CONTACT TRACING:

A Mixed blessing

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Abstract

This paper will be a scrutiny about the various ethical issues that arise with the use of data collected for contact tracing purposes. In public health, contact tracing is the process of identifying persons who may have met an infected person and subsequent collection of further data about these contacts. This paper will explore different contact tracing methods taken-up by local, state, and federal government along with the use by private industry. Additionally, this paper will dissect the advantages and disadvantages of contact tracing along with the privacy and ethical issues that follow it.

Keywords: contact tracing, case investigation, ethical issues, use of data, government, and private industries.

Covid-19 has had dramatic effects on health systems and societies throughout the world since the time it first came to light in late 2019. Contact tracing is a complex process that involves isolating and examining cases while quarantining and monitoring their close contacts. Contact tracing has played a vital role in limiting the spread of the Coronavirus and will remain important in protecting unvaccinated people. The success of COVID-19 contact tracing program depends on the ability to successfully reach individuals, elicit accurate information on contacts, and encourage full adherence to isolation and quarantine recommendations. For the most part, contact tracing is, if we gloss over the various data privacy and security issues which we will discuss later in this paper, considered a success.
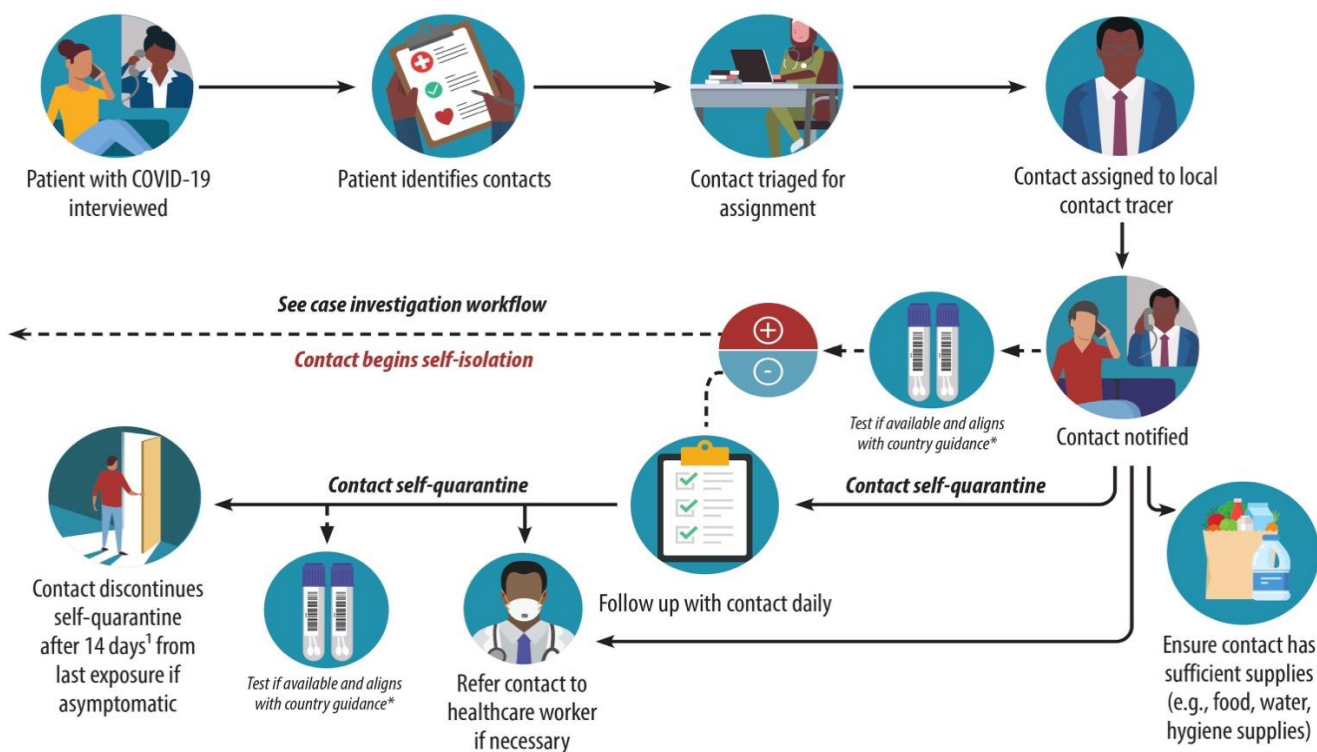
(CDC, 2020)

