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Abstract

The Cresthaven City Public Health Department (CCPHD) is working with Washington & Lee University student Jimmy Horvath to devise a vaccine distribution plan for Cresthaven City. Horvath and his colleagues face a challenging ethical dilemma, given a limited vaccine supply in the town would leave at least half of Cresthaven City unvaccinated. Using the Eight Key Questions Framework, Horvath’s plan considers the city’s demographics and the real-world impact on public health and equity. All in, Horvath and his colleagues effectively shed light on the difficult moral question everyone is asking: who receives the vaccines, and why?

Cresthaven City Covid-19 Vaccine Distribution Plan

Author: Jimmy Horvath

Introduction

The COVID-19 pandemic brought unprecedented challenges to communities worldwide, testing the resilience of healthcare systems, economies, and social structures. In the heart of this global crisis lies Cresthaven City, a diverse and bustling urban area known for its vibrant, essential workforce. Of the 500,000 Cresthaven City residents, 100,000 are elderly (65 years or older), 150,000 are Black, 125,000 are Hispanic, and only 250,000 can receive the COVID-19 vaccine (20%, 30, 25%, and 50%, respectively). We do not know how many essential workers live in Cresthaven City, although the number is high.

Many residents are sharing concerns about how vaccines will be distributed. The Cresthaven City Public Health Department (CCPHD) and I are responsible for vaccination distribution and recently received a shipment of vaccines sufficient to cover only 50% of the population (250,000). Some "Cresthaveners" contend vaccines should be allocated to elderly populations who face a significantly higher risk of severe outcomes from COVID-19. Others think priority should be given to essential laborers, who are crucial in caring for the sick and maintaining essential services that keep the city going. Given the prominent diversity level of Cresthaven City, many are wondering how the department will address the disparities in mortality rates, specifically among Black and Hispanic populations. As the general majority, they account for 55% of the population.

To complicate matters, recent surveys within the city have shown varying degrees of vaccine hesitancy across different demographic groups, further challenging CCPHD's efforts to allocate the vaccines effectively.

To recommend action properly and thoroughly to Cresthaven City, I must first analyze the situation using the Eight Key Questions Approach. Given the severity of the situation, all eight considerations must be applied. Fairness, outcomes, responsibilities, character, liberty, empathy, authority, and rights must be analyzed to provide a holistic opinion of vaccine distribution.

Outcomes

First and most importantly, the distribution plan must observe outcomes to solve the problem of vaccine shortages. Observing different outcomes based on different actions will effectively pin down a goal on which Cresthaven City can focus its efforts. Think of this like voting for the President of the United States. Before you cast your vote, imagine what the next four years will look like with both candidates. For instance, Democrats often support a more progressive tax structure, universal healthcare, and public education, while Republicans focus more on lowering taxes, deregulation of corporations, and closing borders. Both plans include different actions to support different goals, like the potential outcomes of Cresthaven City's vaccine distribution. In this case, the two separate goals are reducing mortality rates and halting the transmission of the virus.

Should Cresthaven City care more about minimizing fatalities, they would initially allocate vaccines to elderly residents. According to the Chinese Centre for Disease Control and Prevention, as of February 11, 2020, those aged 80+ had a 14.8% COVID-19 fatality rate. The rate for people in their 70s was 8%, and for those aged 60-69, it was 3.6%. The four age groups from 10-49 combined for a 2.3% mortality rate, seven times less than 70-year-olds alone, according to Statista.

On the other hand, perhaps Cresthaven City prioritizes stopping the spread of COVID-19. In this instance, first allocating the vaccine to essential workers would solve the problem. Given their roles on the front lines, essential workers often have higher exposure to the virus. Cresthaven City can mitigate workplace outbreaks by vaccinating these populations and reducing community transmission. Additionally, Cresthaven City is proverbially known for its vibrant, essential workforce, which other local cities and municipalities recognize. Perhaps those communities, too, vaccinate their essential workers to stop the spread, looking to Cresthaven as a shining beacon of their region. There are also many workers living in different towns who commute to work in Cresthaven City and vice versa. If the District of Columbia announced it was focusing on stopping the spread, the surrounding areas like Arlington and Potomac would fall like dominoes and prioritize their essential workers in vaccine distribution.

Is the outcome goal to lower mortality rates or lessen transmission?

Fairness

Now that Cresthaven City has goals to decide on, we must analyze the extent to which those goals are fair, especially to disproportionate communities. Fairness in Cresthaven City vaccine distribution involves equitable access based on demographics and risk factors. What is fairer: initially giving vaccines to elderly populations because they're most likely to die first without them or initially giving vaccines to essential workers because they're more likely to spread the vaccine to others and put more people at risk overall?

