertheless, they are the mental models or narratives individuals create to make sense of the large and complex health system.

Ivanitskaya and Erzikova (2024) documented U.S. YouTube users' communication with commenters from other countries, as they compared U.S. healthcare to health systems worldwide. This study will focus on international health system comparisons, defined as social media exchanges of knowledge-based facts and evaluative judgements about healthcare systems in the U.S. and abroad. The comparisons can be based, for instance, on first-hand accounts of health services experienced by people who lived or worked in the U.S. and at least one other country. We will refer to such comparisons as “comparative health comments” in the remainder of this paper.

This study's significance stems from the need to understand how current conceptions of the U.S. healthcare system may be challenged and perhaps reshaped when American and international social media users exchange facts about health costs, service access, and wait times. A close examination of comparative health comments might help to shed light on the plasticity of social imaginaries held by the U.S. digital public, such as the notion that universal healthcare is a form of communism, a radical policy (Ivanitskaya & Erzikova, 2024). Building the foundation for future studies on health system imaginaries, we set out to a) develop a practical method of identifying comparative health comments, b) estimate the prevalence of such comments within a large corpus of comments to YouTube videos about the U.S. health system, and c) explore the comments' analytical potential by visualizing them as an overlay to the term co-occurrence network created by Ivanitskaya and Erzikova (2024).

Research Questions

Our investigation is guided by these questions: First, what proportion of social media comments collected for Ivanitskaya and Erzikova's study (2024) contain comparative health system information? Second, how well does the LLM perform when automatically detecting comparative health comments? Third, what do the comparative health comments contribute to our understanding of digital publics' conceptions of health systems, and the U.S. healthcare system, specifically?

Methodology

Video Selection

We selected 53 videos by 17 U.S.-based media outlets using these inclusion criteria: uploaded to YouTube between 2014 and 2023, accumulated 100K+ views, contained 800+ comments (as of August 28, 2023), and originated from channels associated with news, educational, or entertainment organizations. Videos posted on channels owned by individuals or focused on the COVID-19 pandemic were excluded.

Our dataset comprised primary comments and first-level replies from these selected videos. The videos were sourced from major news organizations, including Consumer News and Business Channel (CNBC), Cable News Network (CNN), Fox News, and Public Broadcasting Service (PBS) Frontline. Selection criteria, video grouping by subject, and characteristics are detailed in Table 1. We removed 5,575 duplicate comments, resulting in a final corpus of 179,193 unique comments for analysis.

Table 1

Video group characteristics: Number of videos per group, and YouTube channel owners.

Video groups	Videos N	Videos uploaded by:
Health care costs and financial Issues	13	CNBC, NYT, PBS, TED, VICE, Vox
Health care policies and politics	9	CNN, Fox News, NBC
ACA/Obamacare health care Reform	8	CNN, Fox News
Health care systems in different countries	8	CNBC, NowThis, NYT, Washington Post
Health care workforce	7	ABC News, Amanpour & Company, CBN News, NYT, PBS Vitals, WGN News
End-of-life health care	3	CNN, PBS
Single payer healthcare	2	Fox News, Vox
Children's healthcare	1	PBS
Comedy on the U.S. health care	1	Netflix
Medicare for All video by John Oliver	1	LastWeekTonight HBO

Classification of Comments Using Anthropic's API

We employed the Anthropic API, an iterative approach, prompt engineering, and the claude-3-haiku-20240307 model to categorize a subset of all available data. We categorized. Each comment from a DataFrame was paired with a carefully constructed prompt (see Appendices A-D), which included a detailed instruction and sample comments. The data input was accomplished in multiple batches, 5,000 comments per batch. The Large Language Model's (LLM) generated labels were extracted and stored along with the original comment, and a label. This information was then structured into a Pandas DataFrame (DF) for subsequent analysis. A DataFrame is a data structure used to store and manipulate tabular data, similar to a spreadsheet or SQL table. It consists of rows and columns and is a fundamental data structure in the Pandas library, which is commonly used in data analysis and manipulation in Python.

We initially classified comments as those containing comparative health information versus not. Next, we modified LLM prompts to classify comparative health comments based on discussions of healthcare costs (versus no mention of healthcare costs), and access (vs. no mention of access). We also performed geographical classifications (e.g., Canada, Europe).

Evaluation of LLM Classifications

Comparative health comments were manually verified to identify false positives and false negatives. The researchers developed operational definitions and constructed a codebook. A random collection of 61 comments was evaluated manually to estimate the prevalence of false positives and false negatives. A confusion matrix was created, followed by calculations of sensitivity, specificity, precision, negative predictive value, accuracy, and the F1 harmonic score to evaluate the model's efficacy and balance. **Construction of a Co-occurrence Network**

Leiden University's VOSviewer program was used to extract terms (nouns and noun phrases) from a corpus file with the text of 179,193 YouTube comments previously used. Using the Natural Language Processing algorithm in VOSviewer, we extracted 1,948 terms and mapped terms that appeared in at least 60 comments. Using pre-established exclusion criteria

and human judgment, we removed general, ambiguous, and overly frequent terms that obscured smaller but meaningful ones. When a term's meaning was unclear, we examined the original YouTube comments for context. The selection process combined human oversight with automation, integrating VOSviewer's relevance scores and network visualization while manually overriding defaults to ensure control. After merging synonyms and refining the dataset with a VOSviewer thesaurus file, we finalized 539 terms, applied a binary counting method, and allowed the algorithm to remove low-relevance terms, resulting in a final set of 323 mapped terms. Terms were then organized into thematic clusters based on their patterns of co-occurrence.

Themes in Comparative Health Comments

We analyzed social media comments containing comparative healthcare examples and found that cost and access were predominant topics discussed by commenters. To guide further coding and analysis using a large language model (LLM), we drew upon the definitions of healthcare cost, access, and appointment availability as established by Blumenthal et al. (2024) and Emanuel (2021). Cost refers to the financial affordability of healthcare, measured by patients' out-of-pocket expenses, including insurance premiums, deductibles, co-payments, and direct payments for medical services, medications, procedures, and hospitalizations, as well as how financial considerations influence the decision to seek or forgo care (Blumenthal et al., 2024; Emanuel, 2021). We defined access to care as the length of time patients must wait to receive medical services, including primary and specialty visits, hospitalizations, inpatient care, medically necessary and elective procedures, surgeries, ancillary procedures, and imaging, along with the ease of scheduling these appointments. Specifically, wait times represent the interval from the patient's initial request for care to the actual delivery of the healthcare service (Blumenthal et al., 2024; Emanuel, 2021).

Overlay Construction

Custom overlays in VOSviewer were created by converting classifications generated by LLM into binary scores or variables measuring whether or not each comment contained information about comparative health, cost-based comparisons, and access to care comparisons. Custom overlays facilitate the visualization of each variable's distribution across semantic network nodes. Each network node represents a term—noun or noun phrase mentioned by 60 or more comments—the larger the node, the more comments mentioned the term it represents. In a custom overlay, each network node is re-colored based on the following ratio: number of comments containing information about comparative health (or cost-based comparisons and access to care comparisons) divided by the total count of comments that mention the term.

We examined nodes with the highest ratios, paying special attention to co-occurring nodes and large nodes, to understand the distribution of comments about comparative health, cost-based comparisons, and access to care comparisons within the network that represented all discussions of the U.S. healthcare in response to the 53 YouTube videos we selected for this analysis.

