Presenting Data Using Online Interactive Dashboards: The Washington State Health Workforce Sentinel Network Experience

May 23, 2018
Health Workforce Technical Assistance Center Webinar

Benjamin Stubbs, Research Scientist
Amy Clark, Website Computing Specialist
University of Washington
Center for Health Workforce Studies

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Sentinel Network Project Team

University of Washington CHWS

Susan Skillman, Project Director

Ben Stubbs, Research Analyst

Amy Clark, Web Computing Specialist

JP Paredes, Program Coordinator

Davis Patterson, Evaluation Director

Washington State Workforce Board

Eleni Papadakis, Executive Director

Nova Gattman, Legislative Director

Motivation

“Could you see if the team would be willing to do a Part 2 to this webinar, where they could sketch out the process for building the Tableau visualization, the mistakes they made in their early attempts, and how they learned from them to make the updating process more streamlined?”

Sentinel Network's Purpose

The workforce is key to healthcare transformation.

We need early signals of changes in the occupations, skills, and roles needed to deliver quality care in order to respond appropriately.

The Sentinel Network supports efficient and effective health workforce preparation and deployment by:

- Identifying emerging signals of health workforce demand needs/changes
- Rapidly disseminating information to education, training and policy partners who can take action based on findings

www.wasentinelnetwork.org

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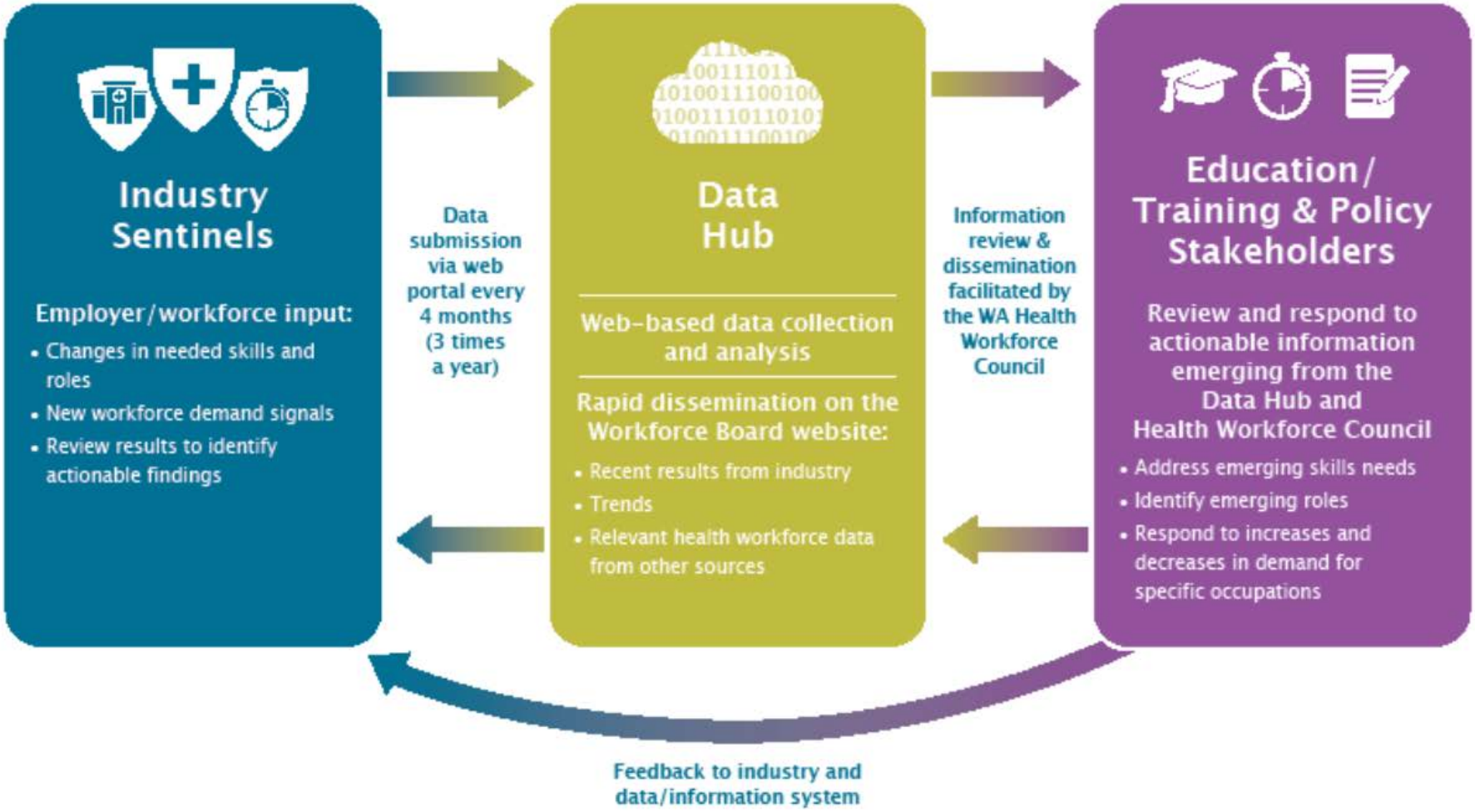
Washington's Health Workforce Sentinel Network



