

Georgia Board of Public Health

Aug. 13, 2019

Agenda

- Call to order Cynthia Mercer, M.D., Board Chair
- Roll Call
- Election of Board of Public Health Officers
 - Chair
 - Vice Chair
 - Secretary
- Approval/Adoption of Minutes
- Commissioner's Update Kathleen E. Toomey, M.D., M.P.H., Commissioner

Hotel Legionnaire's Disease Outbreak



**Largest ever
in Georgia!**

Board of Public Health / Cherie L. Drenzek, DVM, MS / State Epidemiologist & Chief Science Officer / Aug. 13, 2019

Background: *Legionella*

Gram-negative bacteria (multiple species)

Found naturally in **warm water** (hot tubs, plumbing, showers, fountains)

Grows and survives well in **biofilms**, particularly in areas where there is low water flow

Persons get infected when they breathe in droplets of water contaminated with *Legionella* (incubation period 1-14 days)

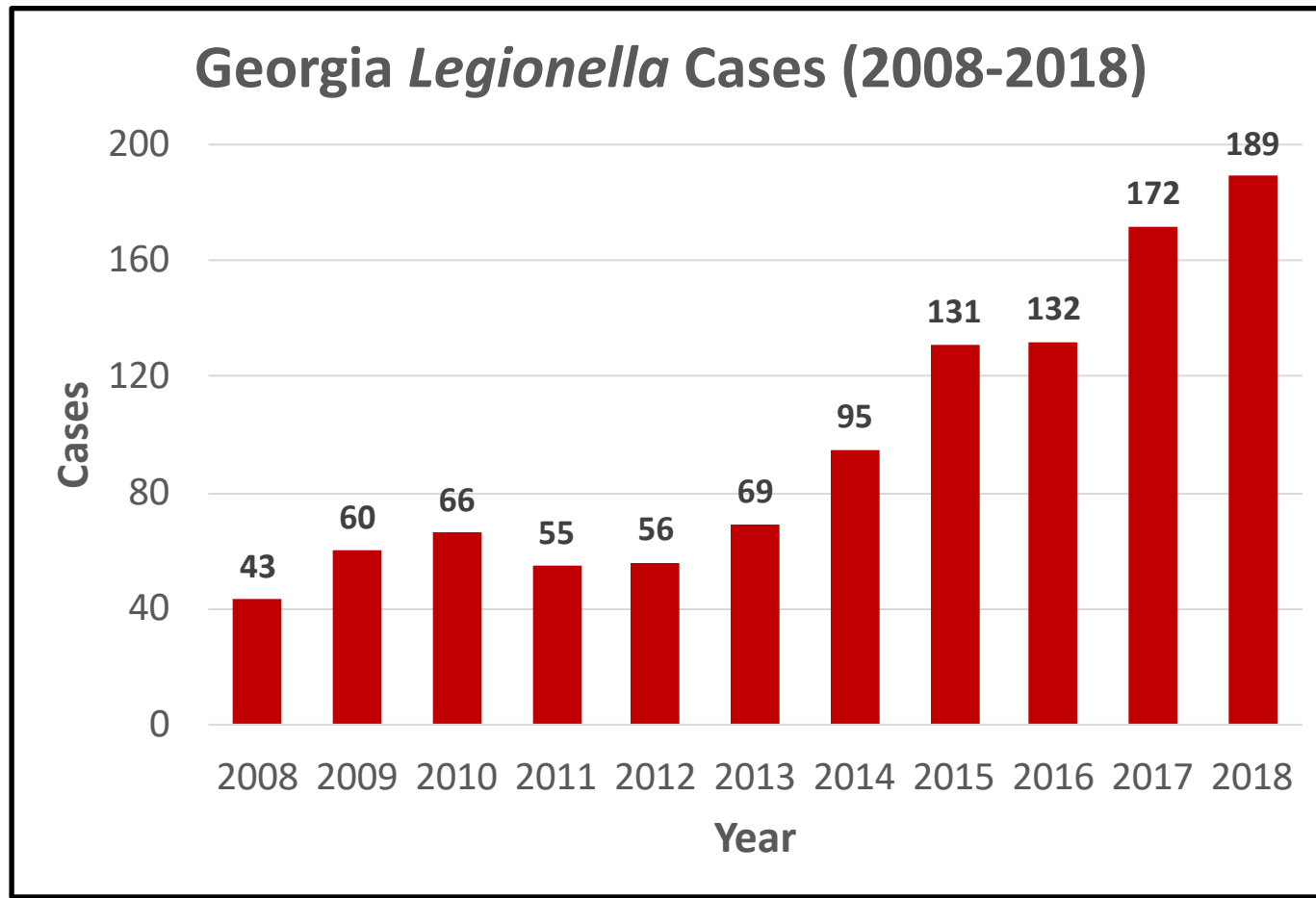
Legionella infections can be **very severe**: 10% fatal; 44% ICU admission

