

National Notifiable Diseases Surveillance System (NNDSS) Data Standardization and Harmonization Effort

Four white arrows pointing right on a dark asphalt surface, arranged in a staggered pattern. The arrows are painted on the asphalt and point towards the right side of the frame.

Drivers for Standardization and Harmonization Efforts

- Responds to jurisdictions' requests
- Advances health equity work
- Identifies basic information needed for emergency responses (COVID-19, now monkeypox)
- Supports preparedness by setting up data elements before we know the condition
- Streamlines the case data flow (electronic health record [EHR], jurisdiction surveillance systems, CDC)



THE FUTURE IS OURS TO CREATE.

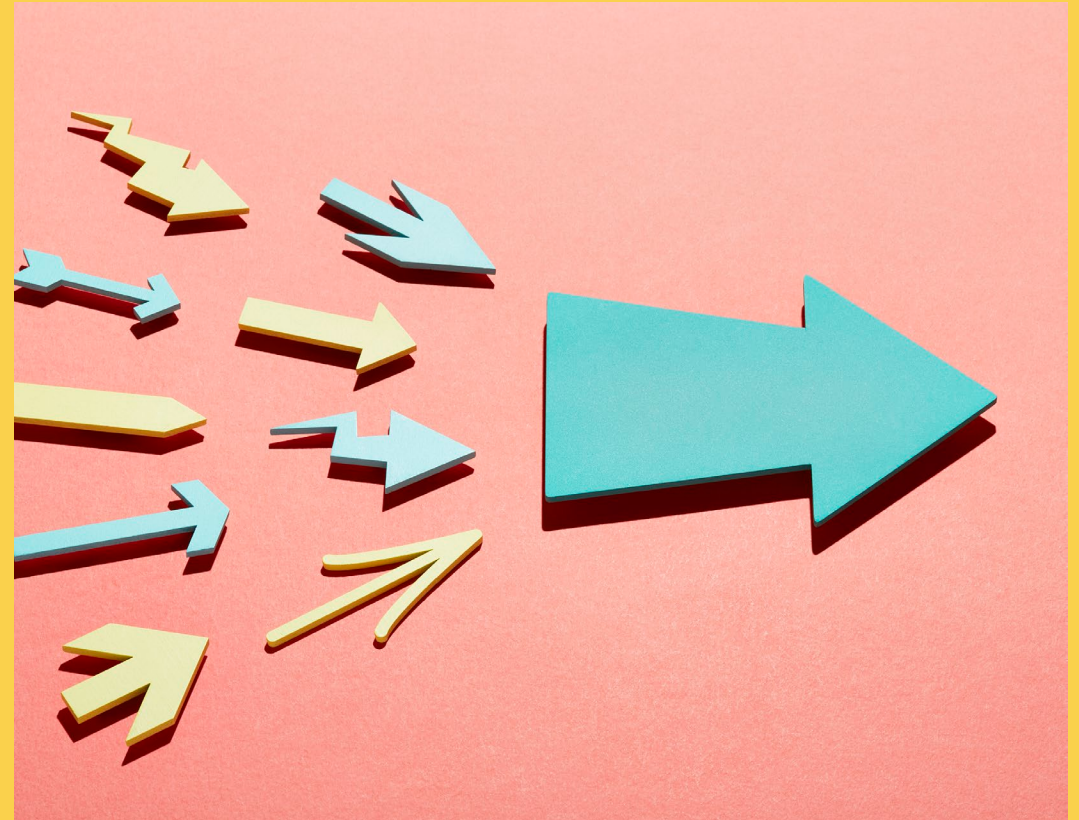
What does it mean when a jurisdiction has “generic” or “core” data for a case?

- Jurisdiction surveillance systems are set up with a set of data elements that are present for **any condition**. This set includes contact info, demographics, case classification status, onset date, diagnosis date, and dates related to reporting or entry in the system.
- **NETSS core** is the basic set from a case notification perspective.
- **Generic v2 (GenV2) message mapping guide (MMG)** is a larger set that is standard across conditions and jurisdictions.
- If all conditions start in the jurisdiction system with the “core” data elements available, **you can more easily send that information** to CDC.