Network Analysis

We analyzed comments containing terms that scored one standard deviation above the scale midpoint in our overlays, along with comments that were classified by our LLM based on regional mentions. To deepen our understanding of the context, we applied the qualitative interpretive approach outlined by Braun and Clarke and examined comments that contributed to high-scoring nodes (in SD units) related to comparative health, cost-based comparisons, and access to care comparisons. Additionally, we identified regions and countries referenced in health system comparisons and sought to detect patterns associated with both the variable and the regional mention.

Ethical Considerations

The study used publicly available user-contributed YouTube comments. Commenter identity was protected by lightly rewording representative comments, removing all identifiers, and presenting results in a summary form.

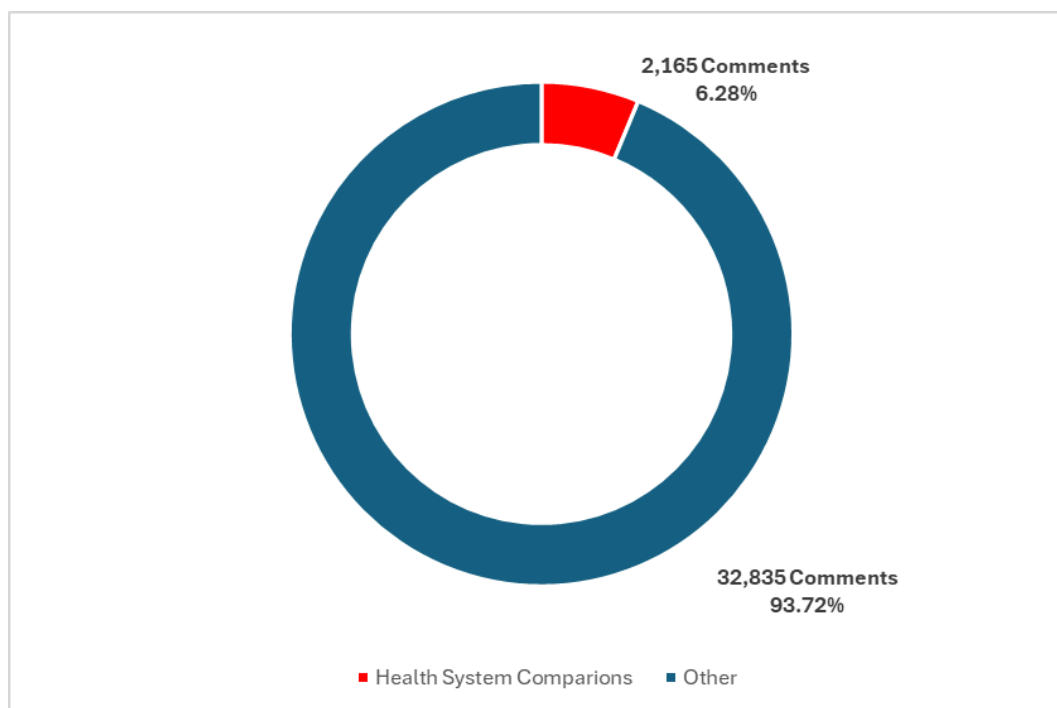
Results

Identification of Comparative Health Comments

Using a prompt-engineered large language model, we used an iterative approach to classify a subset of 34,500 comments (19.25% of all comments). To answer the first research question, we calculated the percentage of all comments classified as comparative health comments. Specifically, 6.28% of comments (2,165/179,193) were LLM-classified as comparative health.

Figure 1

Percentage of comparative health comments



Model Performance

We manually coded a sample of 300 comments classified by the LLM and created a confusion matrix to evaluate the model's performance to correctly classify comparative health

experiences and non-comparative health experiences (see Table 2). Second, we calculated Cohen's κ to evaluate fair agreement between the LLM and manual coding of comments with comparative experiences. Claude-3-haiku-20240307 LLM had a near-perfect agreement with manual coding with a $\kappa = 0.985$, 95% CI 0.96-1.00; $P < .001$.

Table 2

Crosstabulation: Claude-3-haiku-20240307 LLM by Manual Coding

LLM	Manual Coding		Total
	0	1	
	<u>N</u>	<u>N</u>	<u>N</u>
0	204	2	206
1	0	94	94
Total	204	96	300

Third, we calculated concordance measures to further examine the performance and balance of the model. According to Sharma et al. (2022), accuracy measures the proportion of instances correctly classified as comparative health knowledge relative to the total number of instances. The LLM achieved an accuracy of 99%. Sensitivity, also known as recall, identifies true positives within a confusion matrix, with the LLM achieving 97.9% sensitivity (Gandy et al., 2024). Specificity, which represents the proportion of correctly identified negatives, was 99% for the LLM. Precision measures how accurately the model makes positive predictions, with higher precision indicating fewer false positives (Sharma et al., 2022). The LLM demonstrated 1.00 precision, meaning all positive predictions were correct. The F1 score, the harmonic mean of precision and recall, provides a more balanced evaluation metric than accuracy alone (Gandy et al., 2024). The model's overall performance depends on classification accuracy, precision, and recall sensitivity (Sharma et al., 2022). Compared to manual coding, the LLM achieved an F1 score of 98.9% (see Table 3).

Table 3

Performance table for Claude-3-haiku-20240307 LLM against manual coding.

Measure	Calculation	Formula
Sensitivity (Recall)	0.979	True Positive/ (True Positive + False Negative)
Specificity	0.990	True Negative/ (True Negative + False Negative)
Precision	1.000	True Positive/ (True Positive + False Positive)
Negative Predictive Value	0.990	True Negative/ (True Negative + False Negative)
Accuracy	0.993	(True Positive + True Negative)/ (True Positive + True Negative + False Positive + True Negative)
F1 Score	0.989	$2 \times [(Precision \times Recall) / (Precision + Recall)]$

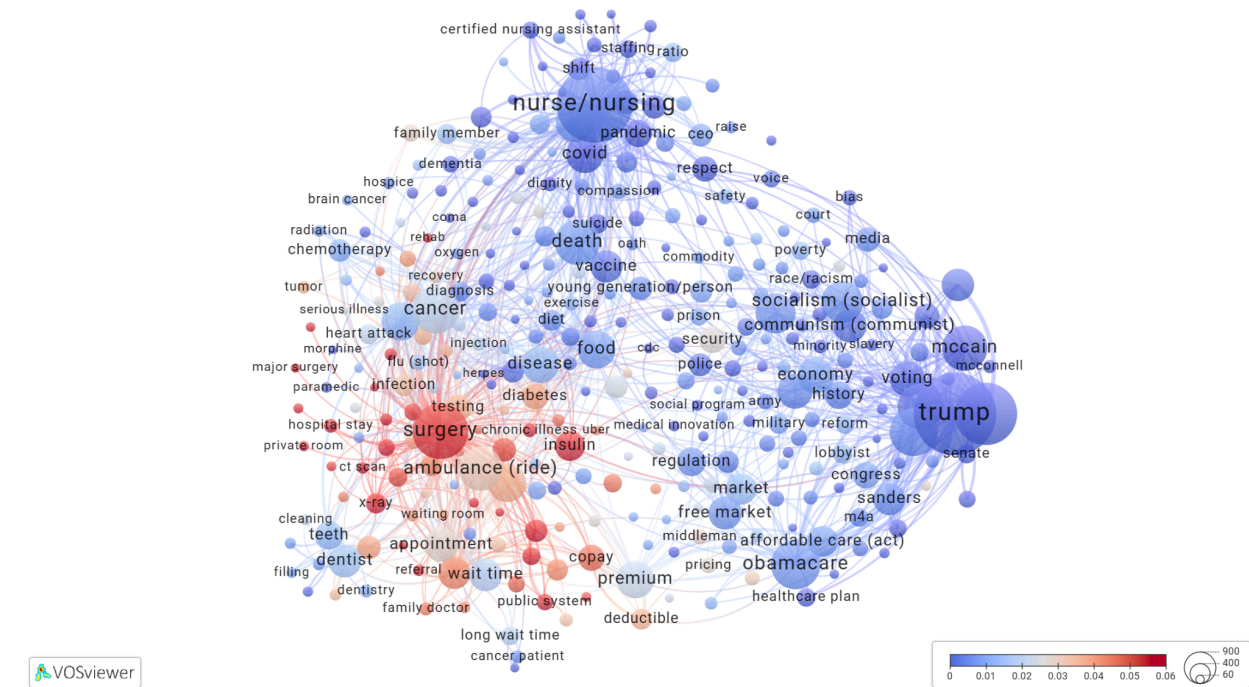
Next, we examine commenters' discussions of healthcare costs and access to care.

