Designing a Visual Dashboard to Make Public Health Data Accessible for Health Departments

APHA 2017 Annual Meeting
November 2017
Atlanta, GA

Betty Bekemeier, PhD, MPH, RN, FAAN
Principle Investigator, PHAST
University of Washington

Funded by
RWJF #73270

PHAST
Public Health Activities & Services Tracking

Problem

Inefficient Public Health information systems

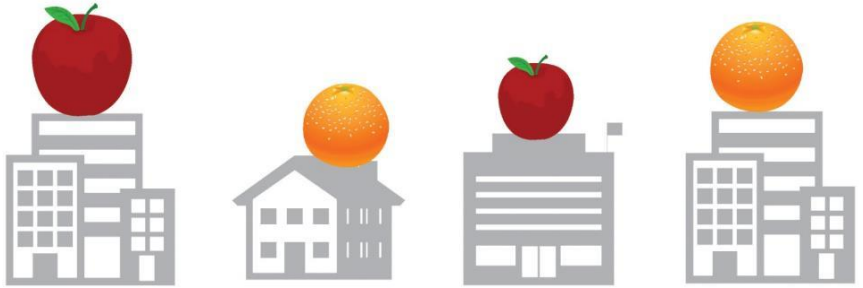
Nonstandard data of variable quality

Lack of LHD resources for using data

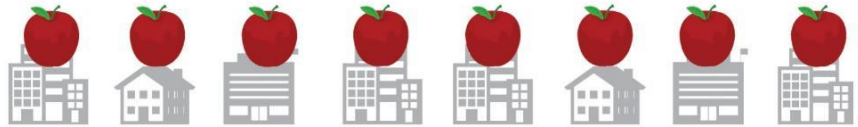
- Cost
- **Framework for using and understanding data for decision making**