Registration and Questions

Registration Information

Sentinel employers first “register” by providing:

- facility type(s) where employed, and
- locations (counties)

For each facility type, Sentinels prompted to select occupations (based on SOC codes) that experienced recent change in demand

Registration and Questions

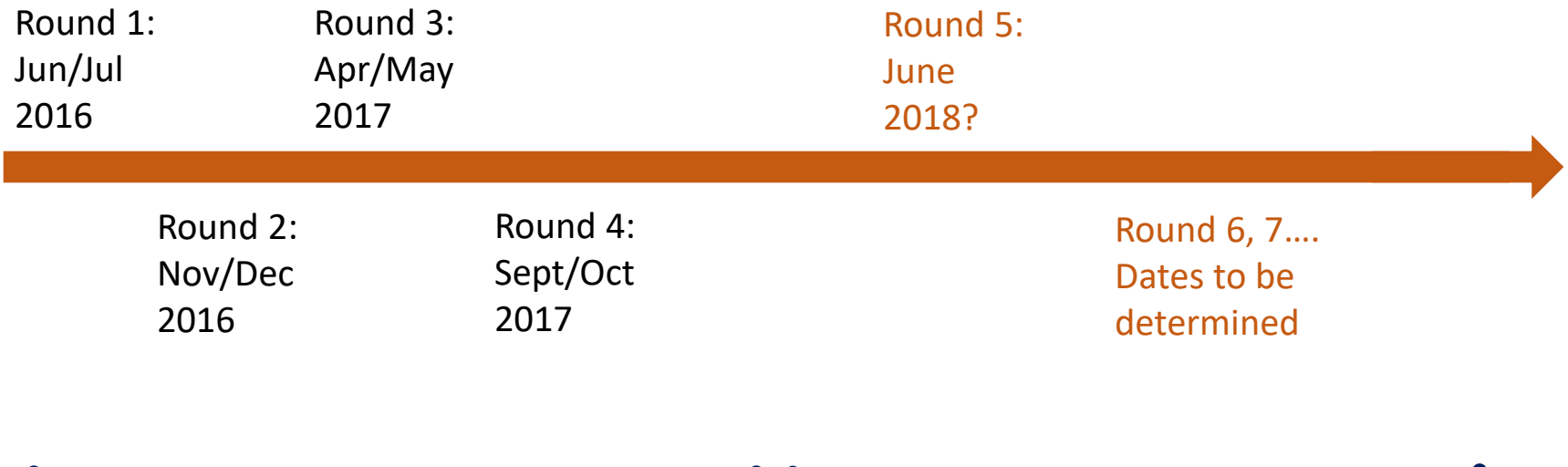
Questions

Recently (in the past 3–4 months):

- *Occupations experiencing exceptionally long **vacancies***
- *Occupations with increased or decreased **demand***
- ***New occupations** that they did not previously employ*
- ***New roles** for existing employees*
- *Changes in **orientation/onboarding procedures** for new employees*
- *Changes in **training priorities** for existing employees*

AND qualitative input about which, how, and reasons why

Sentinel Data Collection Dates



Dashboard Design Requirements

Interactive - Partners from many settings

Scalable – Updates every 4 months

Unabridged data - Mix of quantitative and qualitative

Privacy - Protect respondents' identities

Dashboard Design Requirements (2)

Time – Approximately 4 months to deploy to website

Costs –

- Staff
- Software licenses – Tableau, Qualtrics, etc.
- Domain name + Web Hosting
- Design and development
- Marketing

(don’t forget developing partnerships, testing)

Available Resources

Online survey tool - Qualtrics

Data processing – R

Data visualization – Tableau, R Shiny, ~~Java library (D3.js)~~

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Website – Hosted by funder

Online dashboard demonstration

Design “Solutions”

Interactive – Tableau makes it relatively easy to make functional and attractive visualizations.

However...

What is the best way to help users navigate the dashboard?

How does it look on different browsers/screens?

How to make researchers good designers?

Updates every 4 months

Our qualitative data requires some processing “by hand” after each data collection round (de-identification, coding)

After data processing, the output is an Excel spreadsheet. The updated spreadsheet replaces the previous dashboard data source and the visualizations are updated automatically (almost)

Things to think about if your data are updated periodically:

Build your data structure with updates in mind

Shape and variable names

How will your visualization grow as more data are added?

If you want to make comparisons over time, how will you do this?

Don’t forget to test after each update

Unabridged data - Mix of quantitative and qualitative

We wanted to make all comments available to users, which was challenging. We ended up using bar charts (which should be familiar to most people) with some functionality that may not be so familiar.

Even with purely quantitative data, selecting the “right” visualization is important

Things to consider when designing interactive dashboards

What is the user's point of entry to your data?

