

# Assessment 1

## Using Secondary Data

### EDTC 803

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Vaccines and vaccinations – the solution many of our problems? Maybe not if one is to follow the news. Disneyland, in Orange County, California, was the infection transmission site that began an outbreak that spanned several states and resulted in 125 confirmed cases of measles (Zipprich et al., 2015). More recently, measles outbreaks in Minnesota are being reported (Jacqueline Howard, 2017). In addition to the lack of vaccination leading to the spread of certain diseases, there are times when vaccination isn't 100% effective. Merck & Co., Inc.'s M-M-R® vaccine has documented seroconversion rate of close to 100% for each component in young children (Seroconversion rates.)

Incoming doctoral student at New Jersey City University, Mr. Douglas J. Koch, discovers he has no titer against measles, mumps, and rubella (personal communication) and can't start school until he has proof of vaccination as per university (Health and wellness center.) and state requirements (New jersey state vaccine requirements.). Without proper protection, a chance encounter with an infected person could have led to another outbreak of measles in New Jersey, Pennsylvania, and Puerto Rico. Center for Disease Control and Prevention defines community immunity as:

A situation in which a sufficient proportion of a population is immune to an infectious disease (through vaccination and/or prior illness) to make its spread from person to person unlikely. Even individuals not vaccinated (such as newborns and those with chronic illnesses) are offered some protection because the disease has little opportunity to spread within the community. Also known as herd immunity (Vaccine glossary of terms.)

The two outbreaks discussed earlier were made possible due, in part, to families opting out of standard vaccinations. There are different reasons people choose not to be vaccinated ranging from religious and cultural reasons to weakened immune systems to allergies to components of the vaccine.

## Approach

The purpose of this proposed interactive museum exhibit is to provide visitors with a better understanding of the role vaccination plays in the protection of themselves, their families, and their communities. Building on the physical, personal, and sociocultural contexts described by Falk and Storksdieck (2005) and the story, audience, and approach process described by Liza Reich Rawson, Head of Exhibition Development & Design at the Liberty Science Museum in Newark, N.J. (personal communication, July 21, 2017), I propose an interactive museum experience that introduces visitors to a fictional community that is exposed to an outbreak of a potentially deadly virus.

For the physical / story aspect of the experience, visitors will pass by a series of communications (figure 1(a)) documenting the this history of Virus X, a fictional virus that was first reported a little over 100 years ago. Contracting Virus leads to Disease X. Outbreaks of the virus caused widespread illness and even death. For those infected, approximately 30% died and of those that survived, 10% had permanent paralysis in their lower extremities. Mock newspaper reports, pictures of patients at home and in hospitals, and other mock artifacts will add to the experience. The story will continue with the creation of a vaccine against Virus X. Upon the implementation of mass immunization against Virus X, annual cases dropped to below twenty cases a year. Recently, cases have been reported at a rapidly increasing rate, bringing it close to epidemic proportions in certain areas of the country.

The audience experiences the museum-wide exhibit on both a personal and group level and it begins at the admissions counter. Upon paying for admission, the visitors receive a wrist band (figure 1(b)) that has room for a vaccination stamp, as well as three LED lights, one green, one red, and one blue indicating the individual health, active infection, and death respectively.

The bands are fitted with radio frequency identification (RFID) sensors that will allow for the tracking of their movement and proximity to others.

The social approach to the exhibit starts when the visitors decide whether or not to be vaccinated at the doctor clinic located just outside the admissions booth. They must draw upon beliefs and understanding about Virus X and Disease X they developed while entering the museum. If they opt to be vaccinated, their wristbands will be stamped. However; they won't know if the immunization provided immunity or not, as in real life.

The exhibit is essentially a game that takes place across the entire museum. In the game, an 'infected' employee periodically walks through the museum resulting in an outbreak. The employees wear a wristband with a red dot. As they come in close proximity to unprotected guests, the indicators on their bands will go from green to red. Simulated doctors and/or public health officials will be on hand to discuss why they may have been stricken with Disease X, explaining how the contagion is spread and to provide basic information on immunity. After a predetermined amount of time, the patient either recovers, as indicated by the red dot turning off and the green one turning back on, or dies, as indicated by a blue dot. Again, doctors and/or public health officials will be available to answer questions.

