Online Doctor Consultation

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Assignment #3

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Tutorial 03
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Problem

In the early stages of the Coronavirus pandemic, most clinics that provided medical consultation had temporarily closed due to the province-wide regulations. Some places are still closed and some only have over the phone consultation. Even with some of the medical centers opening up with restrictions, it is frustrating that there are no better options for consultation with better social distancing. The problem I will be exploring is, if there were an online solution, if so how should we design it. More specifically based on user research is there an optimal design for an online system family doctor consultation during the pandemic?

Methods

Surveys and Questionnaire (Ask)

I thought the method of surveying and questionnaires would be perfect for starting my user research as I can better understand what our users want in a design. This also gives me some freedom of asking questions that target the opinions and desires of the users. To get an unbiased database it would be optimal to survey a large diverse population, however in this case even with a small population, there is some intriguing data that can be explored. The participants in my survey were close friends and family members. They were chosen at random, with a sample size of 10 participants each with diverse backgrounds to prevent any bias. The survey was made with google forms with 9 questions and a link was sent to each participant. For every question I had the 'other' option for so I can include the special cases that I did not account for. The survey contains targeted questions that help narrow down design ideas, from which we can later develop or remove aspects based on the outcome of data. This method works great for setting up a foundational basis that we can build on later in the design process. The survey has specific questions that address the extent of the design and the aspects which the users find important in an optimal design. From the survey the responses can be generalized as the following, majority of the respondents wanted an online family doctor consultation system that can run on multiple platforms. With a user-base for log-in purposes, with all forms of communications available such as video, audio, and text. They would also like some sort of online shopping and payment system for either prescriptions or other medical needs. Also, the respondents do not want dedicated software and would rather use applicable communication software that already exists such as Zoom and MS Teams.

Responses:
https://docs.google.com/forms/d/1W7wE-FRnPhOJBLyMMND035y3QXApxLvPe2asIHlSWj8/viewanalytics

A Day in the Life (Look)

For this method, I researched the daily activities of a family doctor. This method helps to reveal unanticipated situations that may arise while the doctor performs their tasks. This would help us also explore design ideas that should support these unanticipated circumstances. I asked a relative that works as a full-time family doctor during the pandemic. Throughout the day he examines patients on an appointment basis, each patient comes in with a different concern. One of the main activities for him is to examine patients for common issues, for the examination he goes through a routine that requires physical contact with the patient. For his physical exams, he conducts a variety of tests which include but are not limited to vital signs (blood pressure readings, pulse rate, breathing rate, temperature, weight, height), vision acuity, and other body inspection (head, throat, ears, nose). After careful examination and considering the patient's explanation of their symptoms, he prescribes the best applicable medicine. In general, he says with a quick medical history check and current symptoms, he can tell if there needs to be further diagnosis of the issue. Otherwise in common cases, he prescribes analgesics medicine, which is pain relievers (Tylenol, Advil), or medicine the patient has already been taking. Thus eliminating a physical examination. Also one of his current activities is giving out test results for the Coronavirus as he is first informed about the results from AHS. He regularly tells patients over the phone to self-isolate/quarantine if they have any of the coronavirus symptoms. For the safety of his staff and business purposes, he advises people with those symptoms not to come to his clinic. This method showed that there is an issue with an online system, this is that it is not

possible for the doctor to accurately diagnose certain concerns that may require physical contact. However, I would still argue that there is still a vast number of patients that can receive consultation over an online system. Having access to medical history and previous experience of recognizing common symptoms a family doctor can easily diagnose common concerns of patients virtually over an online system. This will not only ease the problem of social distancing but also make the patients feel comfortable.

Error Analysis (Learn)

I wanted to learn about the liabilities of using an online system for a family doctor consultation. As such I chose the method of Error Analysis, as it is the best way to mitigate future failures. In this method, we list some of the things that can go wrong when we are using the online system. Exploring all the errors will help us optimize our design to prevent these errors from occurring.