Cost of Healthcare

Cost Overlay. We used the LLM to detect evidence of cost-related conception within the 2,165 comments containing comparative healthcare knowledge. The model detected 1,400 comments discussing cost-related aspects of healthcare. The dominant themes identified through inductive coding highlighted that U.S. healthcare is excessively expensive, inefficient, and financially crippling. Our visual overlay illuminated terms that scored one standard deviation above the mean. The 10 largest and darkest terms recolored by the overlay are *surgery*, *hospital stay*, *insulin*, *private hospital*, *public hospital*, *emergency room*, *CT scan*, *X-ray*, *chronic illness*, and *rehab*. The dominant themes identified through inductive coding of comments containing the 10 highest-scoring terms on the cost overlay revealed that U.S. healthcare is excessively expensive, inefficient, and a significant financial burden (see Figure 1).

Figure 1

Overlay depicting the distribution on comments that mention cost. An interactive map can be accessed through Leiden University's VOSviewer Online: <https://tinyurl.com/28xz2x2e>



High Cost of Healthcare in the U.S. Many commenters expressed frustration over the exorbitant costs of medical care in the U.S., emphasizing how even routine procedures, emergency visits, and essential medications come with unaffordable price tags. Examples shared included \$350 for an eye exam, \$3,000 for an ER visit, \$27,000 for a cyst removal, and \$60,000 for dental surgery. The sticker shock of these expenses was frequently contrasted with healthcare systems in other countries, where similar services are either free or available at a fraction of the cost. These personal experiences speak to the financial burden of the U.S. healthcare system and how it disproportionately affects individuals without insurance or substantial savings.

Bankruptcy and Financial Hardship. Digital community members revealed how medical expenses often lead to severe financial distress, forcing people to choose between seeking care and maintaining financial stability. Stories of individuals going bankrupt due to cancer treatments, surgeries, or ambulance rides were common, illustrating how medical debt is

a uniquely American problem. Some commenters described how their entire savings were wiped out by a single medical emergency, while others shared concerns about being one illness away from financial ruin. Comparisons to countries with universal healthcare emphasized that medical bankruptcy is nearly nonexistent elsewhere, reinforcing the view that healthcare in the U.S. is not just a service but a financial risk.

International Comparisons and Healthcare Affordability. A significant number of comments compared healthcare costs in the U.S. with other developed nations, particularly Canada, the UK, France, Denmark, and Australia. Commenters from these countries expressed disbelief at the high costs Americans face, emphasizing that in their home countries, major surgeries, hospital stays, and doctor visits are either free or come with minimal charges. Several commenters who had lived in both the U.S. and other nations noted the stark contrast in affordability and accessibility, often stating that the U.S. healthcare system deterred them from living or working there permanently. The overwhelming sentiment was that high costs in the U.S. were unnecessary and unjustified, as other nations have proven that quality healthcare can be provided at lower costs.

The Role of Government and Insurance Companies. Participants in the commentary blamed insurance companies, pharmaceutical corporations, and political inaction for the skyrocketing cost of healthcare in the U.S. Several comments pointed to the influence of lobbyists who prevent meaningful reform to protect industry profits at the expense of patients. Others criticized the for-profit nature of American healthcare, arguing that essential services should not be dictated by corporate greed. A recurring theme was frustration with politicians, particularly those who oppose healthcare reform while benefiting from industry donations. Some commenters explicitly stated that healthcare should be a public service, not a business, reinforcing the belief that the current system prioritizes financial interests over human well-being.

Taxes vs. Healthcare Costs. Comment authors debated the trade-off between taxes and healthcare expenses, with many arguing that higher taxes in other countries ultimately save individuals money compared to the high premiums, deductibles, and out-of-pocket costs in the U.S. Commenters from Norway, Finland, and Canada highlighted that their income-based tax contributions allow everyone to access care without fear of financial ruin. Others pointed out that many Americans already pay an amount equivalent to high tax rates, but instead of funding universal healthcare, it goes to private insurance companies that deny coverage. These discussions suggested that the American system does not reduce costs but redistributes them inequitably, making healthcare more expensive and less efficient.

Fear of Seeking Medical Care. Several comments described how fear of medical bills prevents Americans from seeking necessary care, leading to worsening health outcomes and avoidable medical emergencies. Commenters shared personal stories of delaying doctor visits, avoiding ambulances, and rationing medications due to cost concerns. Some commenters noted that in their countries, healthcare decisions are made based on medical need rather than financial considerations, while in the U.S., patients must weigh the risk of debt against the urgency of their condition. A few examples illustrated extreme cases, such as people refusing cancer screenings or critical procedures because they couldn't afford treatment. This culture of financial hesitation in seeking medical help was repeatedly criticized as a failure of the system.

Influence of Political Ideology. The commentary also highlighted how political ideology shaped healthcare policy in the U.S., often prioritizing corporate interests over public health. Some expressed frustration that single-payer healthcare was falsely equated with socialism, even though many capitalist nations successfully implemented universal healthcare. Others criticized both Republicans and Democrats for failing to enact meaningful reform due to the influence of powerful lobbies. The idea that the U.S. healthcare system was the "best in the world" was expressed by some commenters and disputed by others who pointed to international rankings that placed the U.S. far behind other developed nations. The general consensus was

that healthcare reform is not just a financial issue but a deeply political one, shaped by misinformation and ideological resistance.

Healthcare Access

An Access Overlay. We used the LLM to detect evidence of access-related conception within the 2,165 comments containing comparative healthcare knowledge. The model detected 1,834 comments discussing access-related aspects of healthcare. The dominant themes identified through inductive coding highlighted that the U.S. healthcare system has many barriers to care, which perpetuate systemic inequities. Our visual overlay illuminated terms that scored one standard deviation above the mean. The 10 largest and darkest terms recolored by the overlay are *surgery, appointment, referral, specialist, long wait time, family doctor, X-ray, MRI, CT scan, and public system* (see Figure 2).

regardless of social class, ensuring that healthcare decisions were based on medical needs rather than administrative hurdles.