PHAST
Public Health Activities & Services Tracking

Problem



measure their activities & services differently

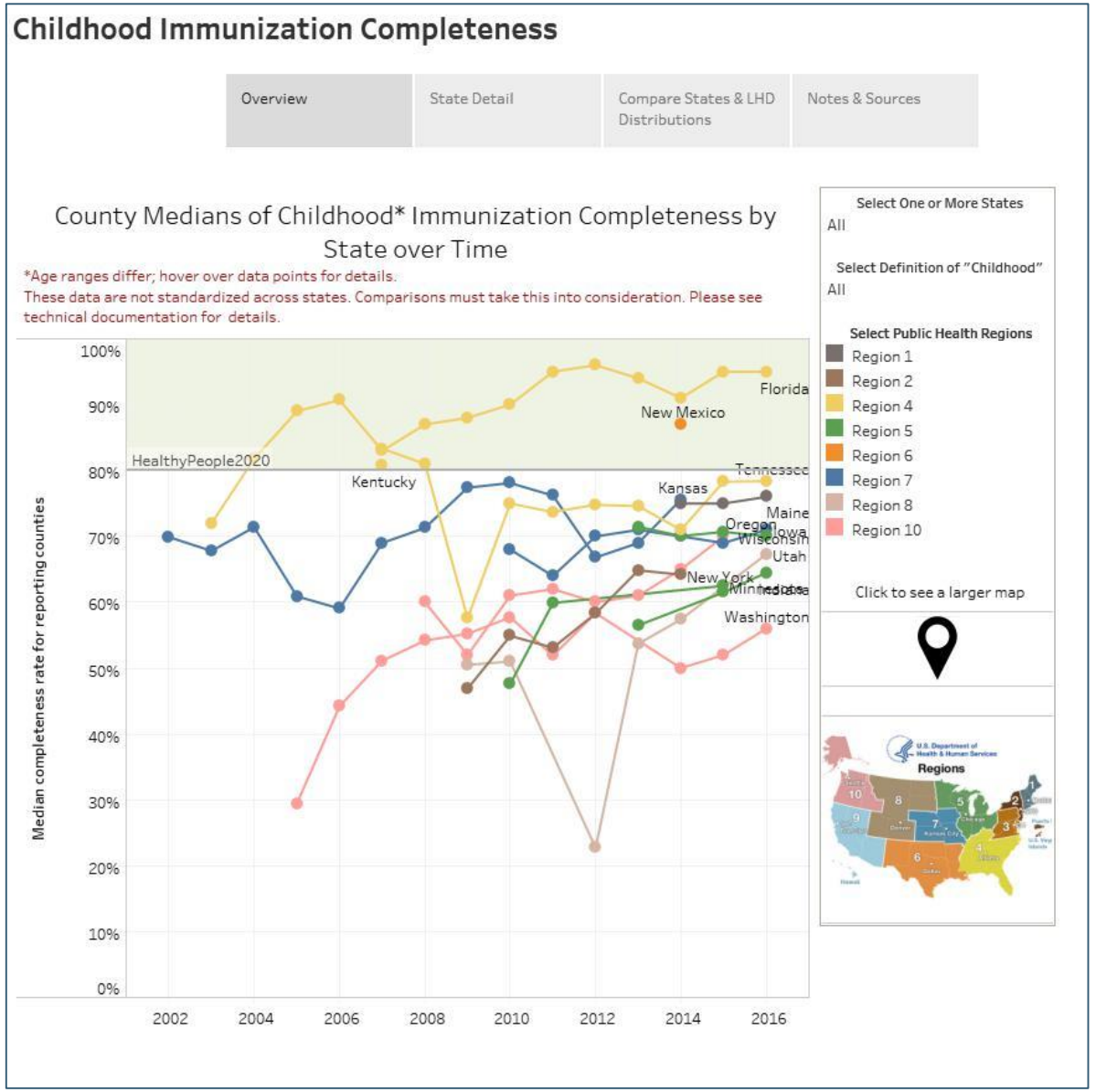


but need standardized, comparable data for

PHAST
Public Health Activities & Services Tracking

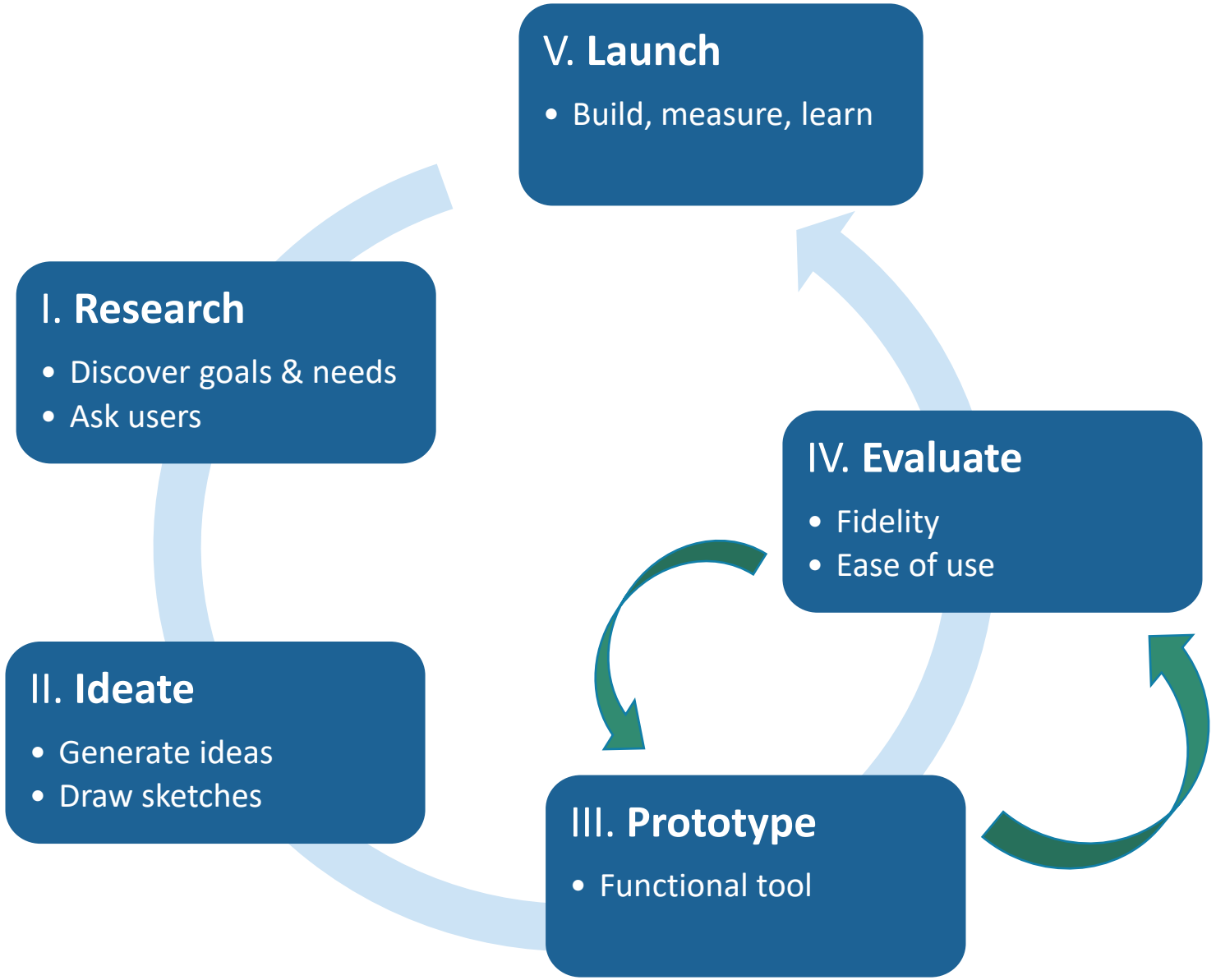
Part of the Solution

A dashboard that supports access to and understanding of data that can be compared across jurisdictions



Method

User-Centered Design



source: http://lukaseiermann.com/rex.html#Process

PHAST
Public Health Activities & Services Tracking

I. Research

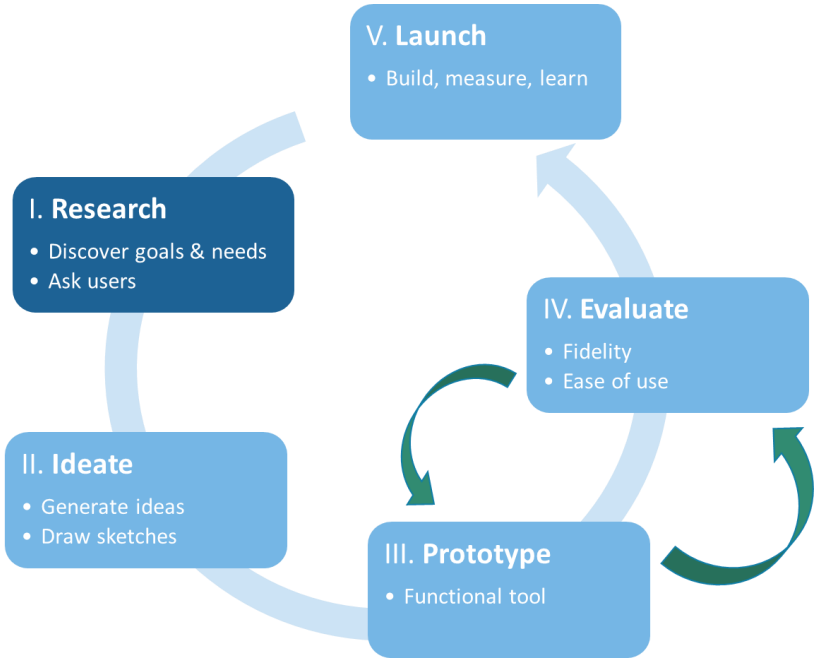
Discover Goals and Needs: Ask Users

45 minute phone interview with 14 public health practitioners

Qualitative analysis

Preferences specific to visualization features

- Simple
- Easily understandable for non-technical audience
- Comparison/trends over time
- Ability to “drill down” into details
- Mapping
- Infographic: short summary of information
- Moving into adapting more interactive visualizations



PHAST
Public Health Activities & Services Tracking

I. Research

Discover Goals and Needs: Ask Users

Purpose of Visualization

Understanding

- Understanding community health needs given limited resources
- Produce reports, use screenshots
- Program planning, evaluation, quality improvement

Communication

- Quickly create compelling argument for stakeholder/decision-makers
- Justifying funding