What if we expand the "core" data?

- This means we are asking for the data the same way **across all conditions**.
- It allows jurisdictions to include these new "expanded core" data elements in your system as **general data elements** for any condition.
- Setting up a new condition to include these data elements should be easier because **the format for collecting and sending is already there**.

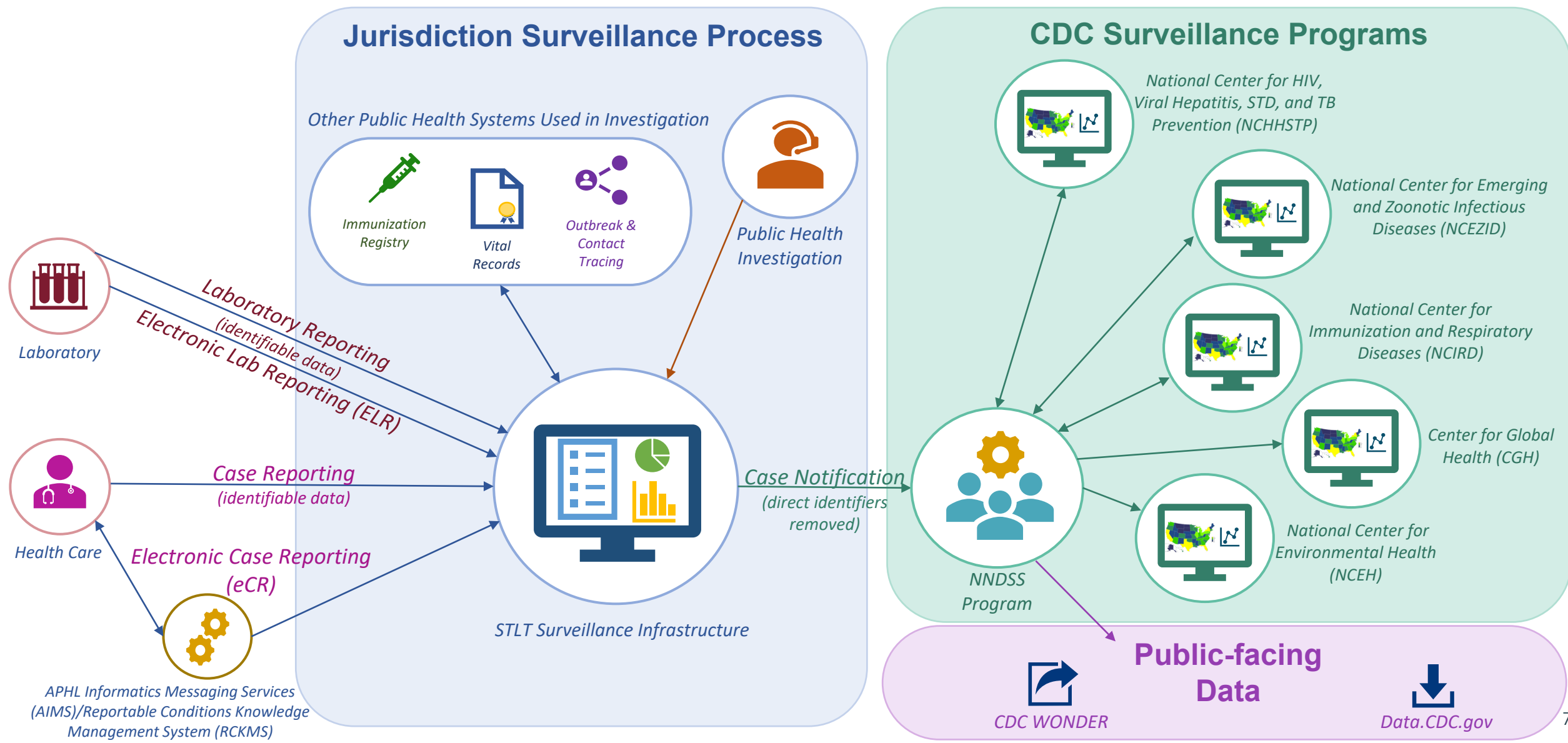


What should the “expanded core” look like?