1) Communication Problems
2) Usability and Human Error
3) Privacy and Security issues

An error that can occur is the accuracy of communicating, sometimes technology is not reliable when needed, so it would be difficult for both the doctor and the patient to communicate if there are network issues, non-optimized/updated software, and not having applicable hardware. Something that the online system would not be able to control is the type of user to use the service, which would pose errors as all users are not well-versed in tech, specifically the elderly. Another error is that the online system can not be used in all instances. In certain cases, doctors will not be able to examine the patient correctly as some routine tests require the patient to be near a doctor physically. Doctors would not be able to diagnose patients and require them to come for an in-person exam, which defeats the purpose of the online consultation system. From the first method, the consensus in the survey was that many of the respondents cared for their privacy and security. A major concern with online systems is how vulnerable privacy and security are, so if a design leaks personal information or violates any security concerns would be a big error in the design. The exposure of medical information would have doctors breaking patient confidentiality and also bring embarrassment to the patient. From the first method, we see that many of the users would like to use current remote communicates software already available and applicable to this case. All programs have some sort of vulnerability, so if the online design was to implement a current third party software the authentication of users and data transfers would solely rely on third-party software. This poses another problem, as in recent times these programs have gained a lot in popularity, and there have been mass hacker attacks on these programs. However, there is also positive from these big companies, as bugs and vulnerabilities are usually fixed very fast when compared to newly developed dedicated software. For instance, using Microsoft Teams would be reliable as Microsoft is a credible company.

Justifications

All three methods were chosen as a step by step process of answering the problem. I tried to get a general sense of what the users wanted in optimal design for an online doctor consultation system. This was done by first using a survey and questionnaire method for the patients to see what they wanted for their design. Followed by an activity analysis of a doctor using the A Day in the Life method to see what sort of activities the online consultation system should accommodate. Finally doing an error analysis to fine-tune some issues that may arise in the future. All three methods complement each other as each was used to further understand what an optimal design would be to solve our problem?

Persona

Name: Karen

Age: 45

Gender: Female

Occupation: Freelance Writer

Marital status: Married

Location: Outskirts of Calgary

TECHNOPHOBE — TECH WIZ

Other Traits:
Has health concerns that would be put her life at risk if she came in contact with Covid-19. Pneumonia, asthma.
Works from home.
Has Agoraphobia, does not want to leave her house.
Also takes care of elderly family members (parents).
Would rather social distance and use online solutions.

Context and obstacles faced:

Karen copes with uncertainty by spending time with her family and using the internet to keep busy. During quarantine, she has been working online from home and hase taking care of her

family.

Must take extra precautions for social distancing for the safety of herself and her family members. i.e Not going outside unless very important. Requires regularly scheduled prescription for her health.

How will he/she interact with your product/service?

Karen will log in and use the online consultation system to keep her family doctor updated on her condition and request for a new prescription for her health.

Questions he/she will ask:

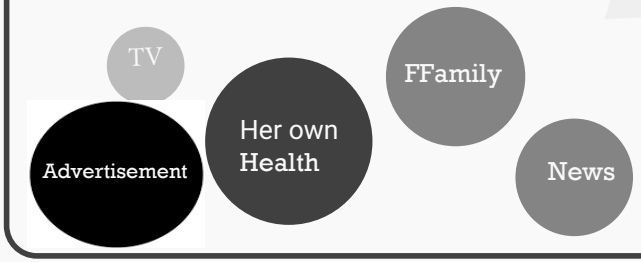
How do I book appointments?

What device can I use this online service on?

Will anyone else be able to see the online video?

Will I still be able to get my prescriptions online and pay for them?

Influences:



Situation: Goals, motivations, keywords

Karen's situation

Goals:

- Maintaining a healthy life.
- Keeping Family safe and healthy. Finding better solutions to overcome Covid-19.
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Motivations:

- Family and Health

Key words

- Health, Family, Online, Medicine, Doctor

Story

I work from home which is nice as I can spend more time with my family. I like to write for online blogs and articles which interest me.
I only focus on keeping myself and family safe during the pandemic and I do not want to risk catching the virus as it could be very deadly to me or my elderly family members. I have health issues that make me more vulnerable.
I still require medication for my health issue but I am conflicted about in-person doctor consultation as it put me and my family at risk, since I have to make regular visits to the clinic. I would much rather have an online solution as it would make life easier. My family doctor already has medical records and with a simple confirmation from his end, I would like to buy his prescriptions online and have them delivered to my house via courier. The only issue for me would be getting used to the system, but after a couple of tries I much rather use this than go for an in-person consultation.

Template of a persona that shows the six main elements you should include. Name, age, gender, tag line, experience and skills are placed on the left-hand side. The middle column focuses on the context to indicate how they would interact with a product or service. Finally, on the right-hand side some goals and concerns are shared, as well as a short scenario to indicate the persona's attitude.