As we can see in the above figure, the process of contact tracing begins with Covid positive person being interviewed on phone. In the interview the patient will identify their close contacts, then the contact will be assigned to local contact tracer. The contact will be notified and encouraged to undergo testing and quarantine. The contact tracer will also ensure that the contact has enough supplies to last till the quarantine period is over. If the contact tests positive, they will be directed to the case investigation workflow. Even if the contact tests negative, they will be advised to undergo self-isolation of 14 days as a precaution.
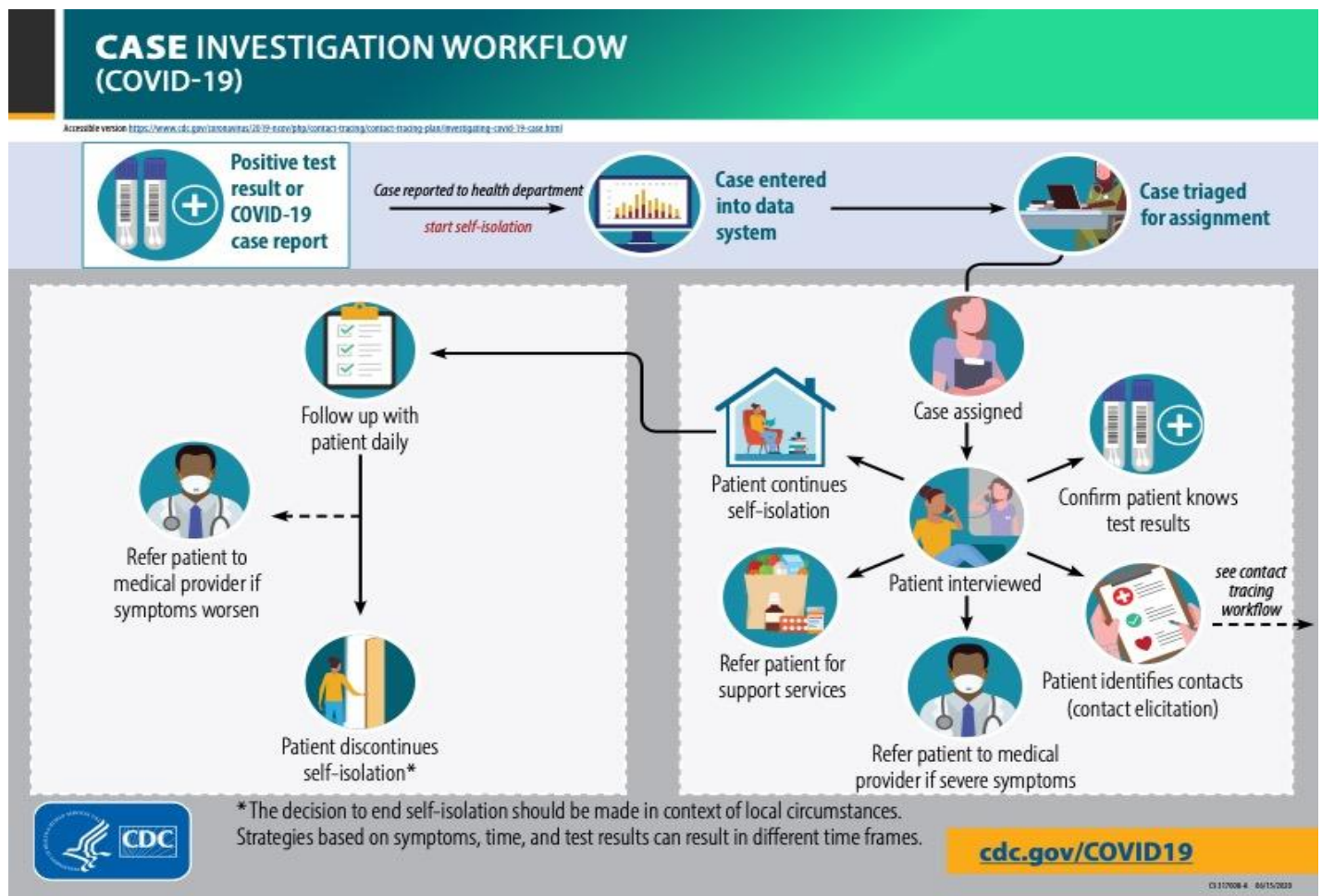
(CDC, 2020)

If we observe closely, contact-tracking workflow and case investigation workflow are almost similar and kind of interlinked between them.