How much interpretation should you provide?

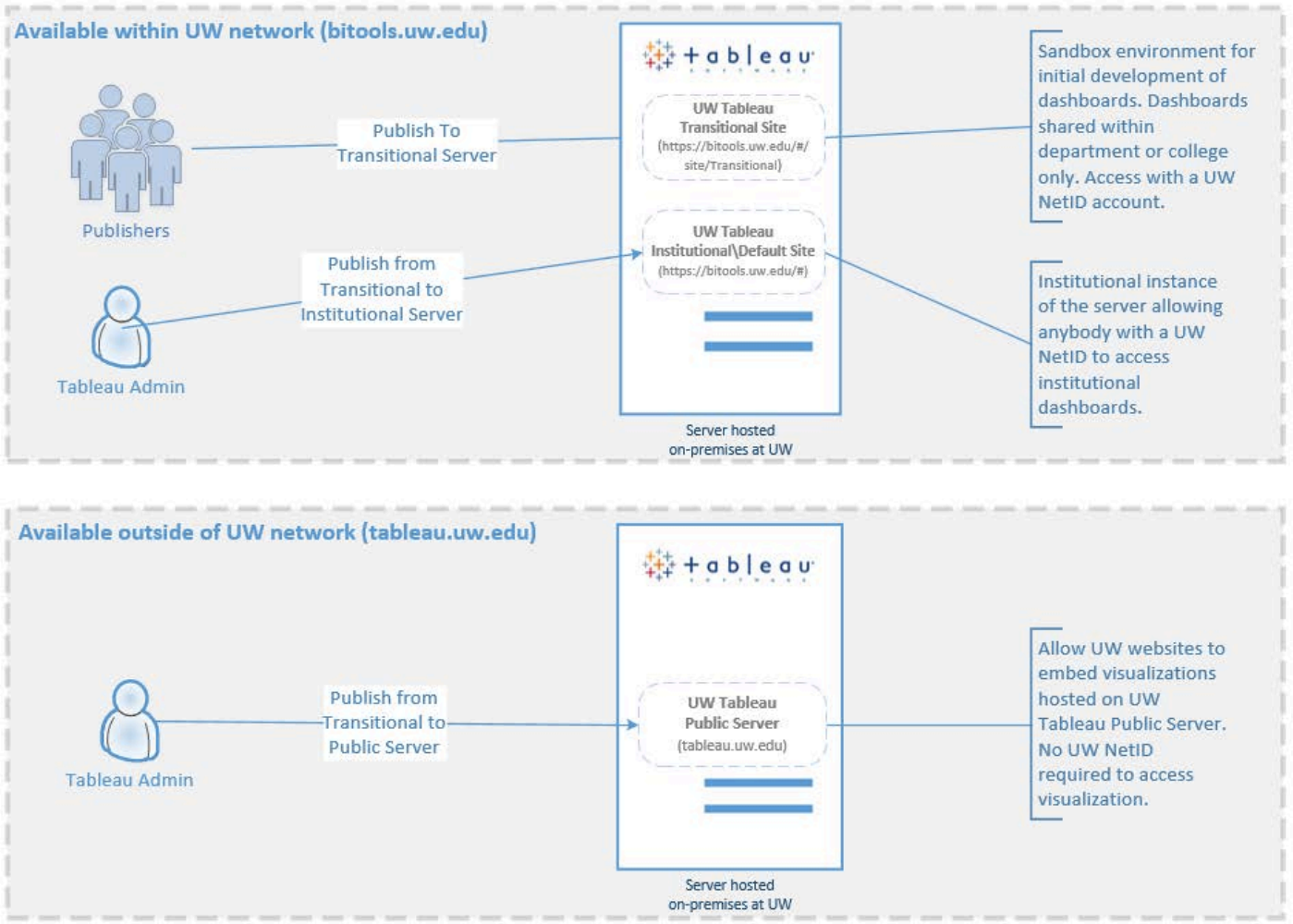
Privacy

UW Tableau offers 3 servers options:

- Transitional
- Production
- Public

UW Public Server provides benefits over Tableau Public:

- Data source protected from downloading
- Server managed and hosted at UW
- Custom branding/no Tableau watermarks



Resource Considerations

Online survey tool - Qualtrics

- Advanced GUI
- Many options for design
- Large/Complex surveys can be slow to load for both admins and users
- No developer shortcuts or customization

Resource Considerations

Website – Hosted by funder

- Pro: No additional cost
- Con: Constraints in design/branding, layout, integration

The Million Dollar Question

Costs –

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Resources

- Tableau
  - Read more about UW's Tableau Servers
- Qualtrics

Washington State's Health Workforce Sentinel Network

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Amy Clark, Website Computing Specialist
University of Washington
Center for Health Workforce Studies
muchuu@uw.edu

Ben Stubbs, Research Scientist
University of Washington
Center for Health Workforce Studies
bstubbs@uw.edu

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