1. What are the different ways that are being used to try to track exposure of a disease such as COVID-19/coronavirus?

Differing countries have approaches to how they are handling the corona virus outbreak. One of approaches being applications for phones that are used to track areas impacted by the virus, those who were in proximity, and those who identify themselves as positive. This is being used in countries like China, South Korea, and Israel. Other areas are using physical devices like rings (Garmin), or bracelets to track the baseline health of each user and tracking changes of health above their baselines. This helps determine if someone is potentially positive or not. More aggressive approaches are requiring results from the applications to be shown before users can enter public places and venues.

1. What are the strengths and weaknesses of each approach?

Using each approach, the strengths for the applications can help areas where there are outbreaks and warn people in the area to avoid the specific high risk spots. The applications can send text to users who have come in close contact and alert them that they may be potentially exposed. The ring strengths are beneficial if you are keeping track of your health. You can notice changes is your normal day to day activity and spot differences. These helps cut down access to infected areas and preventing spread if the user is positive.

The weakness to both is detrimental. For example, for applications that are run by the government or by private corporations, people can fake data or report outbreaks in areas on purpose. You also have problems where the data doesn’t consider protective equipment worn or social distancing. The government can force you to stay home or get tested when you could haven’t had your phone on you or been in an area altogether due to triangulation of cell towers being wonky. A weakness with any sort of wearable item can be who can afford to wear such devices? Are we using $300 rings, implanting chips into your civilians, or a simple bracelet to wear that’s low cost? Another weakness that affects both the approaches is the collection of private data like credit card transactions, private health care data, and more, just to track where someone may have been potentially exposed.

1. What are 2 ways you think could be done to improve on the approaches being used? Explain how your ways improve upon what is already being done.

The hardest part of any sort of approach is having it mandated. One problem that can be solved is that not many people are using the applications. To better improve this, you would have to get everyone signed up to a tracking application that doesn’t focus on contact but by data in an area. If people in a specific area gets identified as positive, it can be listed as an outbreak to the area. This improvement will increase user usage but at what cost to the “freedom of the people.”

The second improvement would need to be a way to implement what data is collected on the devices. If there is a guideline to let users know what data is collected, how long it is stored and what the data is being used for, then the privacy issue would be minimized. If a user reported they are positive, they should never be identified and pinged every phone that was around them. Unfortunately, I don’t know a way that can reduce user interaction with false reporting, unless the cases are confirmed by a doctor or a state health official.