PHAST
Public Health Activities & Services Tracking

PHAST Measures: Core Activities and Services

Chronic Disease Prevention

Communicable Disease Control

Environmental Health Protection

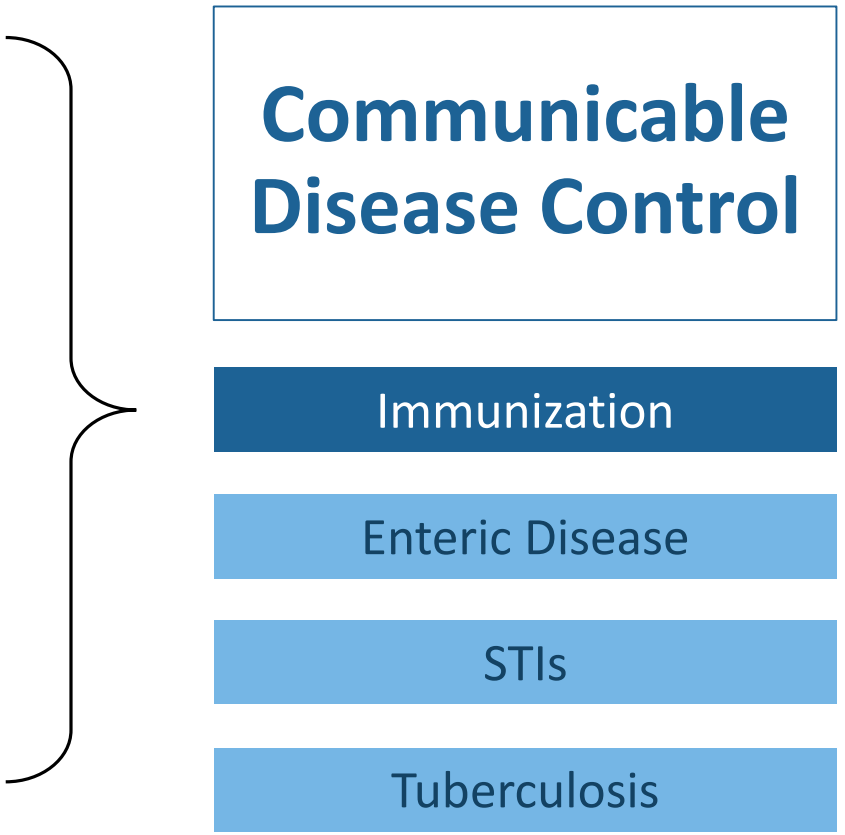
PHAST
Public Health Activities & Services Tracking

PHAST Measures: Drill Down

Childhood immunization completeness (community)

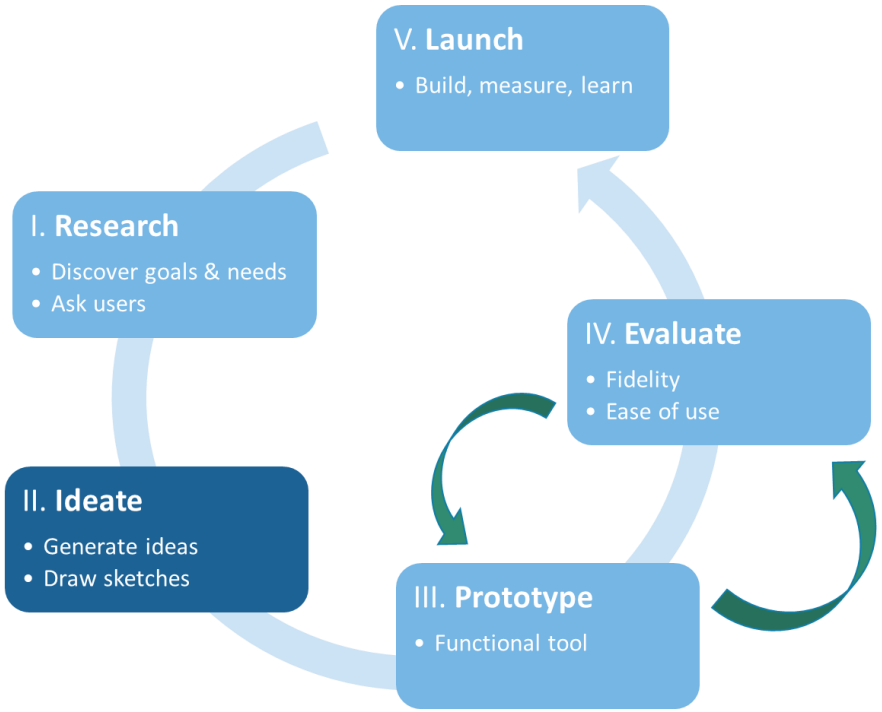
Childhood immunizations administered by agency (agency)

Confirmed vaccine-preventable disease cases (community)