This is the general protocol proposed by the government. But the structure of public health authority in each state influenced how contact tracing and case investigation programs are developed. "In states with strong "home rule" governance, contact tracing and case investigation were performed by local (municipal or county) health agencies using a combination of federal, state, and local resources. In jurisdictions with centralized governance, where the state or territorial health agency provides public health services at the local level, state public health staff performed case investigation and contact tracing or contracted the work to other entities. In states with shared or mixed systems, state health agencies conducted these activities in areas without local health departments, while areas with local health agencies provided the services directly with support from states, as needed. "(Ruebush, 2021)

Case investigation and contact tracing is part of the process of supporting patients and warning contacts of exposure in order to stop chains of transmission. (CDC, 2022)

All over the world, countries are taking different approaches for contact tracing. Like the above-mentioned method is the official protocol of the USA, "China uses an app called 'Alipay Health Code', which assigns a QR code to each user, which is color-coded red, amber, or green to indicate that person's quarantine status and thus their ability to move around. Singapore's TraceTogether app has been downloaded by about 25% of its population, much less than the 60% needed. This has led the country to introduce its SafeEntry system, which requires users to check in to public places using their national identity card or by scanning a QR code with their phone". (Morley, 2020)

Likewise, private industries like Apple and Google are implementing a method for contact tracing via a person's Mobile phone's Bluetooth. A complex concept but in simple words what it does is, it's a system automatically and autonomously logging all the people you've been in contact within your device in an encrypted code and if one of those people get Covid-positive, you'll get an alert saying you've been exposed and should quarantine. Both Apple and Google made significant changes, since announcing this system, pertaining to security reasons.

Stopping community transmission by quickly identifying positive cases and notifying their contacts, and advising them to stay home, self-monitor, and quarantine is the only possible way to make this pandemic end. For that to happen effective contact tracing measures are the need of the hour. The benefits of the contact tracing measures taken by different countries mentioned above are invaluable in saving lives of people.

However, there's a catch in this whole process. It is about the collection and usage of this data by various government and private industries.

To begin with, who'll be able to access the data? Is the app/process scientifically valid? Is this whole process compulsory or voluntary? Is the government being transparent about the situation in the country? What happens if someone doesn't want to share their data? Who is accountable for if their personal data gets stolen? Is this whole process time-bound? These are a few questions that need to be answered before any data is collected from people.

During these past two years, because of the mandatory lockdowns and stringent masking protocols, people are extremely vulnerable and sadly this is bringing out the worst out of them. Patient confidentiality should be the number one priority of the industries. Data Science engineers while developing these technologies should keep in mind that, data of the positive person is anonymized before sending an emergency text alert to everyone they were in close contact with. Additionally, people should be able to choose the levels of disclosure on their own. Consider this case for example, **"***In a few instances, officials released enough information to make people with* COVID-*19 publicly identifiable, leading to cases of doxing and online harassment. "Please don't spread information about my identity," one patient wrote on social media. "I'm so sorry to my friends and family that I've hurt, but more than the physical pain, it's been very difficult mentally."***"** (Kim, 2020). Authorities need to be strict with such online offenders to protect the emotional sanity of the patients. Because, when fighting with a deadly virus the last thing any person would want is someone invading your privacy and threatening to harm you physically.

Who has access to this data is another important aspect to consider. In this ever-evolving internet generation, it has become painfully simple to hack into secure servers/databases and

steal precious information. Are the persons processing the data are trustworthy professionals? To control the spread of the pandemic people were hired and put into important positions a lot easier than how it was done before the pandemic. There is a possibility that some of these people can get lured by the money offered and sell the data to hackers/stalkers/foreign agencies etc. The government and private industries need to make certain that even if the data gets stolen there is no long-standing damage done to individuals.

In the case of Apple and Google, them getting peoples information automatically is a matter of huge privacy concern. Recently both Apple and Google have announced that they would stop this process once the pandemic ends, which is a good start, but they also need to cautious about the following points. There should be a regulation stating that they can't access personal information, like credit card data and intimate information, which is stored in people's mobiles. A person's name, which should not be revealed to other people, and the places they travelled should only be the data accessed by Apple and Google. Apple and Google are not new to data breaches, so they should be wary of the data they are collecting and be mindful of the consequences if this data get into the wrong hands, like stalkers or foreign agencies.

