

Exploring Discrepancies: Analyzing Electronic Medical Records Data Against
Direct Observations

(Technical Report)

Health Professionals, Elderly Americans, and Distrust During Covid-19 in the
United States

(Sociotechnical Research Paper)

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by

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General Research Problem

How can the healthcare experience of the elderly be improved?

As humans age, older adults are much more likely to contract illnesses and diseases. This makes the elderly all too familiar with the healthcare system. The outbreak of Covid-19 was something that no one, specifically the elderly, saw coming. They had to deal with isolation, protective measures, and the fear that was instilled in them. My sociotechnical research problem looks into how the elderly managed issues of trust when it came to information from healthcare professionals during that time. My capstone project, however, addresses how a particular clinic that deals mostly with geriatric patients can improve their patient flow. This helps with waiting times and when to schedule patients. Both issues relate to the elderly experience in the healthcare system, but on much different scales.

Improving Patient Flow: University Physicians Primary Care Clinic

How can patient flow for the University Physicians Primary Care Clinic (UPC) in the UVA Health System be improved?

Delivering high-quality healthcare to numerous patients simultaneously, while also dealing with risks of disease exposure as well as managing regulations, is a difficult feat for any healthcare institution. However, UVA Health is committed to putting the patient at the center of everything they do (UVA Health, 2023). That mission reigns true for their UPC clinic, located in Fontaine Research Park. Serving patients through various practices including primary care, rheumatology, and endocrinology, the UPC is working towards optimizing their patient experience. Their primary patient population consists of elderly patients and other patient groups that typically require additional time in the system, compared to the average patient. After

analyzing data collected through an electronic medical records system, the results should enable the UPC to give recommendations regarding how to change their current system in order to optimize the inflow of patients they receive.

Currently, the UPC clinic has a standardized method for receiving and seeing patients. Patients check in on the first floor of the medical building at reception and are directed towards the elevator to go to the third floor, where the Primary Care Clinic is located. They then exit the elevator and enter a door on their right, where they check in with the clinic receptionist and are given paperwork to complete prior to their appointment. Behind the scenes, nurses prepare the patient's room before their scheduled time and scan their badges to log into the computer program Epic, which houses the patients charts and records patient data. Once the room is prepped, the nurse will walk to the waiting room door and call out the patient's name. They will then direct the patient to the scale to record the patient's weight and height before leading the patient to their room. The patient's forms will then be checked and validated with the information in Epic; updates to allergies and medications are made in the charts. Patient's vitals are then taken by the nurse, including blood pressure and temperature. The nurse will then scan their badge to exit Epic and leave the patient's room. The doctor will then enter the patient's room, conduct the necessary tasks and tests, and then exit the room while giving the nurses any additional orders for vaccines or tests. The patient then exits their room and speaks with a separate receptionist by the examination rooms before leaving the clinic through the elevator in which they entered.

While their current process has been sufficient up to this point, there have been various difficulties in recent years regarding the accuracy of the Epic data, the length of patient appointments, and overall lack of communication within the patient experience. This has led to

difficulties with patient scheduling. Another issue the clinic has encountered is the staffing of nurses. There is currently a high demand for traveling nurses due to seasonal variations and sudden surges in patients. Furthermore, long term nurses are being paid less than traveling nurses (Odom-Forren, 2022). Therefore, healthcare professionals and nursing staff may be more willing to leave their clinics in search of better opportunities. Additionally, healthcare providers and nurses face high levels of stress and burnout from challenging work schedules and environments, contributing to staff turnover and shortages. All of these factors have implications for the UPC, as they are not only hoping to re-optimize their patient flow system, but will also have to simultaneously train a new staffing team to be onboard with these changes.

The ultimate goal of working with the University Physicians Primary Care Clinic is to provide them with a recommendation about how to best schedule their patients in order to improve the overall patient flow in the system. Currently, patients are waiting much longer than their scheduled appointment time and both 20 and 40 minute scheduled appointments are lasting roughly the same time. In order to achieve this, introductory meetings will take place to facilitate the team's familiarity with UPC processes, goals, and standards. Following this, team members will observe the UPC clinic in scheduled increments of two hours, noting when and where appointment milestones occur to create a small dataset used for the team's reference with the larger EMR dataset. Once the EMR dataset is understood and the necessary variables solidified, the team will begin modeling patient flow and observing pain points in the flow to make recommendations. These recommendations will again be simulated and eventually refined to conclude validated recommendations to assist the efficiency of UPC.