Preventative Care vs. Crisis-Driven Care. A major theme in the discussion was the role of preventative care in maintaining public health. Commenters from countries with universal healthcare systems described how easy access to routine checkups and screenings led to early diagnosis and intervention, preventing more severe health conditions. In contrast, in systems where access was more restricted, people often delayed seeking care until a medical issue became urgent, leading to unnecessary complications and suffering. Some commenters pointed out that in their countries, they could visit a doctor at the first sign of illness, receive necessary treatments, and return to work or daily life without disruptions. This approach was recognized as improving overall public health and reducing the burden on emergency services.

Wait Times vs. Quality of Care. A common point of discussion was the balance between wait times and access to high-quality medical care. Some individuals from countries with universal healthcare acknowledged that non-urgent procedures and specialist visits might have involved longer wait times. However, they emphasized that emergency cases and life-threatening conditions received immediate attention, ensuring that those in critical need were not left untreated. Others countered the narrative of excessive delays by highlighting that streamlined triage systems effectively prioritized care. While a few commenters expressed concerns about bureaucracy slowing down services, most argued that these systems still provided reliable healthcare access to everyone rather than limiting care to only those who could navigate complex insurance and provider networks.

Healthcare as a Human Right vs. a Market Commodity. Many individuals in the discussion framed healthcare as a fundamental human right rather than a privilege determined by personal circumstances. They contrasted systems where access was guaranteed to all citizens with those that operated as market-driven entities, where individuals had to purchase healthcare services like any other commodity. Commenters expressed frustration that in some

countries, receiving medical care is perceived as a transactional process rather than a public service. They argued that healthcare should have been prioritized as a core function of government, similar to public education and emergency services, rather than being left to private corporations whose primary motivation was profit.

Cross-Border Medical Tourism. Several individuals discussed seeking healthcare services in other countries due to differences in accessibility and quality. Some described traveling to neighboring nations for surgeries, specialist visits, or routine medical procedures because care was more readily available outside their home healthcare system. Others mentioned that they or their family members had to move internationally to access life-saving treatment or avoid restrictions within their home country's system. This phenomenon highlighted disparities in healthcare availability across different systems, reinforcing arguments that some models provided better access to care than others.

Political and Corporate Influence on Healthcare Systems. A recurring theme was the role of politics and corporate lobbying in shaping healthcare policies. Many commenters expressed frustration that proposed reforms to improve healthcare accessibility were often blocked by politicians with financial ties to private healthcare and insurance industries. Some noted that efforts to implement single-payer or universal healthcare models faced resistance due to ideological opposition or corporate influence. Others discussed how misinformation and political rhetoric were used to dissuade others from supporting more inclusive healthcare systems, often equating universal healthcare with a loss of personal freedoms.

Emergency and Specialized Care Access. Differences in emergency and specialized care access were another significant point of discussion. Some individuals shared experiences of receiving immediate and high-quality care in their countries, where emergency treatment was prioritized based on medical urgency rather than financial considerations. Others discussed the ease of accessing specialists in their healthcare system, where referrals and consultations were streamlined. However, some commenters from other nations highlighted challenges such as the

limited availability of specialists or bureaucratic delays in getting necessary treatments. While some systems prioritized rapid access to specialists and life-saving interventions, others required patients to navigate administrative hurdles before receiving care. Despite these variations, the consensus was that a well-functioning system should ensure that people receive timely medical attention based on medical needs rather than external factors.

The Overlap Between Access and Cost

A visual inspection of overlays in Figures 1 and 2 suggested a significant overlap between cost and access, confirmed by Kendall's tau (.78, $p < .001$) calculated at the node level. The same comments can be represented by multiple nodes, causing non-independence of observations at the node level of analysis. Kendall's tau is less sensitive to violations of independence of observations than Person's or Spearman's measures of association.

The overlap was also evident during comment analysis: Commenters described how financial barriers directly impacted their ability to receive care. Several commenters expressed frustration that in the U.S., even when care was available, the high cost prevented them from seeking it unless necessary. One commenter recounted how they avoided going to the emergency room for severe symptoms because they feared the bill, only seeking care when their condition became life-threatening. Others mentioned that in countries with universal healthcare, they did not have to hesitate before seeing a doctor, as access was guaranteed regardless of income. Commenters also acknowledged that while universal systems provided widespread access, there were trade-offs such as longer wait times for non-urgent procedures.

Tables 4 and 5 show terms extracted from 100 or more comments that scored the highest on cost and access. The tables provide further evidence of the overlap in health system comparisons on cost and access. Nine out of 10 terms with the highest share of comments related to costs and access appeared in both tables but in different order. Also, access issues were broader and more frequently discussed, according to the extrapolated ratios, than issues of cost, suggesting that cost of care was likely conceptualized as a subset of access to care.

Table 4

Highest concentrations of comparative health comments about costs: Top 10 terms with at least 100 comments

Term	Occurrences	Comparative health comments related to cost, divided by occurrences	
		Mapped ratio	Extrapolated ratio
blood test	133	0.0977	0.5075
heart surgery	127	0.0945	0.4909
CT scan	121	0.0909	0.4722
X-ray	372	0.0887	0.4608
hospital stay	169	0.0828	0.4301
scan	254	0.0787	0.4088
public hospital	287	0.0732	0.3803
chronic illness	168	0.0714	0.3709
insulin	810	0.0679	0.3527
public system	244	0.0656	0.3408

Note. Term occurrences were calculated for all comments (n = 179,193). The ratio of cost-related comments was calculated and mapped for a subset (19.25%) of all comments. The extrapolated ratio was calculated as a mapped ratio multiplied by 100 and divided by 19.25. The ratios approximate the distribution of cost comparisons across the network terms.

Table 5

Highest concentrations of comparative health comments about access: Top 10 terms with at least 100 comments

Term	Occurrences	Comparative health comments related to access, divided by occurrences	
		Mapped ratio	Extrapolated ratio
public hospital	133	0.1150	0.5974
X-ray	127	0.1129	0.5865
public system	121	0.1107	0.5751
family doctor	372	0.1083	0.5626
CT scan	169	0.1074	0.5579
blood test	254	0.1053	0.5470
heart surgery	287	0.1024	0.5319
scan	168	0.0984	0.5112
hospital stay	810	0.0947	0.4919
MRI	244	0.0901	0.4681

Note. Term occurrences were calculated for all comments (n = 179,193). The ratio of access-related comments was calculated and mapped for a subset (19.25%) of all comments.