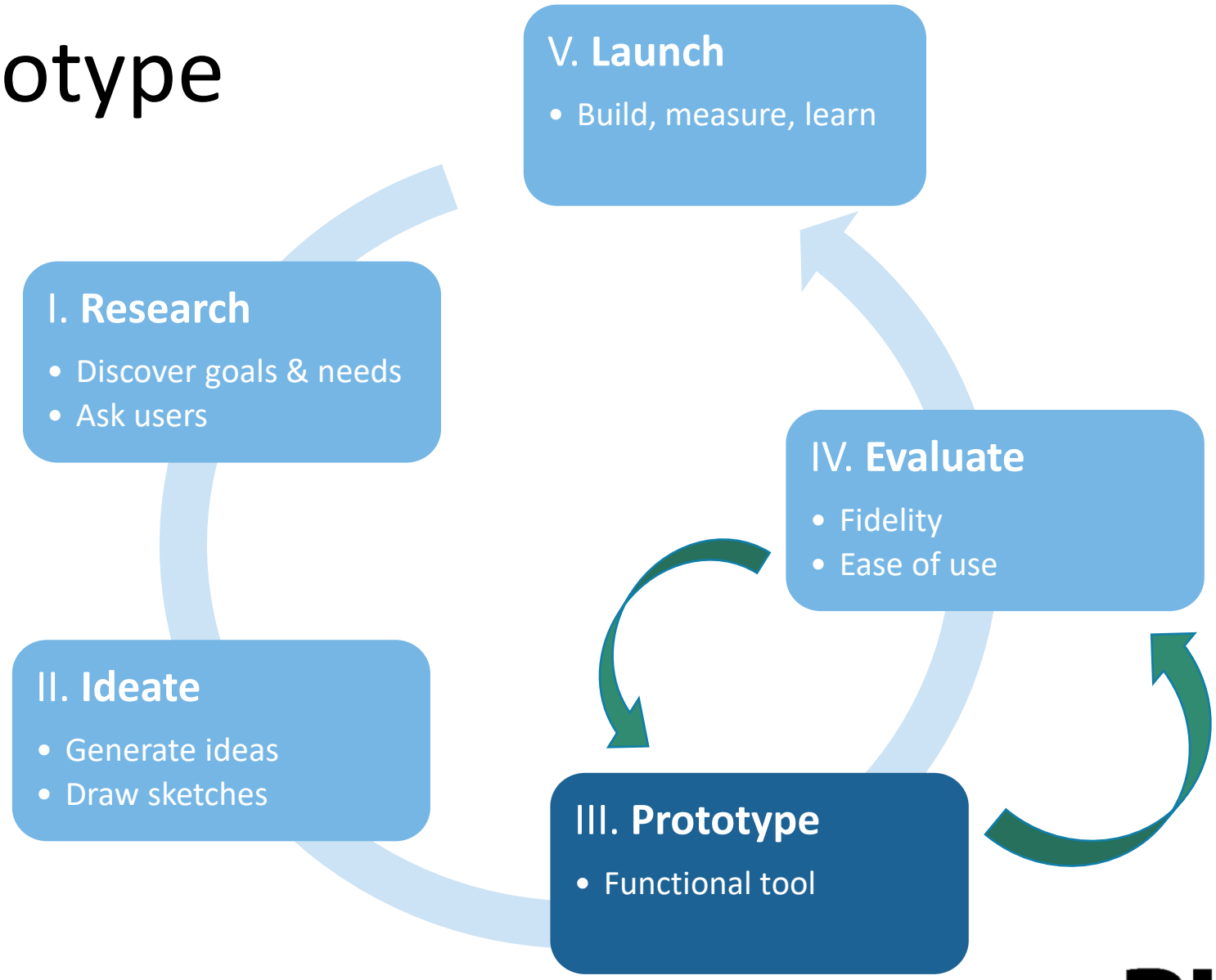
PHAST
Public Health Activities & Services Tracking