- There are **common categories** of information collected during public health investigations.
 - What is common across MMGs?
- Use **existing standards**
 - What comes into the surveillance system in a standardized way (electronic lab reporting [ELR], electronic case reporting [eCR], vaccine history)?



Case Surveillance Data Flow



What Does the Case Data Structure Look Like? (Example)

Case demographics

- Core demographics

- SOGI¹ and SDOH²

- Industry and occupation

Pregnancy

Clinical

- Hospitalization

- Underlying conditions

- Signs and symptoms

- Treatment

Risk factors/exposures

Travel history

Lab test information

Vaccination

Death

Public health process info



¹SOGI: sexual orientation and gender identity

²SDOH: social determinants of health

Where Do the Data Come From?

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Core demographics

SOGI¹ and SDOH²

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Jurisdiction



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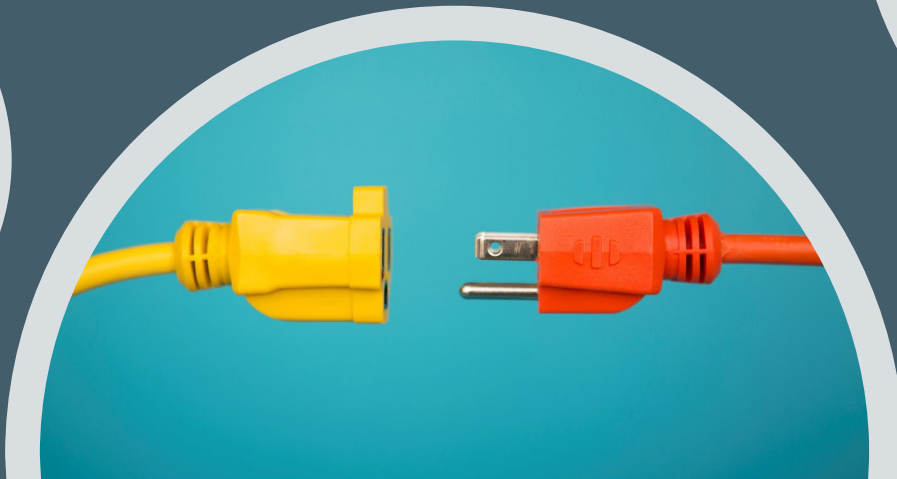
²SDOH: social determinants of health

Importance of *Aligning* Data Throughout the Case Surveillance Ecosystem:

U.S. Core Data for Interoperability (USCDI), eCR, Surveillance Systems, and Case Notifications

Standardization Matters

Our lives operate on it.