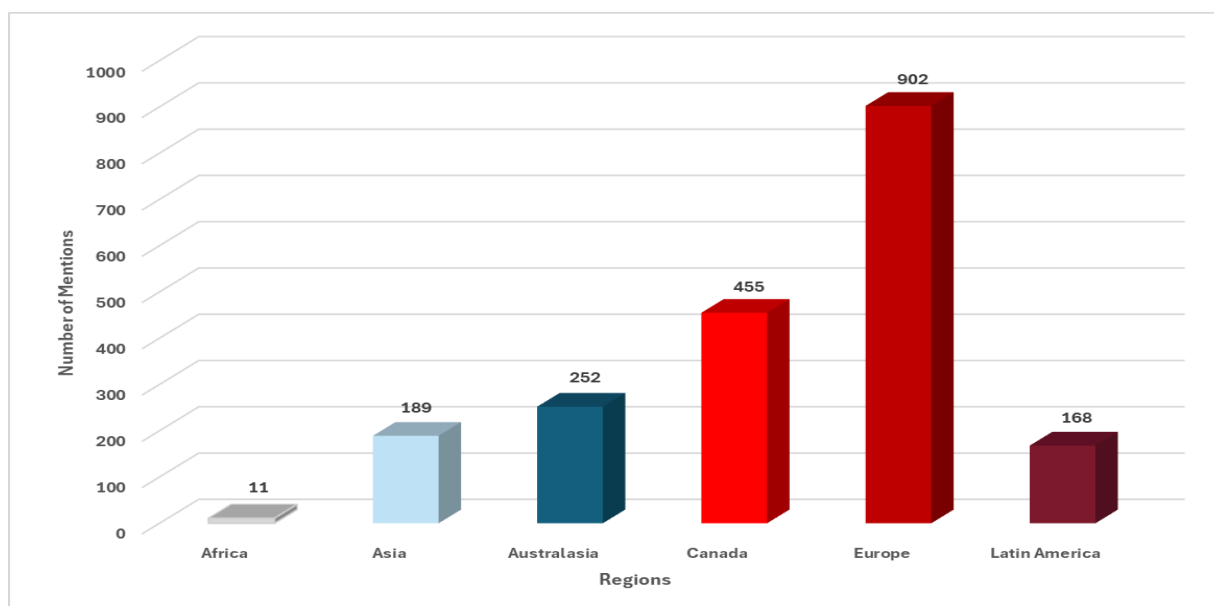
The extrapolated ratio was calculated as a mapped ratio multiplied by 100 and divided by 19.25. The ratios approximate the distribution of access comparisons across the network terms.

Comparative Health Experiences and Regional Mentions

Comparative health comments identified by the LLM were also coded for regional mentions. Of the 2,165 comments containing comparative experiences, 1977 referenced countries outside the United States (see Figure 3). The remaining 188 directly discussed the United States.

Figure 3

Countries or Regions outside of the U.S. mentioned in comments with comparative health experiences or knowledge.



Africa

Eleven commenters provided comparative health experiences from Africa. Personal anecdotes contrast healthcare affordability and accessibility in the U.S. to other nations, including developing countries. While Americans often delay or forgo medical treatment due to high costs, countries like Egypt, Morocco, South Africa, and Rwanda provide either free or highly subsidized healthcare. For example, in West Africa, a tumor removal costs \$500

compared to at least \$15,000 in the U.S., and insulin is available for free or at minimal cost in Egypt and Morocco, whereas Americans sometimes die due to its unaffordability.

A Rwandan shared “my country is giving Health Care to everybody and has the most sought-after healthcare system in Africa. The health delivery system is used as a best-case scenario by many experts. It is also famed for its success in implementing the community health insurance program which has improved access to quality health for citizens” [26760].

Asia

In the 189 comments discussing healthcare in Asia, three main themes emerged: affordability, accessibility, and government involvement in healthcare. Commenters highlighted how many Asian countries provided significantly lower healthcare costs compared to the U.S., with treatments and medications often available at a fraction of the price. Access to care was another key theme, as many nations had universal or heavily subsidized healthcare systems that ensured medical treatment for their populations, regardless of income level. Government involvement played a crucial role, with various countries implementing policies to regulate costs, subsidize essential medications, and ensure widespread coverage. Countries mentioned in these discussions included Japan, South Korea, China, India, Singapore, Taiwan, Thailand, Vietnam, the Philippines, Malaysia, Indonesia, Pakistan, Bangladesh, Sri Lanka, Nepal, the United Arab Emirates, Saudi Arabia, Iran, and Turkey.

Affordability. Many Asian countries prioritized affordability and government subsidization, ensuring that medical care remained accessible to all citizens. Governments regulated healthcare costs, allowing people to receive treatments at significantly lower prices than in the United States. Countries such as India, China, and Japan set price caps on essential services and medications, preventing excessive costs from burdening patients. A Chinese citizen shared, "Healthcare in China is much more affordable than US, you don't even need to buy health insurance unless you're expecting some serious illness like cancer. I don't

understand how a developed country like the US can make receiving healthcare so hard and so expensive" [13105]. In contrast, the U.S. system depended on private insurers and market-driven pricing, which led to inflated costs.

Access to Care. Universal coverage and mixed public-private healthcare systems allowed many Asian nations to provide care for all citizens while maintaining a competitive private sector for those who sought additional services. South Korea, Taiwan, and Japan implemented comprehensive universal healthcare programs that guaranteed medical access regardless of income or employment status. In these countries, individuals could visit doctors, receive essential surgeries, and obtain life-saving medications without facing financial hardship. An Expat in Japan shared, "I have lived in Japan for the last 25 years. Very, very good medical care with minimal or 0 waiting times" [23612]. The United States, on the other hand, tied healthcare access primarily to employment-based insurance or private coverage, leaving millions uninsured or underinsured.

Government Involvement. Government regulation of pharmaceutical and hospital costs plays a crucial role in keeping healthcare expenses manageable in many Asian countries. Japan, for example, maintained strict price controls on medications, ensuring that life-saving drugs remained affordable. India became a global leader in producing generic medications, offering treatments at a fraction of the cost charged in the United States. In contrast, the U.S. government did not negotiate drug prices, allowing pharmaceutical companies to set high costs without regulation.

A South Korean commenter shared, "Every time I go to the doctor for a check-up here in Korea, I pay less than 3\$ (3,000 won). Our healthcare system is one of the best in the world, and I'm grateful for it every day. I genuinely feel sorry for patients in the U.S. and truly hope the government pushes for better and more efficient health insurance for everyone." [15358].

Australasia

Comparative experiences from Australasia describe the U.S. healthcare system as flawed compared to the universal systems in Australia and New Zealand. Commenters from Australia and New Zealand expressed gratitude for their healthcare systems. While they acknowledged their respective systems' shortcomings, they were grateful for the financial security during illness and timely access to care for the population. In the 255 comments, three main themes emerged: universal healthcare, affordability, and accessible public care with private options.

Universal Healthcare as a Collective Responsibility. A dominant theme in these comparative discussions is the belief that healthcare should be a universal right, funded collectively through taxation, rather than a privilege based on financial means. Many commenters from Australia and New Zealand expressed shock and disbelief at how the United States failed to provide basic healthcare for all its citizens, often noting that their countries prioritize public well-being over profit. According to a citizen of New Zealand, “we have healthcare for all and private healthcare is an option for those who can afford it. You just get more individual care and faster service. But everyone gets healthcare through the public system. We decide as a society that we will collectively pay for through our taxes” [11316]. This stands in stark contrast to the United States, where many remain uninsured or underinsured, leading to financial ruin for those who fall ill. One commenter from Australia stated, “if you need surgery, you get it” [21390], while an American counterpart is more likely to delay care due to cost concerns. This theme is further reinforced by accounts of people losing their homes or relying on GoFundMe campaigns to pay for medical treatment in the U.S., a reality that is seen as inhumane and preventable by those living in countries with universal healthcare in Australasia.

