


VACCINATION LOTTERY


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Covid-19 is a virus that has left a trail of devastation around the world affecting both young and old.

Covid-19 spreads through direct contact or when people are at close proximity to each other. The individuals form a network where the nodes represent individuals and the interactions between individuals are represented by links.



Superspreaders are individuals with a lot of connections. They are responsible for spreading the virus to a lot of people


Do you want to protect your loved ones from covid-19?




Vaccination is so far the only pharmaceutical measure that countries have used to curb the spread of Covid-19. Even with vaccination, covid-19 is still a huge threat to the health system.

How then should we vaccinate?


- Complex networks can be used to identify individuals to vaccinate
- By using networks the effects of random and targeted vaccination can be studied



Network of friends





Vaccinating superspreaders



Random vaccination

- We want to vaccinate less people but also have less infections

Let's use the network structure to vaccinate and get maximum benefits.



In Eswatini communities, many people were (and still are) hesitant to get vaccinated for the COVID-19 pandemic. There are several reasons behind that. In Manzini church/healing community in Swaziland, some members believe that vaccines are meant to kill people and that if you pray hard, you will not get sick. Such myths and misinformation need(ed) to be dispelled. Motivated by her Master's research project on "Epidemics on Networks", **Thandiwe Dlamini** designed a science communication project - **Vaccination Lottery**. The project aimed to create awareness and educate young people (18-30 years old) in the Manzini community about the COVID-19 vaccination strategies. She delivered her activity during the church service slot that she requested. The associated live presentation was followed by a Q & A discussion. The presentation was delivered in siSwati and English and it was attended by 70 people (including adults who requested to join the session). During her presentation, Thandiwe enlightened the audience about COVID-19 and gave them insights into how Mathematical Models (e.g., Complex Networks) could be used to decide who to vaccinate during an epidemic and why it was important that the specific individual should be vaccinated.

Thandiwe pointed out that involving/engaging the audience right from the project planning stage created excitement amongst them (audience) because they could see how their interactions and data input forms social networks. They could also see how mathematics came into play to determine who should get vaccinated. Furthermore, the audience's involvement early in the project helped her understand their background, perspectives and beliefs about vaccines more and created trust. The impact of her project led people to change their perspectives about vaccination, appreciate the use of mathematics and her effort on giving back to her community after returning from AIMS South Africa. She learnt that as a science communicator, one needs to have a robust monitoring and evaluation plan, think on one's feet and have a backup plan during the delivery of an activity. In her case, electricity was unstable to use a projector. Thus, she had printed posters and flipchart paper to use.



Thandiwe Dlamini delivering her science communication project.

She is currently a Mathematics Educator at Mbuluzi High School in Swaziland. Her project enabled her to recognise that Mathematics is for everybody and can be communicated using African vernacular languages. It is up to scientists to make it accessible to all people. The project helped her improve her public speaking skills and inspired her to share her scientific research more with her colleagues and the people in her community.