           Additionally, racial disparities are significant in fairness. As of July 30, 2020, Black or African American communities had 74 COVID-19 deaths per 100,000 people in the United States, according to The COVID Tracking Project. American Indian and Hispanic populations had 40 deaths each, while the majority populations, like Asians and Whites, had 31 and 30, respectively. That means Black communities are at more than double the risk of dying from coronavirus than White populations, according to Statista. This clearly is unfair to Black / African American and Hispanic populations, which comprise more than half of Cresthaven City's population.

           However, those same Black and Hispanic communities also have the leading and second-highest vaccine hesitancy percentages, at 35% and 30%, respectively. Only 20% of the White community is hesitant about the COVID-19 vaccine in Cresthaven City. Is it simply fair to give the vaccine to Black or Hispanic populations because they, or should vaccine hesitancy be involved in judging fairness? Perhaps educational programs for all communities, but especially Blacks and Hispanics, are vital in leveling the vaccine hesitancy playing field.

           This situation is like race-based affirmative action college admissions processes. Affirmative action addressed the underrepresentation of certain racial and ethnic groups in higher education institutions, particularly groups that have historically faced systemic barriers to educational opportunities (and that is putting it lightly). In comparison, vaccine distribution in Cresthaven City could mirror this process by providing more vaccines to essential workers who are predominantly from underrepresented racial and ethnic groups (Blacks and Hispanics). In medicinal history, these populations have particularly suffered from either a lack of treatment or unjust practices. Examples include but are not limited to, the Tuskegee and Guatemala Syphilis Studies, the story of Henrietta Lacks and her HELA cells, and even Stanley Milgram's Shock Experiment (awful to everyone).

           Thus, fairness is fundamental in observing outcomes for Cresthaven City.

Responsibilities

Outcomes and fairness are both external factors that contribute to the overall strategy. However, I cannot help but consider myself in this evaluation, and specifically, my responsibilities in acting swiftly and justly for the betterment of Cresthaven City.

Responsibilities include the duties and obligations that apply to the issue at hand. Mainly, minimization of harm and transparency and trust encompasses my duties and obligations as a vaccine distribution plan developer. While this is only one plan, we must create a cost-benefit analysis of various distribution strategies to minimize harm. Only then will we indeed be able to judge the situation holistically. Additionally, we must build and maintain trust with the community to distribute the vaccine properly. We must openly and honestly communicate about our plan, its rationale, and the criteria used for prioritization. Not only will this encourage vaccine uptake among hesitant populations, but it will foster trust in the CCPHD for years to come. When we handle the situation correctly, populations will inherently trust public health systems more, which is suitable for the next virus.

In my position, what duties and obligations encompass my responsibilities?

Character

There is a critical distinction to be made in responsibilities. Some responsibilities are purely ergonomic—I must make decisions to reach our goal efficiently—while others are about character.

           As a distribution planner, I am a white, twenty-one-year-old, educated, vaccinated male. I am fortunate to have privileges that others may not. Additionally, given racial disparities in most forms of government, I would assume a similar dynamic is occurring for the Cresthaven City Public Health Department, in that privileged individuals are in charge. What actions will help me and the CCPHD become our ideal selves, given that we are fortunate to have these privileges? Might we care more for those tranches of populations that have historically lacked access to various life-altering things, especially since my predecessors brutally failed to do so? Specifically, it is necessary to review my responsibilities to underrepresented populations, especially those that are not my own. Failing to do so would tarnish my reputation as an unbiased evaluator, labeling me a poor decision-maker and an even worse person.

While focusing wholeheartedly on helping underrepresented communities with spread and death rates, I would be remiss to omit my feelings regarding vaccine hesitancy, mainly by age group. In Cresthaven City, 40% of young adults (aged 19-29) are hesitant, citing a combination of skepticism about vaccine efficacy and low perceived risk of severe COVID-19 outcomes. I feel responsible for helping this group with their problem, perhaps even more than others. Merely donating more monetary efforts to educate this group would fail to uphold my responsibility, as it would be unfair towards those older groups who, too, are hesitant about the vaccine, albeit less.

On the contrary, using my voice to educate my population about getting the vaccine to stop the spread would solve both problems. Hopefully, it would reduce Cresthaven City's young adult vaccine hesitancy and not be unfair to other groups because adults and elderly residents would not care to hear my perspective. COVID experts and people their age could apply far better than a twenty-one-year-old college junior. That would show character.

Liberties & Rights

While this paper has been about maximizing vaccine distribution, as it is our goal, we must too respect the wishes of populations who refuse to become vaccinated. While it hurts the sheer economic safety of Cresthaven City, citizens have rights and liberties in this process, and we must respect them. Primarily, all citizens have the right to health. That is, all citizens must have access to receiving the vaccine if they so choose. This is tricky, given we can only treat 50% of the at-risk population. Secondly, citizens have HIPAA privacy rights, which protect their "medical records and other individually identifiable health information," according to the U.S. Department of Health and Human Services. It "applies to health plans, health care clearinghouses, and certain healthcare providers". This is undoubtedly a health plan. Furthermore, we must also understand that humans have the freedom of assembly and speech. This is also a slippery slope, given that New York City Hasidic Jews publicly assembled during the pandemic due to their race and were COVID-19 "superspreaders". We do not want this occurring in Cresthaven City, so we will try to mitigate it as best we can.