Affordability and Cost Control Through Government Regulation. Another major theme is the role of government intervention in reducing healthcare costs, particularly in regulating drug prices and hospital fees. Australians discussed how their government actively

negotiates with pharmaceutical companies to keep medication affordable, in contrast to the U.S., where drug prices are often dictated by private corporations with no government-imposed price caps. For example, “in Australia, the government subsidizes prescription medications. Ventolin inhalers in the US cost anywhere from \$30 and \$60. In Australia they cost \$7.95” [17436]. Beyond prescription drugs, commenters describe how hospital visits and major surgeries are either free or significantly subsidized, ensuring that no one faces bankruptcy due to medical expenses. The stark contrast is emphasized through anecdotes, such as an Australian receiving emergency surgery and paying nothing, while an American with the same procedure could be charged tens of thousands of dollars upfront.

The U.S. Healthcare System as a Market-Driven Model. A recurring critique within these comments is that the U.S. healthcare system operates more like a business than a public service, with insurance companies, pharmaceutical corporations, and private hospitals dictating access to care based on profit incentives. Many commenters point out that the U.S. allows insurers to deny coverage or charge high premiums; this is unfathomable in countries with publicly funded healthcare systems. In Australia and New Zealand, there is an expectation that everyone, regardless of income, will receive necessary medical treatment. In the U.S., access to healthcare depends on employment-based insurance, personal wealth, or the ability to pay out of pocket. Australasians acknowledged that the cost of undergraduate degrees and medical school are so high that they inflate the cost of care to offset educational debts.

Canada

The 455 comments about Canadian healthcare focused on three main themes: universal access to healthcare, affordability through taxation, and concerns about wait times and sustainability. Canada’s universal healthcare system was overwhelmingly viewed as superior to the U.S. model. While some acknowledged room for improvement, the Canadian system was seen as more equitable, less financially burdensome, and more humane.

Universal Access to Healthcare. One of the most consistent themes in the Canadian comments was the emphasis on universal access to healthcare, which ensures that all citizens, regardless of income, employment status, or pre-existing conditions, receive medical care. Unlike the U.S. system, where millions remain uninsured or underinsured, Canadian healthcare is publicly funded and accessible to all citizens, permanent residents, immigrants, and asylum seekers. Many commenters shared personal experiences of receiving extensive medical treatments, including surgeries, emergency care, and specialist visits without out-of-pocket expenses. Some mentioned how even homeless individuals could receive life-saving procedures at no cost, illustrating the comprehensive nature of the system. Additionally, Canadians noted that universal health care provided peace of mind. One Canadian shared, "living with universal health care for well over half a century, I find this whole issue baffling. I wish my American friends the best. May they find peace with one another and target the real enemies common to all humans: sickness, poverty, ignorance, selfishness, and greed" [7095].

Affordability Through Taxation was another major theme, as Canadians largely supported their tax-funded healthcare system. Many comments compared the total cost of healthcare per capita in Canada and the United States, noting that Americans paid significantly more while receiving less comprehensive coverage. Canadians explained that a portion of their income tax, often cited as around four to five percent or a specific healthcare levy, covered most medical services. Canadians contrasted this with high insurance premiums, deductibles, and copays in the United States, arguing that even with higher taxes, they ultimately paid less for healthcare. One commenter shared, "I live in Canada, when my sis had brain surgery, they had a specialist to monitor each limb and it cost \$0. Mind you we pay a ton of taxes" [22056]. Some also pointed out that the Canadian approach allowed people to spend money on other types of insurance, such as home or life insurance, which they might not have been able to afford if they had to budget for private health coverage like in the United States.

Concerns Over Wait Times and Sustainability. While most Canadians praised their healthcare system, some acknowledged its shortcomings, particularly regarding wait times for specialist care and elective procedures. One Canadian shared, "2-6hr wait times here in Canada. Not enough docs and nurses. High taxes. Months of wait times for allergy tests, cat scans, etc. Welcome to one payer health program" [22414]. They viewed this as a trade-off for universal coverage, where urgent cases received immediate attention, while non-life-threatening conditions sometimes required longer waits. Additionally, some raised concerns about the sustainability of the system, especially with an aging population and increasing healthcare demands. Some pointed out that healthcare spending was consuming a larger share of provincial budgets, with projections that it could become difficult to sustain without reforms. A few Canadians stated that wealthier patients sometimes chose private clinics or sought treatment in the United States to avoid delays.

Europe

The 902 comments about European healthcare focused on three main themes: accessibility and affordability, lower healthcare costs, and efficient structures and policies. The overall impression within the comments suggested that European healthcare systems were generally more accessible, affordable, and efficient compared to the U.S. While some commenters acknowledged challenges such as wait times or additional costs for dental and vision care, most expressed strong support for their country's healthcare system and viewed it as a fundamental right rather than a financial burden.

Accessibility and Affordability. Many people described their experiences with European healthcare systems, emphasizing accessibility and affordability. In Germany, a patient paid only a small fee for medications that otherwise would have been much more expensive. In France, an individual shared, "my mom had a tumor when I was younger and she paid nothing; I live in France" [21806], reflecting the country's approach to universal healthcare. In Poland, where long wait times for specialized care were common, people still found the system more

manageable than private insurance. In the Netherlands, while health insurance was mandatory, the government provided financial support to keep coverage affordable, ensuring that citizens and residents could access necessary care. Even with some limitations, these systems ensured that most could receive medical treatment without financial hardship.

Lower Healthcare Costs. Several commenters expressed how healthcare expenses in Europe remained relatively low. In Austria, one person recalled undergoing a knee operation that included physical therapy and several months of recovery, all covered by the healthcare system. In Finland, another individual paid a small set fee for an overnight hospital stay, with an annual cap limiting total medical expenses. An informant from the Netherlands shared, “I pay 150 Euro/month and my boss 50 euro, so for 200 Euro/month everything is paid for...doctors, hospital costs, surgery, medicine everything” [21986]. The Dutch system allowed for a mix of public and private healthcare, giving people the option to seek faster treatment through private clinics while maintaining universal coverage. Though some mentioned additional out-of-pocket payments for dental care, the overall financial burden remained significantly lower compared to countries without universal healthcare.

Efficient Structures and Policies. European digital community members also discussed the structure of their healthcare systems and how they operate efficiently. Many European countries regulate drug prices, preventing excessive costs for necessary medications. In France, individuals could choose their healthcare providers without worrying about financial barriers. In the United Kingdom, the government implemented digital systems to streamline appointment scheduling and diagnostics, reducing the need for in-person visits. As one commenter noted, “the booking system automates the process, allowing people to receive a diagnosis through the NHS without needing to see a doctor in person” [25636]. In the Netherlands, hospitals and insurance companies negotiated treatment costs, ensuring price transparency and preventing excessive charges. The Dutch healthcare system also provided coverage for long-term care, including nursing homes and home care, ensuring that elderly and

chronically ill patients received the support they needed. Some pointed out that while doctors in European countries earned less than their counterparts elsewhere, their medical education was either free or heavily subsidized, reducing financial pressures on healthcare professionals. These structural policies ensured that care remained widely accessible and financially sustainable for most citizens.

Latin America

There were 168 comments about Latin American healthcare. Many commenters highlighted a dual-system approach, with universal public healthcare available but often underfunded, while private healthcare provided faster and higher-quality services for those who could afford it. Affordability was a key theme, as medical treatments and medications cost significantly less in comparison to the U.S., making Latin America a common destination for medical tourism. While some acknowledged challenges such as long wait times and disparities in care quality between public and private sectors, most expressed appreciation for the accessibility of essential healthcare services, which prevented financial hardship and medical debt.