II. Ideate



PHAST
Public Health Activities & Services Tracking

III. Prototype

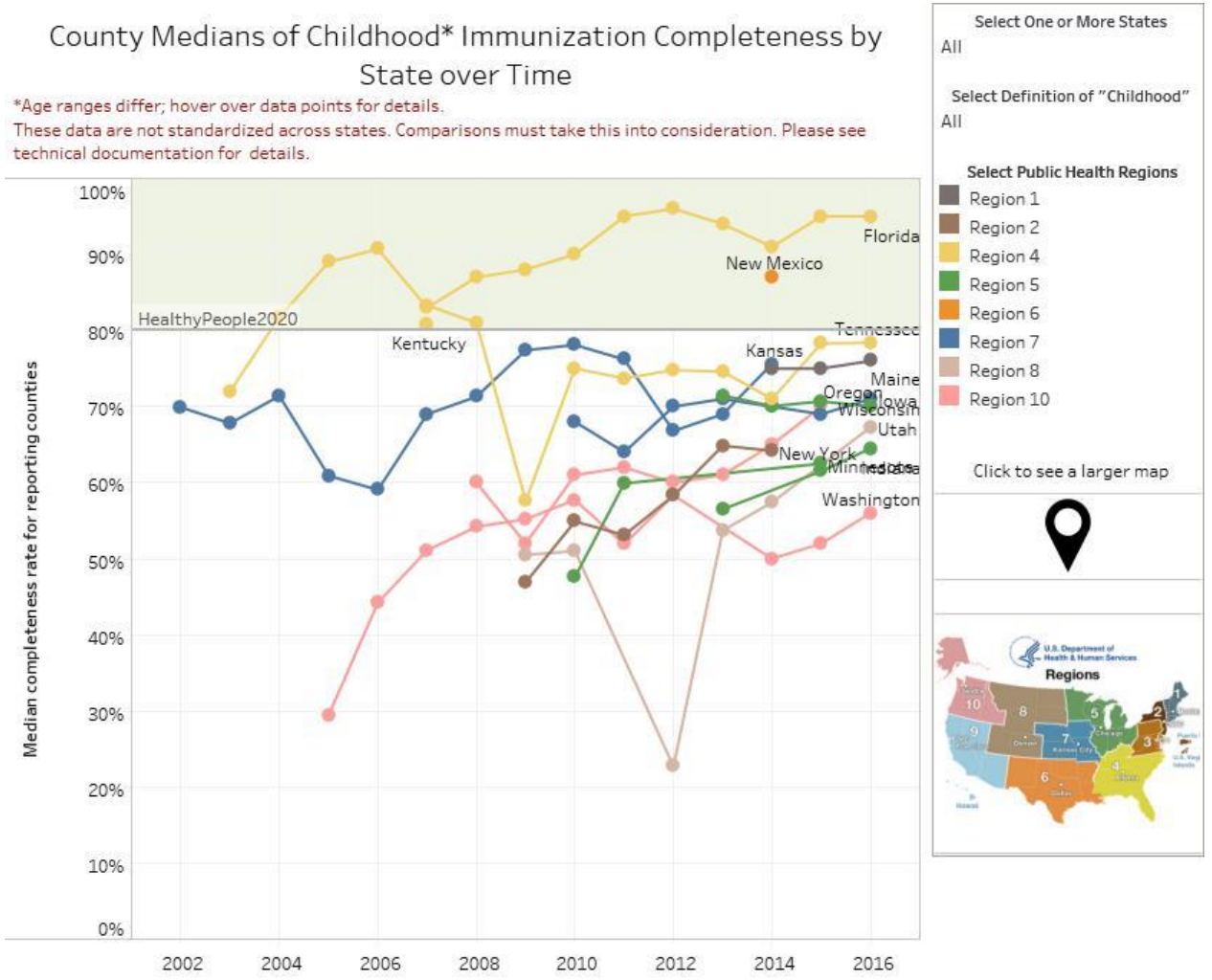


PHAST
Public Health Activities & Services Tracking

III. Immunization Dashboard Prototype

Overview

Compare median levels of childhood immunization rates across states for all counties