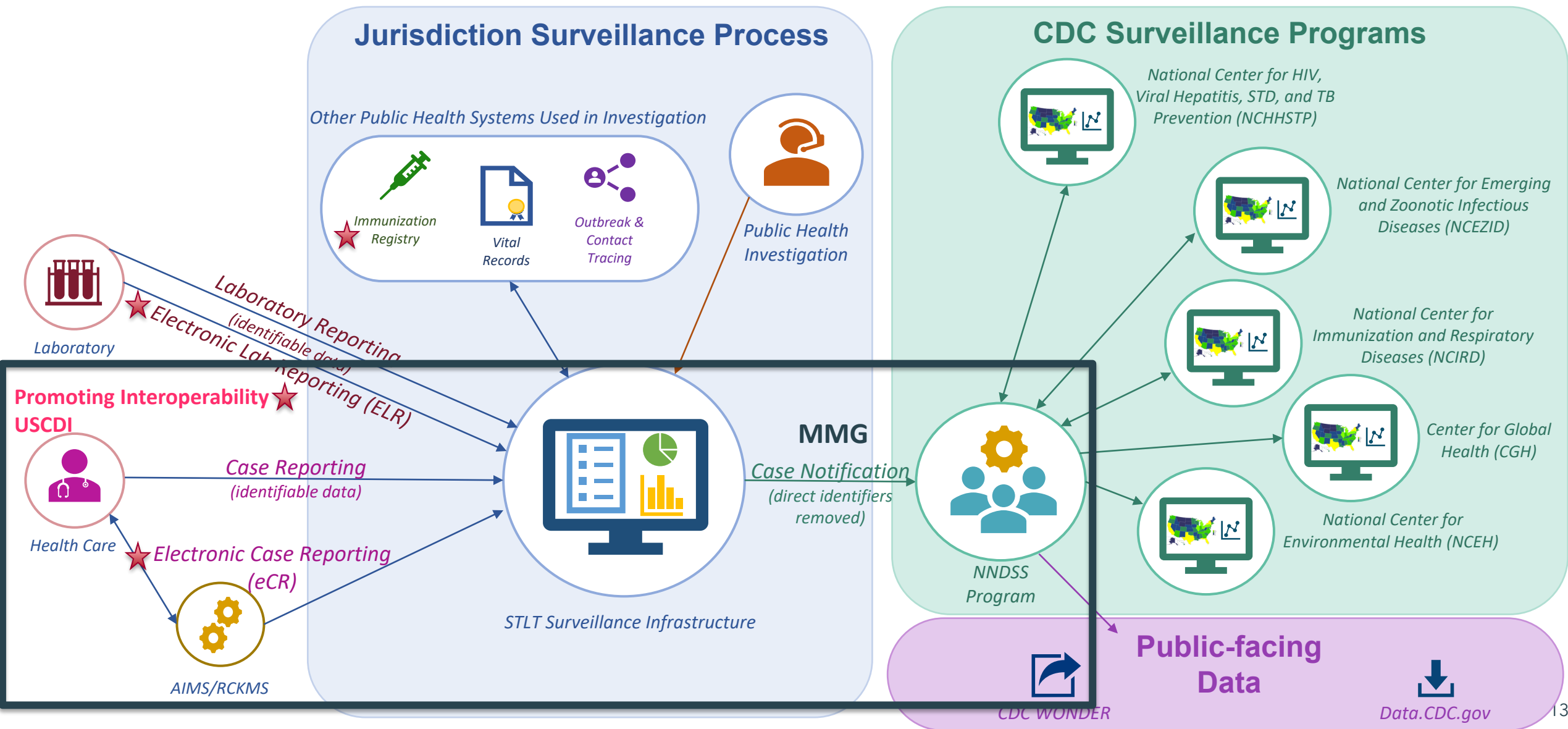


Standardization in Health Care and Public Health

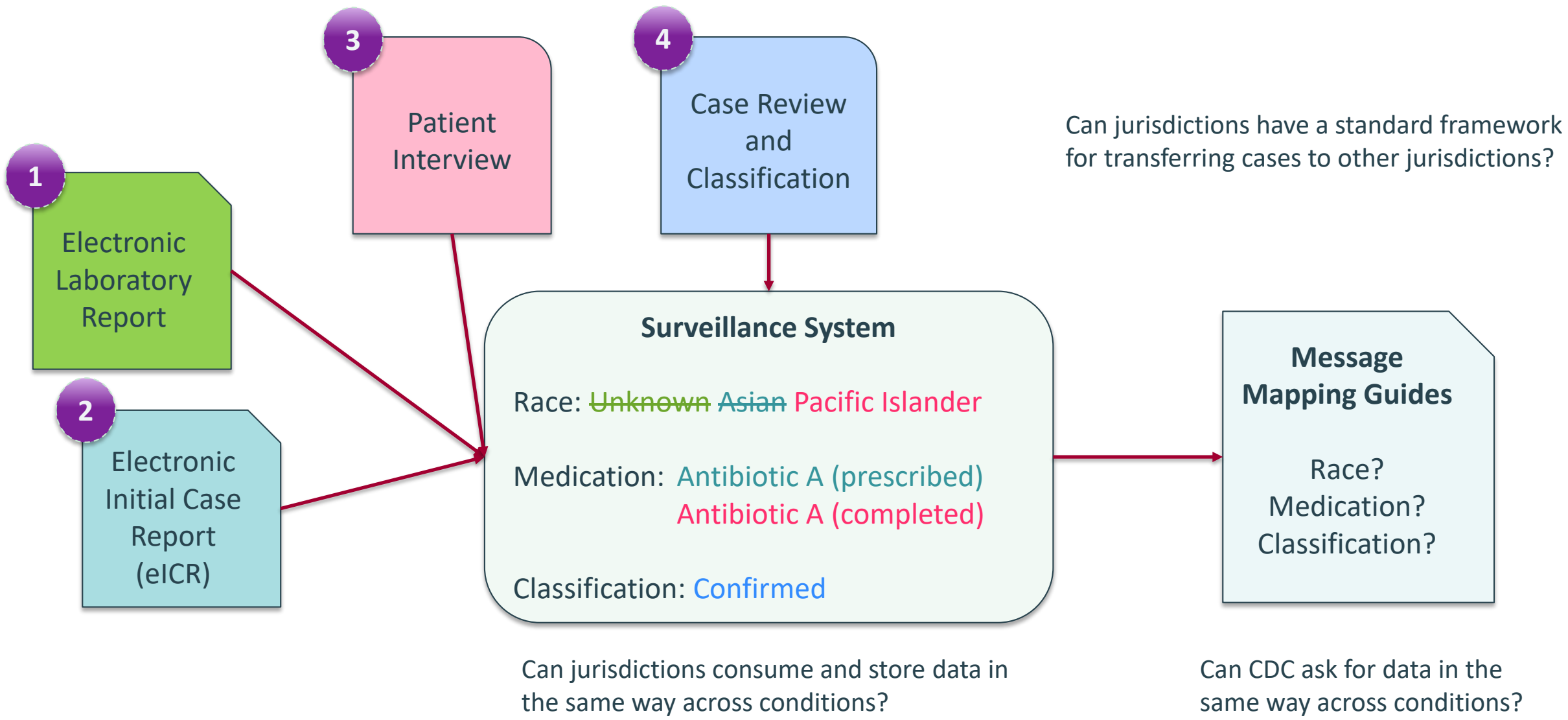
- Efforts to standardize and promote interoperability across EHR systems provided a common language and led to more data available
- Public health needs to capitalize on the efforts in health care and apply the same principles to public health data exchange
- **Standardization** of data from health care, data held in jurisdiction surveillance systems, and data requested by CDC will result in more data available to those who need it



What is the Connection between an MMG and eCR?



Data Flow From Input Formats to Jurisdiction's Surveillance System to Case Notification