Health Professionals, Elderly Americans, and Distrust of Covid-19 Vaccines in the United States

In the US during the Covid-19 pandemic, how did social groups manage problems of trust among elderly Americans in expert health guidance?

The elderly make up the majority of the patients who attend the UPC, which is why I chose to research them for my sociotechnical problem. Debates regarding vaccines are nothing new. For example, people wrongly believed vaccines caused autism due to false claims about vaccine side effects, which was “considered a threat to global health before the outbreak of Covid-19” (Skafle et al., 2022). However, vaccine distrust reached a peak during Covid-19, especially among the elderly. The National Institute of Health describes vaccine distrust as caused by “doubts, distrust, and worries or fears concerning vaccine efficacy, protection, and safety.” Mathis (2022) found that the Northeast region of the US had the lowest overall number of unvaccinated older adults. A study looking at older adults’ decisions to get vaccines highlighted that “convenient and accessible opportunities for vaccination” as well as messages targeted to specific age groups are likely to increase vaccination uptake among older adults (Shapiro et al., 2022).

1. The Elderly

In 2021, the AARP studied vaccine distrust among older adults and its effect on Covid-19. It was found that black adults ages 50 and over are less likely to get all recommended vaccines than white or hispanic adults over 50 (McSpadden, 2021). Also, as the level of income and education increased, so did the likelihood of getting all recommended vaccinations. This likely has to do with a problem of access instead of distrust, but is important to take notice of regardless. Older adults were asked why they were unlikely to get the Covid-19 vaccine, and the

most common answers were the vaccine's side effects as well as concern with the vaccine's effectiveness.

2. SAGE (Strategic Advisory Group of Experts on Immunization)

Another participant includes groups that promote vaccines, like the Strategic Advisory Group of Experts on Immunization (SAGE). In a study of vaccine hesitancy, SAGE recommends the "3 C's" model of hesitancy: complacency, convenience, and confidence (MacDonald, 2015). Confidence is defined as the trust in the safety and effectiveness of vaccines. In the case of the Covid-19 vaccine, there was low confidence in it due to how quickly it was created.

3. Health Officials

Health officials play an important role in communicating public health information to the general public. During Covid-19, Anthony Fauci was the director of the National Institute of Allergy and Infectious Diseases. He claimed if vaccination levels are around 40-50%, it would take a very long time to reach herd immunity threshold; implying the best way to keep the majority of people safe is to vaccinate as many people as possible (Powell, 2020).

4. Alliance for Aging Research

The Alliance for Aging Research is an advocacy whose goal is to promote and advocate for the optimal quality of life for older adults and their families. On their website, they mention that "misinformation and disinformation" about Covid-19 vaccines have been contributing to the decline in public trust relating to the vaccines, which have now been proven to be safe and prevent illness (AAR, n.d.).

5. Ethnic Minority Groups

One study looked at particular reasons why minority groups had vaccine hesitancy when it came to the Covid-19 vaccination. There were concerns about anti-immigrant sentiments and systematic racism. For example, one person stated "we as latinos will not receive the same

quality of vaccine.” Another participant stated that they had concerns about “long-term effects and not sampling enough Pacific Islands, women, people of color, [and] those with health disparities” (Shearn, 2022).

6. Food and Drug Administration (FDA)

During the height of the pandemic, the FDA released an interview called *FDA Insights: Vaccines for Covid-19*. The purpose of this interview was to answer commonly asked questions about the vaccine. One of these questions was why the Covid-19 vaccine was so important. Dr. Marks answered this question with the response that vaccines help protect people for many months against the virus and ultimately, if enough people are vaccinated, “will provide herd immunity in the population” (FDA, 2020). By releasing information like this and answering common questions, people in the community, specifically the elderly, were able to hear health guidance directly.

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