Authority

The congregation of Hasidic Jews in New York City during the pandemic spewed controversy throughout the state. Many New Yorkers argued that they should be forced to get the vaccine or wear masks. What those judging populations fail to understand is the Hasidic Jews were merely listening to their authorities, much like this plan must abide by authorities. Authorities include, but are not limited to, city ordinances and state and federal regulations governing vaccine distributions. The two health organizations that govern our oversight are the Center for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA). However, we must also realize that the CCPHD only has authority over Cresthaven City. They do not control what occurs outside of the city's borders, which can harm Cresthaven City.

Empathy

           Finally, if we are to give a holistic strategy of implementing a vaccine plan for Cresthaven City, we must account for empathy. We must ask ourselves, how would we respond if we cared deeply about everyone involved? Empathy can be dangerous, given we can fall accustomed to personal biases with specific groups. In empathy, we must portray cultural sensitivity and support for vulnerable populations, recognize frontline workers for their efforts, and especially support those impacted by COVID-19. While this is a practical plan for mitigating the virus, we must also be unwavering in our support for the unexpected, when people are infected with COVID-19. This hardship may come through illness, loss of loved ones, or even economic hardship. Empathy involves providing support services like access to healthcare services, grief counseling, and perhaps economic help.

Recommendation

           The Eight Key Question Strategy enables agents to ask open questions that invite more information when making ethical choices. It is designed to disrupt and interrogate quick "biased" intuitions through questions, reflection, and critical thinking at the decision point. After viewing outcomes, fairness, responsibilities, character, liberty, rights, authority, and empathy, The Cresthaven City Public Health Department will allocate the vaccine first to elderly residents, who are at the highest risk of severe outcomes from COVID-19. We aim to lower the mortality rate directly by prioritizing vaccination for older age groups. Beyond this straightforward reason, here are some others, all outcome related.

First, elderly residents have the lowest vaccine hesitancy out of every demographic, not just out of the age groups. Sure, educating populations and lowering vaccine hesitancy is essential, but it is not the most crucial action to complete right now. Targeting the group who needs the vaccine the most given their mortality rates without it, and having that same group be the least hesitant to receive the treatment is a recipe for efficient success. Also, prioritizing preventing deaths rather than reducing virus transmission is a practical idea. If Cresthaven City only has received enough vaccines to vaccinate half of their at-risk populations, there definitely will not be enough vaccines initially available to make a meaningful dent in contagion, according to the New York Times.

Sure, supplying essential workers with the vaccine would benefit the rest of the population directly. However, vaccinating older adults indirectly causes change. It, too, creates a positive externality; it is suitable for the commoner. In general, older folks who need medical care have far more complex conditions and higher levels of healthcare needs than the average adult. Thus, reducing hospitalizations ensures that healthcare facilities can treat other patients and maintain essential services. In Layman's terms, elderly populations who are protected from coronavirus provide more relief to healthcare systems than other age groups who may be vaccinated.

Others will argue that giving elderly populations the vaccine first will ultimately be ineffective because they have less life to live. This way of thinking is wrong for two reasons. First, the focus of vaccine distribution is not solely based on extending life. Instead, it is about preventing premature death and reducing the taxing disease burden. In a crunched time, needing a solution, focusing on years left to live is straying away from the main idea that we must limit deaths quickly. Secondly, we must also focus not on quantity of life, but on quality of life. For elderly populations, this is paramount. It also relieves adults and younger populations that if ever in a pandemic again many years from now, the elderly populations will be taken care of, and thus, they will have more trust in the health care system.

Additionally, assuming that giving vaccines to one group or the other only targets either saving lives or stopping the spread is short thinking. Protecting elderly communities effectively works at both goals, surprisingly at preventing the spread of coronavirus. Elderly individuals often live in close contact with other family members. Vaccinating elderly folk can halt transmission in households and nursing homes, which seemed to be a huge problem, especially in my home state of New York.

In terms of fairness, adults and young populations will consider this unfair. However, to balance out fairness, targeted educational efforts at adults will lower vaccine hesitancy. If more adults believe in the vaccine's efficacy, their children, the young adults, are more likely to believe the vaccine works and receive it. Equitably balancing legitimate interests is complex. To make the process more equitable, targeting Black and Hispanic elderly folk is crucial. We would hit two birds with one stone: giving vaccines to those who are at the most risk, and who are also members of underrepresented populations. However, as vaccines develop, Black community hesitancy will drop, given that the hesitancy is primarily attributed to concerns of vaccine development speed. Thus, perhaps just initially, it is better to give it to any elderly folk willing to take it, no matter their race.

Should we stop death or the spread? Why not both? Here is to safety, prosperity, and hope in Cresthaven City for years.

Sincerely,

Jimmy Horvath