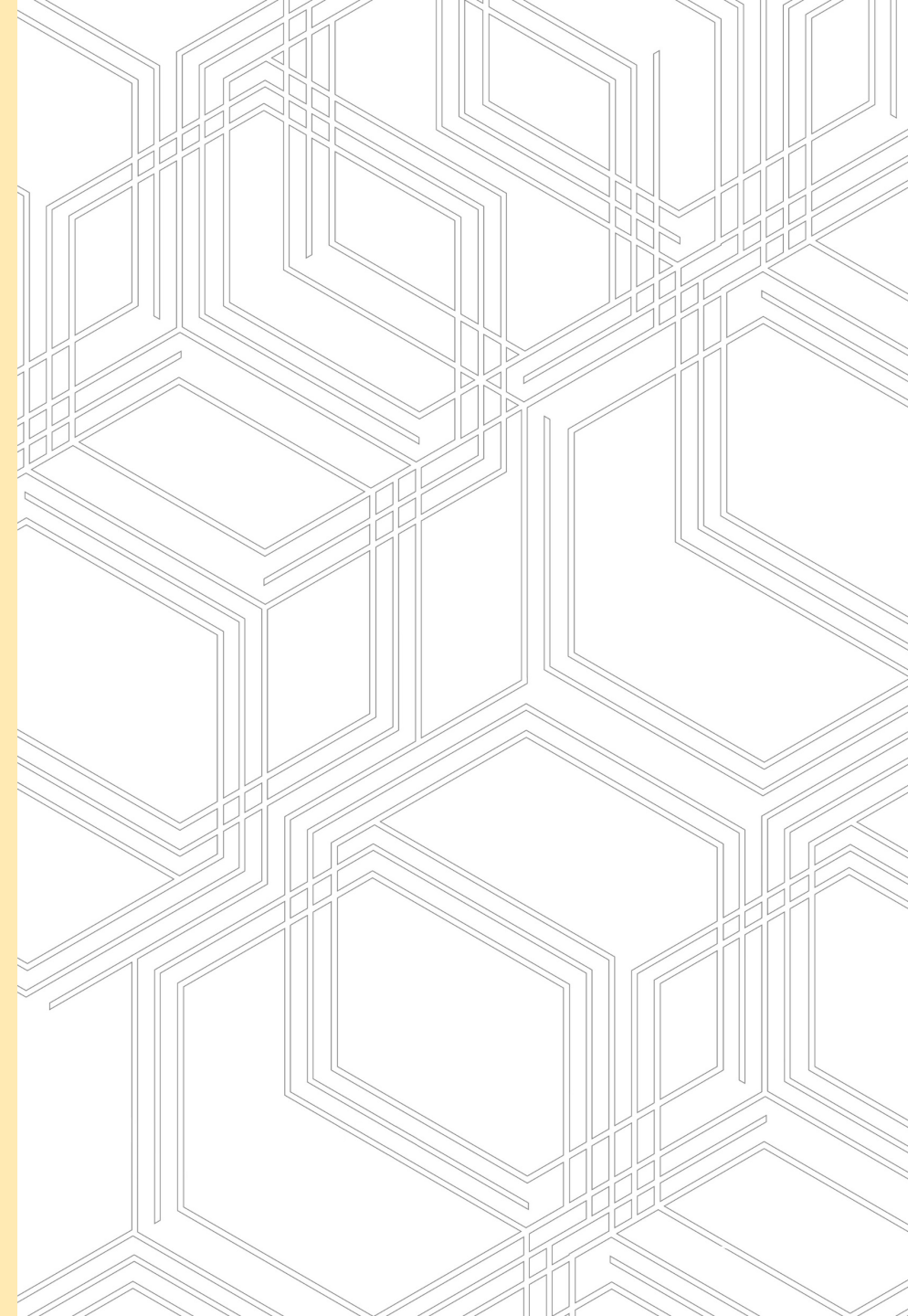


Questions for Jurisdiction Case Surveillance

- Why are we collecting the data element? How is it used?
- Where do the data come from? Are the multiple sources aligned?
- How can we make it *easier* to collect, create, and use the surveillance data and share with appropriate partners (other jurisdictions, CDC)?
- As eCR evolves, how can it be used to reduce burden of data collection and processing? Where can we remove manual steps?
- What are the opportunities for automation? What is needed?
- ...and many other questions we should be asking

NNDSS Data Standardization and Harmonization

...is about more than MMGs.





What Should the Future Look Like?

Automated...