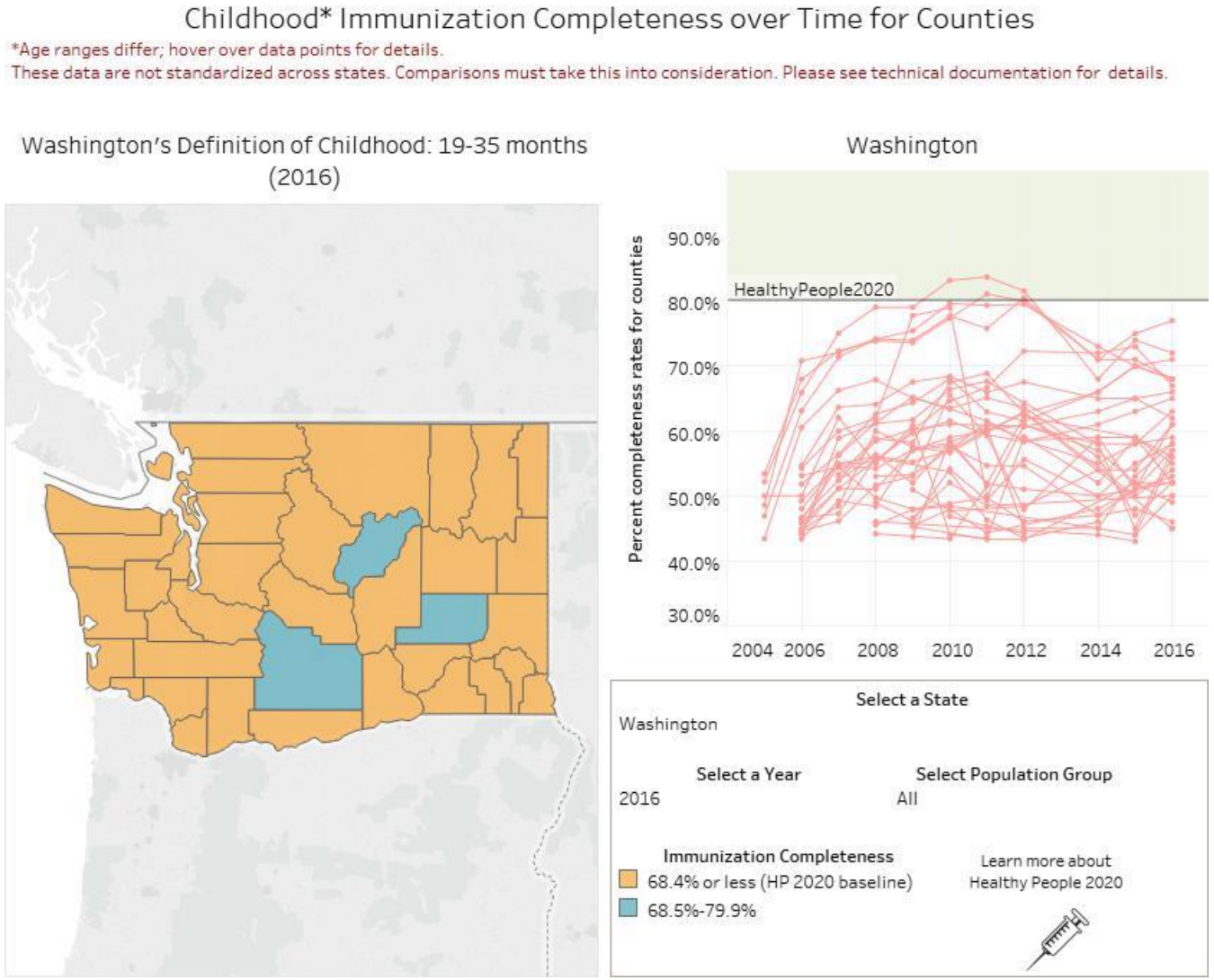


PHAST
Public Health Activities & Services Tracking

III. Immunization Dashboard Prototype

Details

Learn more about a single state's counties over time

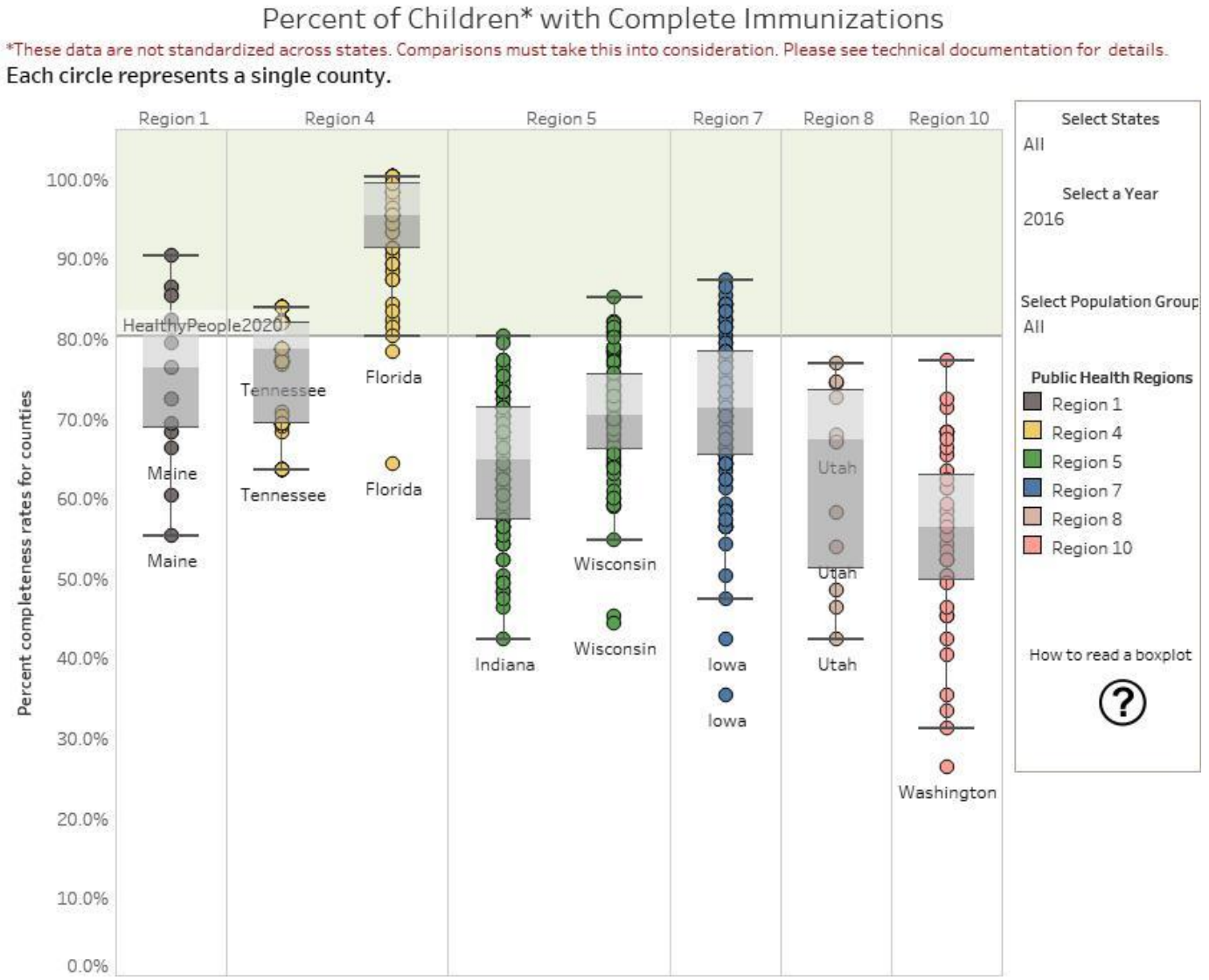


PHAST
Public Health Activities & Services Tracking

III. Immunization Dashboard Prototype

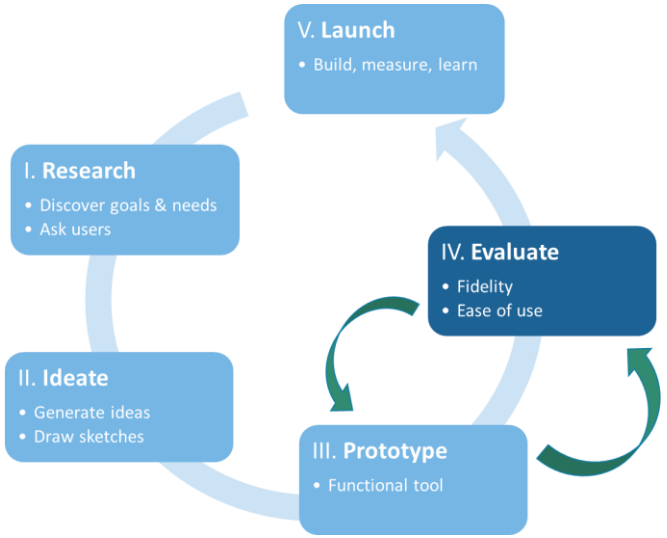
Compare

Compare immunization rates for counties within and across states



PHAST
Public Health Activities & Services Tracking

Future work / Discussion



- **IV. Evaluate Prototypes, Redesign, Re-Evaluate**
- Data quality: How can we improve the data quality?
  - Public health information system
- Putting it into practice
  - Case studies: integrating into workflow
  - Training in data use
- Effectiveness: How much this technical approach using data visualization helps inform decision-making?
- Combine with more datasets (finances, demographic information, health outcomes)

PHAST
Public Health Activities & Services Tracking

Thank you!

For more information visit www.phastdata.org

or contact us via email at phast@uw.edu

PHAST
Public Health Activities & Services Tracking