Universal Healthcare with Limitations. Many Latin American countries provide universal healthcare or government-funded medical services, ensuring that essential treatments and medications are available at little to no cost. Commenters from Brazil, Mexico, and Colombia described how public hospitals and healthcare services covered major surgeries, cancer treatments, and emergency care without direct payment. However, these systems often face challenges such as underfunding, long wait times, and varying quality of care, particularly in rural areas or overcrowded cities.

Affordability Compared to the U.S. Latin American healthcare is significantly cheaper than in the United States, even in private hospitals. Medical tourism is a recurring theme, an American shared, “My family and I often travel to Mexico for health care and dental treatment. Its cheaper, better, and super professional” [26903]. Commenters also noted that surgeries,

emergency room visits, and medications were often 10 to 20 times cheaper in Latin America than in the U.S., even in private hospitals. Some Americans mentioned flying to Mexico or South America for medical care and still saving money compared to U.S. prices.

A Two-Tier System: Public vs. Private Healthcare. Many Latin American countries operate on a dual healthcare model, with a public healthcare system that is free or low-cost and a private healthcare sector that offers faster and higher-quality care for those who can afford it. A commenter shared, "In Brazil, there's private and free hospitals, in free hospitals you can do almost everything from a private hospital but without paying nothing. Of course, it has a lot of issues, but it is great solution for people who can't afford transplants or other things" [21840]. Wealthier individuals or those with private insurance preferred private hospitals, which had shorter wait times and better facilities. Despite these disparities, the public healthcare systems still provided essential services to all citizens, preventing medical bankruptcy, which is common in the U.S.

Discussion

This study posed three research questions. First, what proportion of social media comments collected for Ivanitskaya and Erzikova's study (2024) contain comparative health system information? Second, how well does the LLM perform when automatically detecting comparative health comments? Third, what do the comparative health comments contribute to our understanding of digital publics' conceptions of health systems, and the U.S. healthcare system, specifically?

We answered the first question by calculating prevalence for a subset (19.25%) of all comments. Given the total corpus size ($n = 179,193$), we estimate that it may be possible to build a dataset of over 10,000 comparative health comments by LLM-processing the entire corpus. Importantly, there were only 6 comparative health comments per 100 comments in our collection, a finding that was confirmed by human coding and through LLM analysis. Individuals who make health system comparisons typically need to be well-traveled or have direct or

indirect knowledge of other health systems, such as through living or working abroad. Most commenters may lack this background knowledge, limiting their ability to engage in informed comparisons.

Targeting this unique group of informants is a challenge. Traditional research participant recruitment methods that rely on broader population samples and readily available sampling frames may not be useful. Social media, however, provides access to these otherwise difficult-to-reach populations (Khan & Malik, 2017). Due to the low occurrence of comparative health comments, a fine-tuned approach to video inclusion and exclusion criteria may be needed.

We answered the second research question by analyzing model performance for detecting comparative health comments against manual coding. Our findings indicate that LLMs were effective and reliable in automatically detecting comparative health comments. However, we acknowledge potential overestimation of LLM performance in our results due to small sample size ($n = 300$), the non-random selection of comments, and convenience sampling of videos from which the comments were sourced. The rate of true positives in the sample we used to estimate LLM performance was much higher (30%) than the actual prevalence of comparative health comments in the dataset (6%). Future studies should verify LLM performance in a much larger, representative sample.

The third question about what can be learned by analyzing comparative health comments was answered by examining how health systems were compared, as well as by examining regional differences. YouTube commenters who spoke about comparative health evaluated health systems by focusing on healthcare costs and access. This finding aligns with past assessments of healthcare system effectiveness (Blumenthal et al., 2024; Emmanuel; 2021).

Laypeople and experts assess access to care using different criteria. Health system comparisons primarily rely on expert-designed classifications of health system performance. Our

study makes it possible to compare expert and non-expert conceptions of healthcare system comparisons, an opportunity to assess whether expert assessments, including standardized surveys of patients' opinions of health systems, fully capture what truly matters to the general population. For example, while our commenters emphasized barriers such as wait times, insurance requirements, and travel distances, expert evaluations focused on coverage statistics, fragmentation physician-to-population ratios, and hospital capacity (Blumenthal et al., 2024; Emmanuel; 2021). This variance suggests that expert assessments, while structured and comprehensive, may not fully capture the frustrations people face in navigating healthcare systems.

YouTube commenters in our study focused on out-of-pocket costs, medication prices, and personal financial burdens. Health system performance studies already consider many such concerns by incorporating patient-reported measures of access to care. In a recent study of 70 health systems by The Commonwealth Fund (Blumenthal et al., 2024), patients reported on skipped medical or dental care due to high cost, insurance-denied payments for medical care, and out-of-pocket costs. However, a study by Blumenthal et al. (2024) had no mention of patient-reported survey measures about emergency transportation. The high cost of U.S. ambulances was a salient concern in the YouTube commentary we analyzed, causing patients to avoid specialized medical transport even during emergencies.

The finding that cost and access frequently emerge as interconnected themes in laypersons' conceptions of health system comparisons is consistent with expert conceptualizations of cost as a dimension of the broader domain of access to healthcare (Blumenthal et al., 2024). Indeed, financial considerations directly influence individuals' ability to obtain necessary services. For many people affordability is not just a financial issue but also a barrier to accessing care, often making it unavailable. Our data demonstrated not only an overlap between cost and access but also a higher share of comparative health comments dedicated to access, as compared to cost. These findings confirmed that both experts and lay

people see cost and availability of services as two subsets of access. Our definition of access emphasized availability while separating it from cost; however, commenters tended to view the two as intertwined.

Finally, our exploratory regional analysis examined regional variations in commenters' conceptions of health systems. Our analyses were limited to regions outside of the U.S. and lacked important country-specific nuances. Future research should pay special attention to comparative health comments by U.S.-based social media users because they are likely to provide insights about healthcare imaginaries, for example, when commenters argue about the superiority of the U.S. healthcare system.

In healthcare system evaluations, the U.S. are frequently compared to other OECD countries that provide universal or near-universal healthcare, including Canada, the United Kingdom, Germany, France, Australia, Sweden, Switzerland, the Netherlands, Norway, Denmark, and New Zealand (Blumenthal et al., 2024; OECD, 2023). These nations represent a range of public, hybrid, and regulated private insurance models, offering valuable contrasts to the market-driven U.S. system. Reports such as the Commonwealth Fund's "Mirror, Mirror 2024" study (Blumenthal et al., 2024) and OECD health assessments (OECD, 2023) often benchmark the U.S. against these countries to highlight differences in healthcare costs, access, efficiency, and outcomes. Ezekiel Emanuel's book titled "Which Country Has the World's Best Healthcare?" expands on these comparisons by including Taiwan and China, in addition to the aforementioned OECD nations (Emanuel, 2021).

In contrast to expert assessments of health systems that often focus on high-income countries, the comparative health comments in our data set covered many different geographies, including middle- and low-income countries. These comments offer insights about healthcare in countries not typically featured in expert rankings. For example, social media users from Rwanda, Morocco, and Egypt described accessible and affordable healthcare, with their respective governments subsidizing public health investments. Rwanda allocates over 6%

of its national budget to healthcare, successfully implementing universal health insurance, despite not being classified as a high income nation (UNICEF Rwanda, 2022). Morocco provides low cost insulin ensuring that diabetes patients do not suffer from medication shortages (Benazizi, 2023). Egypt has begun manufacturing insulin locally to defray the financial burden for its diabetic population (Egypt - T1International, 2025). In January of 2025, the Trump Administration canceled pricing caps on insulin making the medication unaffordable again for a large subset of the population (Lovelance, 2025).

