

# **Improving Patient Flows at the Suite 2100 Clinics of the UVA Health System**

(Technical Paper)

## **From Bailout to Booming Industry: How US Health Insurance Companies Ensured their Market**

(STS Paper)

A Thesis Prospectus Submitted to the  
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On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

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## **General research problem**

*How can healthcare in the United States become more accessible?*

In a 2019 National Health Interview Survey, 8.3 percent of respondents said they did not get needed medical care due to the cost (NCHS, 2019). About 13 percent of Americans do not have a regular place to go for medical care (Clarke et al., 2020). Cost, time, and availability are barriers for patients receiving adequate health services. Uninsured Americans face worse health outcomes compared to their insured counterparts (Dillman et al., 2014). Jeffery et al. (2001) found that insurance status was related to patient outcomes in treatment for depression. It is vital to increase access to healthcare to prevent poor patient outcomes and death.

## **Improving Patient Flows at the Suite 2100 Clinics of the UVA Health System**

*How may patient flow in the Suite 2100 Clinics of the UVA Health System be improved?*

Robert Riggs of the Systems department is the advisor for this Systems Engineering Capstone Project. The other team members are Maggie Cusack, Claire Dozier, Alex Schmid, Bryce Huffman, Noor Drissi, and Wei Wu. This research problem aims to increase patient throughput at the UVA clinics by optimizing doctor schedules, setting patient arrival times, and effectively using the spaces shared by the three clinics. Currently, the clinics are not making efficient use of the space. Around only 2-3% of patients at these clinics use the e-update system (online pre-registration). The check-in process spans multiple floors and the number of stations does not change with the completion of the e-update. Excess ambiguous signage creates noise and confuses patients. Late arrivals are still seen. All of these factors prevent utilizing physicians' or patients' time effectively thereby reducing the number of patients that can be seen. Using

rooms between specialties and directing patients are additional goals. The recent nursing shortage and improper use of the e-update are constraints.

Right now, the clinics can take down unnecessary signage. The clinics can also refuse to see late patients in effort to keep schedule. The e-update can be completely removed. Non-specific clinic research suggests the use of forecasting appointment time so patients can spend time elsewhere as opposed to waiting in the room (Montecinos et al., 2018). One local clinic found the way to decrease patient arrival time is to increase the appointment schedule interval size (Barghash & Saleet, 2018). These current recommendations do not cover improved signage, optimized use of shared spaces (as this clinic set up is fairly unique), increased use of e-update, a streamlined e-update, modeled patient flows for this clinic, experimental changes and their effects on the number of patients seen at this clinic. Increasing the appointment schedule interval size also decreases physician utilization, which makes this solution incomplete for the goals of the 2100 suite clinics.

The method for solving these issues will be creating a model for patient arrival and time in the systems based on the data that was collected this semester during the in-clinic observations. Changes to the system will be tried on the model before being tried in the clinic. After making experimental changes in the clinic, data will be collected again and compared to starting patient flows. At the end of the project, recommendations will be made to UVA Health on how to increase use of e-update, how to set patient arrival times, and how to direct patients through the system. This will allow the clinic to increase the number of patients that can be seen in a day while making more efficient use of

doctors' time. In the future, some recommendations could be tested and refined at different UVA clinic systems.

### **From Bailout to Booming Industry: How US Health Insurance Companies Ensured their Market Share**

*How do proponents of private insurance help U.S. Insurance Companies protect and increase their market share?*

Uninsured Americans face worse health outcomes compared to their insured counterparts (Dillman et al., 2014). Insurance status is related to patient outcomes in treatment for depression (Jeffery et al., 2001). Physicians' testimony can be influential in politics and public perceptions (Gerber et al., 2014). The McCarran-Ferguson Act exempts insurance companies from federal regulation. Proponents of the repealing it claim that the act has contributed to anticompetitive behavior (Joskow & McLaughlin, 1991). However, the effects of McCarran-Ferguson Act as it relates to auto-insurance and competition have been explained by market conditions rather than anticompetitive behavior (Joskow & McLaughlin, 1991).

In 2008, the financial crisis caused insurance premiums to dip. In 2010, the Affordable Care Act was passed with the intention of insuring more American citizens through public health insurance. Despite the increase of publicly insured Americans and the financial crisis of 2008, the private insurance industry has grown.

In 2019, private health insurance spending grew by 3.7 percent, around 1.1 trillion dollars (CMS, 2020).

The Federation of American Hospitals, a trade association, uses lobbying to advance its agenda (maintain private insurance). The FAH values “market-based solutions” when it comes to the healthcare system (2020). After the House Single Payer Hearing, the FAH stated “Medicare for All, a public option and Medicare Buy-in plans are ill-advised and unnecessary” (2019). Marc Siegel, American physician and Professor of Medicine, commented on the same hearing “For me and my patients, overpriced private insurance ridden with red tape would still be better” (2019). The Association of American Physicians and Surgeons, a professional society, also opposes public insurance programs. In a press release, it announced: “AAPS proposes repealing Medicare’s and ACA’s restrictions on free-market insurance and other financing arrangements for all who wish to work or receive care outside the system” (2019). In a House of Representatives hearing on bailout of the American International Group (AIG), a health insurance company, following the 2008 financial crisis, its former CEO said: “Suddenly a company with a trillion dollars of assets was reporting unrealized losses” (Sullivan, 2008).

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