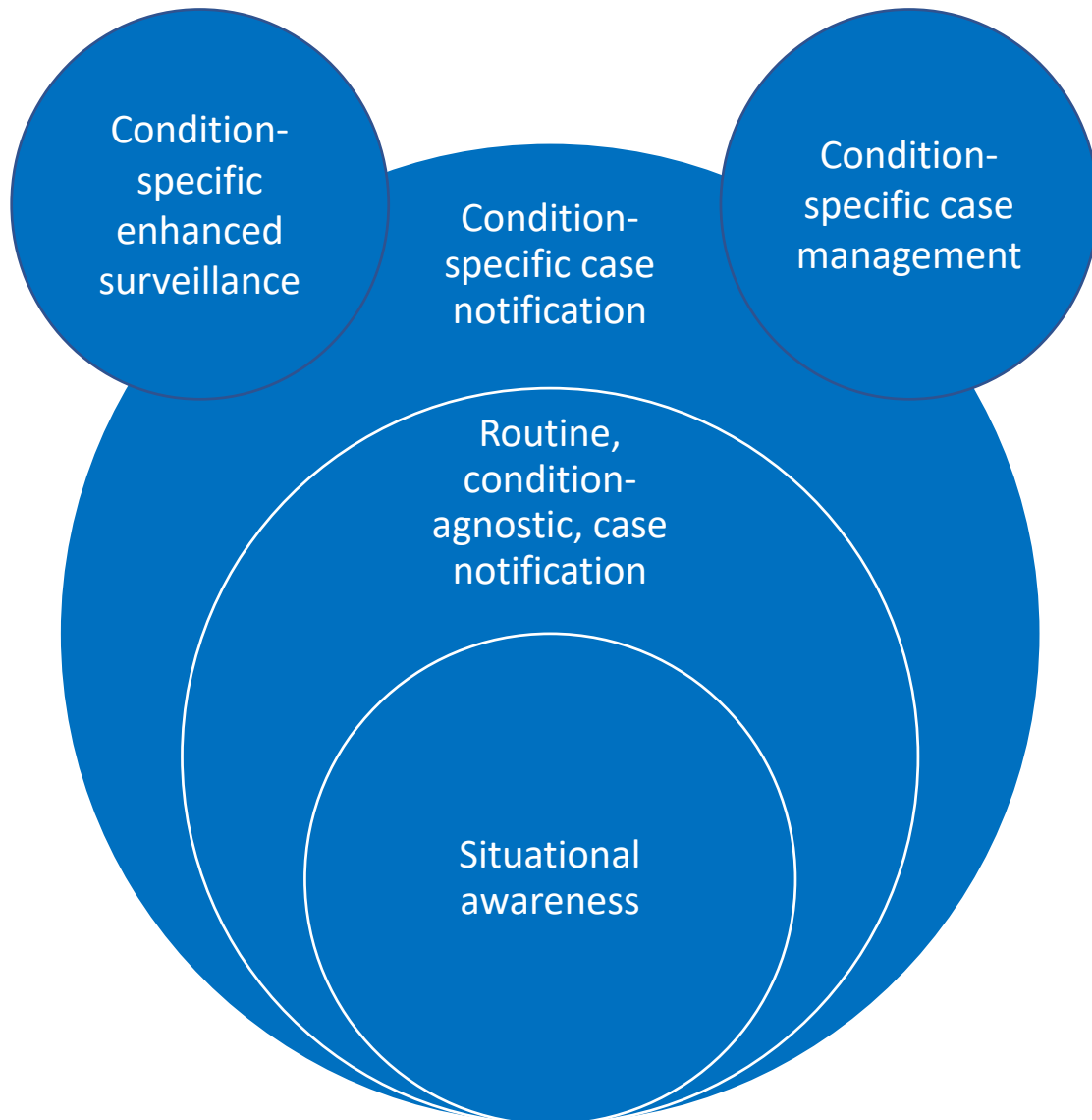
- **electronic reporting** from labs and health care
- **consumption** of the reports into the jurisdiction surveillance system
- **linkage** with other systems (e.g., immunization registry, death registry, health information exchange [HIE], etc.)
- review of the available case data for **case classification status assignment** (when available data are enough to classify)
- **electronic notification** sent to CDC for cases meeting notification criteria (based on classification)
- notification **processing** and “**translation**” of data into epi-friendly concepts (e.g., lab observation LOINC and SNOMED-CT codes)



Data Standardization is the Key

For systems to talk to each other and share automated services, they must speak the same language.

Case Surveillance Data



We will bring together partners to:

- Determine what can and should be standardized
- Understand the landscape of current standardization efforts outside of NNDSS
- And much more!

Next steps (some of them):

- Talking with the Council of State and Territorial Epidemiologists about the best ways to engage jurisdictions
- Determine best methods of engaging CDC programs
- CDC Data Modernization Initiative (DMI) case surveillance landscape analysis (not yet started)
- CDC DMI project: Identify Emergency Case Data Elements (currently underway)

There will be much more to come...

Questions?
Comments?





Thank you!

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov



The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.