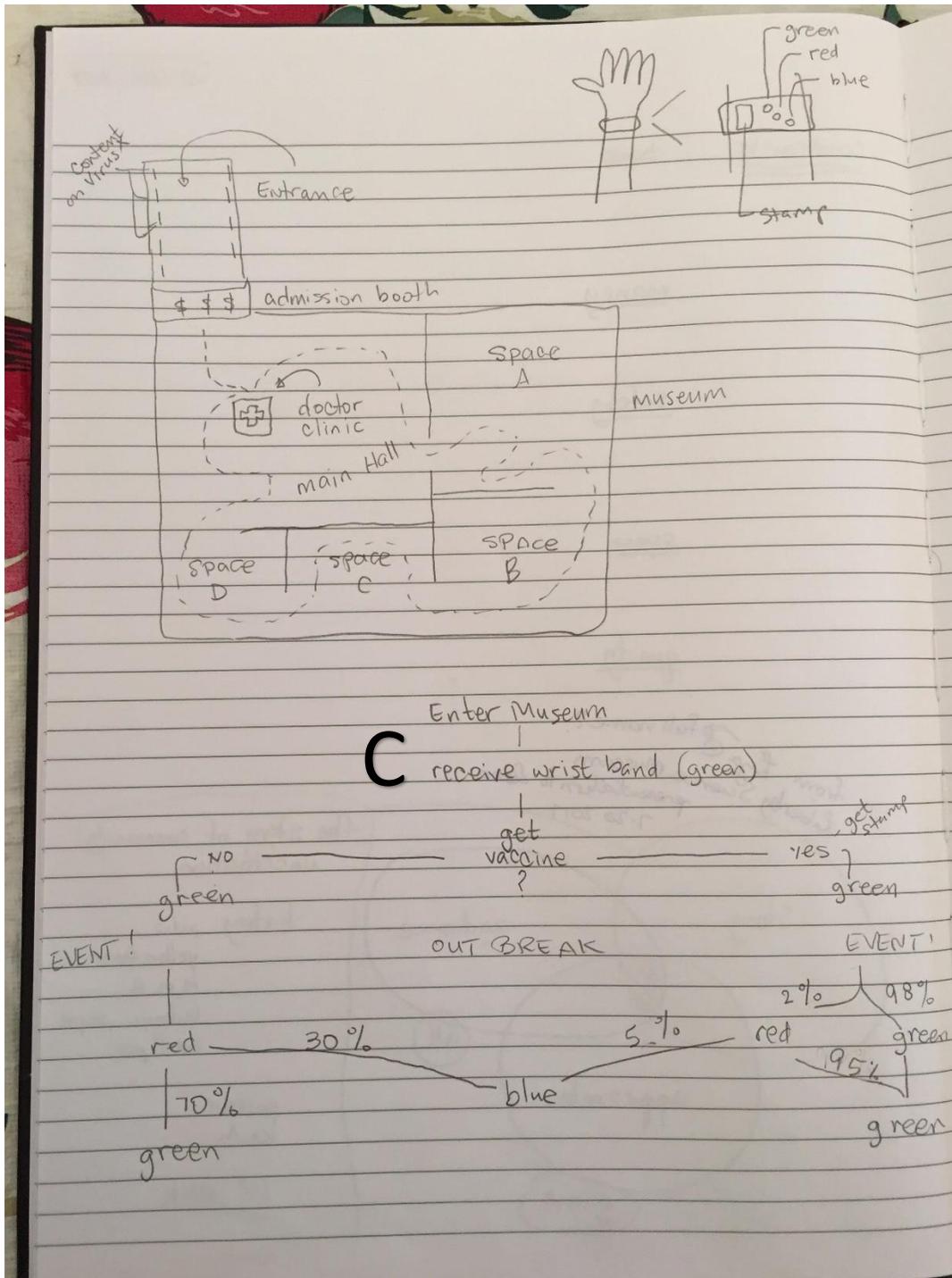
### **Outcomes**

A few of the lessons learned from this exhibit include the fact that actions such as immunization may have immediate consequences such as protection from disease. However; the process is not foolproof. Attendees should also walk away with the understanding that, through mass immunization, protection exists beyond the individual and that small actions taken by many have the ability to effect a whole community.

Assessment may be performed by informal observation within the museum, informal interviews with visitors as they leave, and surveys given to small visiting groups. It is also possible that a follow up survey could be given to attendees after a few months to see if their attitudes about vaccination has changed.

### **Future Directions**

Looking beyond the exhibit at this museum, it is possible to take this experience on the road as it requires little more than displays, a tracking system, and wrist bands. As the exhibit materials are relatively low in cost and the wristbands are reusable, the overall experience could be duplicated for use by multiple museums at a particular time. Beyond the museum setting, a scaled down version could be adapted and implemented in settings such as colleges, universities, and public schools.



(figure 1. indicating (a) the layout of the museum, (b) a representation of the wristband, and (c) flow diagram / decision tree outlining the process by which visitors are protected, get sick, and/or die.)

## References

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