A juxtaposition of health system comparisons by experts and YouTube commenters may help to overcome the exclusion of emerging countries, which reinforces a social imaginary that only high income nations are capable of protecting their residents' health. Our social media commentary offers positive facts about developing and middle income countries, many of which have health policies that prioritize universal access (Johnson et al., 2017), unlike the United States, a high-income country that allows profit-driven care models that exclude millions from receiving treatment (Blumenthal et al., 2024). U.S. policy makers and the general public may benefit from learning how other nations have made healthcare affordable and accessible, despite lower GDPs.

In conclusion, this exploratory research confirms the availability of international health system comparisons in the YouTube commentary to videos about the U.S. healthcare system. It also offers preliminary evidence supporting the use of LLM classification methods to extract relevant data. Finally, our limited analysis of comparative health comments suggests several promising research directions. Based on larger samples of comparative health comments, future studies can be designed to assess the criteria used by laypeople to compare health systems, as well as to analyze health system conceptions, revealing imaginaries. A close reading of comparative health comments may pave the way to studies on how disconfirming evidence, shared by non-experts with deep knowledge of multiple health systems, is used to challenge imaginaries formed by the U.S. digital public.

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Appendices

Categorization Prompts for Anthropic

Appendix A. Comparative Health Comments

In our prompt, informants are synonymous with comparative health comments.

Prompt:

You are an expert qualitative researcher analyzing YouTube comments about international health system experiences. Your task is to categorize comments into two categories.

Category 1: Informants

Definition: Informants are comments that provide comprehensive personal experiences that explicitly compare the health system (including medicine and public health) in the United States to that of at least one other country.

- **Criteria:**
 - Must include specific references to the U.S. healthcare system (terms like U.S., USA, America, or United States).
 - Must reference at least one other country or region with explicit details (e.g., naming the country and discussing specific aspects of its health system).
 - Must demonstrate in-depth knowledge of the U.S. and other countries' health systems, reflecting substantial detail and understanding.
 - General observations or vague anecdotes will not qualify, even if they mention both systems.

Category 2: Non-Informants

Definition: Non-Informants include comments that reflect general opinions, broad statements, or vague secondhand information without detailed comparative analysis.

- **Criteria:**
 - Comments that mention the U.S. but lack specific details about its healthcare system are classified as Non-Informants.
 - Comments discussing healthcare abroad without any reference to the U.S. healthcare system should be classified as Non-Informants.
 - Any general statements, hearsay, or broad claims lacking specific comparative details will be classified as Non-Informants.

Assessment Instructions:

Assume there are very few informants in the dataset. Carefully assess each comment to determine if it meets the stringent criteria for an informant. Be exceptionally strict in your

classification to avoid overestimating the number of informants. Only return "Informant" or "Non-Informant"; nothing else.

Only return "Informant" or "Non-Informant", nothing else.

Example Inputs and Outputs:

Comment 1: "In Germany, I had surgery, and the care was amazing compared to the U.S."

Comment 2: "My cousin in Canada said their healthcare was faster than in the U.S."

Category: Informant

Comment 5: "When I visited France, I had to visit a doctor, and it was much cheaper than back home in the U.S."

Category: Informant

Comment 3: "I heard that hospitals in Japan are very efficient, but I'm not sure how it compares to the U.S."

Category: Non-Informant

Comment 4: "Healthcare everywhere is broken!"

Category: Non-Informant

Comment 6: "A friend told me healthcare in Australia was expensive, but they didn't mention the U.S."

Category: Non-Informant

Appendix B. Cost Comparisons

Prompt:

You are an expert qualitative researcher analyzing YouTube comments about international health system experiences. Your task is to categorize comments based on whether they discuss healthcare costs. Use the following strict criteria:

Category 1: Cost

Definition: Comments that explicitly mention expenses related to health services. This includes direct costs, affordability, pricing, and financial implications of healthcare.

Keywords: Comments MUST include one or more of the following keywords or phrases (or their synonyms): "cost," "price," "pay," "affordability," "expense," "billing," "dollar," "out-of-pocket," "debt," "profit," "co-pay," "deductible". Also include comments that compare the cost of healthcare to other countries, stating which is more affordable or expensive.

Strictness: Be very strict in applying this category. Only include comments with explicit references to cost using the keywords above. If a comment *implies* cost but doesn't use the keywords, categorize it as "Other".

Category 2: Other

Definition: Comments that do not explicitly mention health costs as defined in Category 1.

Criteria: Comments that do not use the keywords defined for Category 1, even if they relate to healthcare.

Instructions:

1. Read each comment carefully.
2. Determine if the comment meets the strict criteria for Category 1 (Cost).
3. If the comment meets the strict criteria for Category 1, label it as "Cost".
4. If the comment does not meet the criteria for Category 1, label it as "Other".
5. Provide the category label ("Cost" or "Other") as your response.

Appendix C. Access Comparisons

Prompt:

You are an expert qualitative researcher analyzing YouTube comments about international health system experiences. Your task is to categorize comments based on whether they discuss access to healthcare services. Use the following strict criteria:

Category 1: Access

Definition: Comments that explicitly mention factors related to obtaining or using healthcare services. This includes availability of doctors, hospitals, appointments, wait times, geographic limitations, insurance coverage, and barriers to receiving care.

Keywords: Comments MUST include one or more of the following keywords or phrases (or their synonyms): "access," "available," "wait time," and "delay." Also include comments that compare access to health services in different countries.

Strictness: Be very strict in applying this category. Only include comments with explicit references to access using the keywords above.

Category 2: Other

Definition: Comments that do not explicitly mention access to healthcare as defined in Category 1.

Criteria: Comments that do not use the keywords defined for Category 1, even if they relate to healthcare.

Instructions:

1. Read each comment carefully.
2. Determine if the comment meets the strict criteria for Category 1 (Access).
3. If the comment meets the strict criteria for Category 1, label it as "Access".
4. If the comment does not meet the criteria for Category 1, label it as "Other".
5. **Provide only the category label ("Access" or "Other") as your response.**

Appendix D. Regional Mentions, Example of Canada

Prompt:

You are an expert qualitative researcher analyzing YouTube comments about international health system experiences. Your task is to categorize comments based on whether they discuss healthcare in Canada. Use the following strict criteria:

Category 1: Canada

Definition: Comments that explicitly mention Canada, specific Canadian territories, provinces, or cities.

Keywords: Comments MUST include one or more of the following keywords or phrases (or their synonyms): "Canada," "Canadian," "Ontario," "Quebec," "Yukon," "Toronto," "Montreal," "Vancouver," "Calgary," "Ottawa".

Category 2: Other

****Definition:**** Comments that do not explicitly mention Canada as defined in Category 1.

****Criteria:**** Comments that do not use the keywords defined for Category 1.

Instructions:

1. Read each comment carefully.
2. Determine if the comment meets the strict criteria for Category 1 (Canada).
3. If the comment meets the strict criteria for Category 1, label it as "Canada".
4. If the comment does not meet the criteria for Category 1, label it as "Other".
5. Provide the category label ("Canada" or "Other") as your response.