Let us now apply the ethical theories we discussed in class with respect to the collection of data/information by the Government and private industries to be used for contact tracing.

In basic terms **Relativism** is a concept where there are no universal standards of right and wrong. It is a belief that there's no absolute truth, only the truths that a particular individual (**Subjective Relativism**) or culture (**Cultural Relativism**) happen to believe. If we apply this to what the government and private industries are doing, then they are morally right because from their standpoint they are just trying to mitigate the spread of coronavirus.

Ethical Egoism, in philosophy, is an ethical theory according to which moral decision making should be guided entirely by self-interest. An action is morally right if it helps a person with maximum long-term benefits. In this case, data science engineers who discovered he technologies, the government and private industries will all be applauded for the taxing work they put-in in trying to alleviate the Covid-19 virus. So, according to Ethical Egoism they are ethically correct.

Simply stated, in **Divine Command Theory**, an action is considered good and moral if it is in accordance with the will of God, and an action is immoral and wrong if it is against His will. In this theory The Holy Books are used for determining morality and thus, act as a moral and ethical guide. But there are several Holy Books and not a single book that address our current situation. There is nothing even remotely related to the Coronavirus pandemic that has crippled the world since the past two-and-half years. It is practically impossible to judge our issue based on the Divine Command Theory.

Kantianism, formulated by Immanuel Kant, has two formulations:

1. *Act only by that maxim by which you can, at the same time, will that it be a universal law'.* "In other words, when working out what you should do you must ask yourself 'would it be OK if everyone took this type of action?'" (Misslebrook, British Journal of General Practice, 2013). If we apply this formulation then it would mean, every federal government in the world would follow contact tracing procedures which will eventually lead to the end of the Covid-19 pandemic. So, according to this formulation, the government are ethically right.

2. *"'So act as to treat humanity, whether in your own person or in that of any other, in every case as an end in itself, never as a means only'. Other people should never be seen just as a means to an end." (*Misslebrook, British Journal of General Practice, 2013). If we apply this formulation the government is ethically wrong. Because it is merely using the public as a means to their end. If a person is forced by the government to share their information, even for the greater good, it means that the government is using that person to fulfill it's needs and must be judged as ethically wrong.

Act-Utilitarianism holds that, an action is good and moral if its results are more beneficial than harmful. All things considered, I truly believe that what the government and private industries are doing would bring a lot of control to the ongoing situation and would bring the world a lot of happiness, if followed meticulously by people, then harms. So, in my opinion they are ethically correct in what they are doing.

Rule-Utilitarianism states that, 'We ought to adopt moral rules which, if followed by everyone, will lead to the greatest increase of total happiness over all affected parties.' Just like in Kantianism, if everyone in the world performs contact tracing religiously, even though there might be some difficulties related to security and privacy, I honestly opine that what the government and private industries are doing will increase the overall happiness in the world. Therefore, they are ethically right.

According to the **Virtue Ethics,** "A right action is an action that a virtuous person, acting in character, would do in the same circumstances. A virtuous person is a person who possesses and lives out the virtues. The virtues are those character traits human beings need in order to flourish and be truly happy" (Quinn, 2015, p.90). The first and foremost virtue of any government is the order and safety of its citizens. So, the government is morally correct, because they are doing everything in their power to save its citizens from a deadly virus.

"**Social Contract Theory:** Morality consists in the set of rules, governing how people are to treat one another, that rational people will agree to accept, for their mutual benefit, on the condition that others follow those rules as well" (Quinn, 2015, p.83). As stated earlier, if everyone follows contact tracing without neglecting it, then the world will be a better place. So, if we apply Social Contact Theory, the government and private industries are morally correct.

Furthermore, Applications should be developed in such a way that they have in-built ethical-values and legal principles. I would suggest the data science engineer, developing the app, to develop it with certain limitations and constraints. Data science engineer must also include human-rights advocates and ethicists in the decision-making stage of the development. In my opinion, users should have a control over who can access their data, and an option to permanently delete all the data once the pandemic subsides. All these limitations should be inculcated into the technical design of the app.

To conclude, during these vulnerable times, privacy is something that should be guarded with utmost importance. Yes, contact tracing has been successful thus far in containing the spread of the coronavirus, but no one can disagree that the data collected in the process, if fallen in wrong hands, can wreak havoc in people's lives. Therefore, in my opinion, contact tracing, while saving many lives has also threatened many, is *a mixed blessing*.

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