A Curious Case of the Measles

The Physical and Digital Spread of Measles

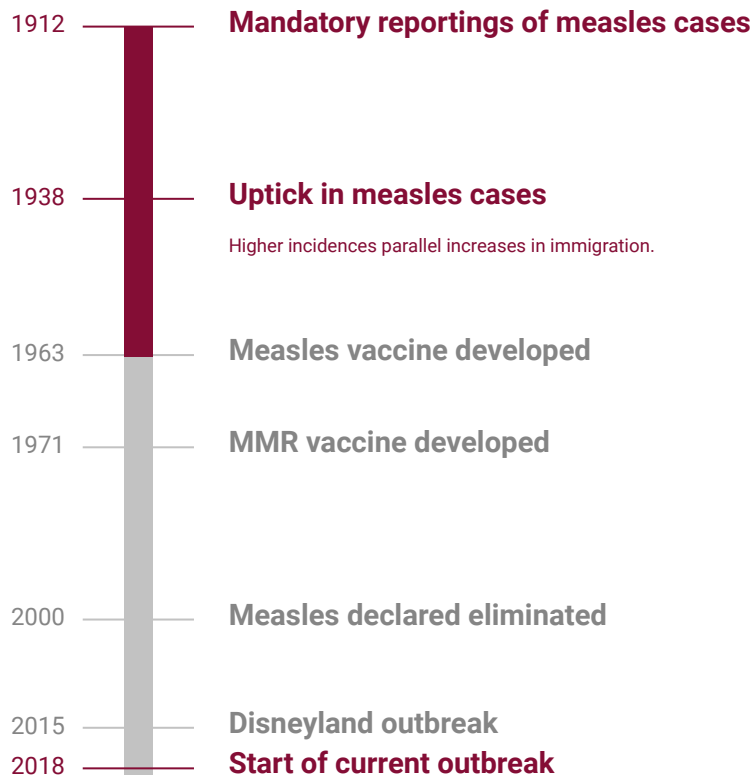Jessica Eisemann, Erin Harned, Kendall Loh, and Sanjna Shenoy

Motivation

- In light of the current outbreak, we wanted to explore why measles may be returning. We did this by:
  - Mapping the disease's historical trajectory;
  - Identifying locations where it has been most common alongside key demographics;
  - Highlighting different points of view on vaccination since lowered herd immunity is credited with the disease spread; and
  - Focusing on New York City schools to see if the City's Measles Mandate appropriately identified the areas at highest risk of disease transmission.

RISK FACTORS

Travel to a place where measles is endemic

Contact with someone who has measles

Not receiving a measles vaccine (MMR)

Visitors from areas where measles is occurring

Website

- Orient the viewer first to the history of the measles in the United States;
- Bring the viewer up to speed on the current outbreak;
- Narrow their focus to the state of New York; and
- Identify schools at risk of being a location where measles may spread within New York City area schools.

1912	**Mandatory reportings of measles cases**
1938	**Uptick in measles cases**
	Higher incidences parallel increases in immigration.
1963	Measles vaccine developed
1971	MMR vaccine developed
2000	Measles declared eliminated
2015	Disneyland outbreak
2018	**Start of current outbreak**

Data Sources

- Center for Disease Control's National Notifiable Disease Surveillance System
- Center for Disease Control's Measles, Mumps, and Rubella (MMR) Immunization Coverage
- State Department of Health websites (California, New York, Oregon, and Washington)
- Department of Agriculture Economic Research Service
- Google
- Twitter Search API
- New York State Department of Health School Immunization Survey

How infectious is measles?   One person can infect 12-18 susceptible people