1st outbreak recognized in 1976 at American Legion Convention in Philadelphia (221 cases, 34 deaths)

Legionella cases and outbreaks are on the RISE.



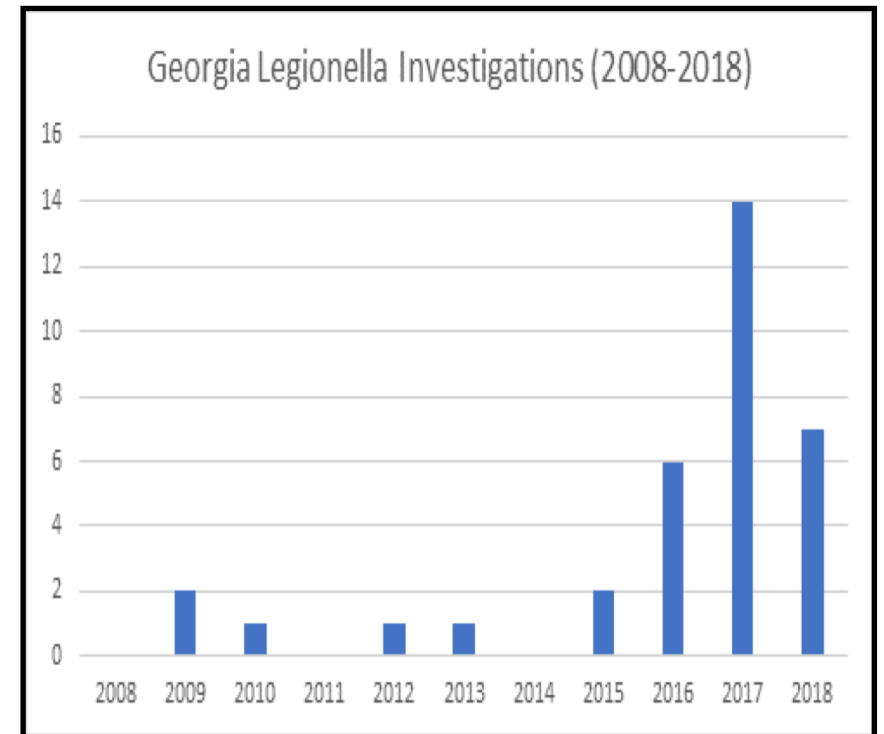
Legionellosis in Georgia



- 97% hospitalized (51% ICU)
- 8% fatal
- 33% healthcare-associated
- Mean age: 60 years, 61% male

Legionella Outbreaks in Georgia

- 7 outbreak investigations in 2018, 14 in 2017
- Outbreaks most commonly occurred in hospitals and hotels
- **Most outbreaks were associated with potable water plumbing systems**
- Environmental risk factors for outbreaks can include construction, water main breaks, water temperature/pH fluctuations, inadequate levels of disinfectant, water stagnation—leads to biofilm.
- Picture can look like “sporadic” cases every few months...
- **Almost all outbreaks were preventable with more effective water system management.**



Legionnaires' Disease Outbreak at an Atlanta Hotel, July 2019

- On July 12, 2019, DPH epidemiologists documented 3 lab-confirmed cases of *Legionella* infection among attendees of a conference held at the hotel in late June/early July.
- Hotel voluntarily closed on July 15 while investigation proceeded.

Downtown Atlanta hotel closed after 3 cases of Legionnaires' disease

By: Lori Wilson , Alyssa Hyman

Updated: Jul 16, 2019 - 11:13 AM



Legionnaires' Disease Outbreak at an Atlanta Hotel, July 2019

Goals of the outbreak investigation:

- Case finding
- Lab diagnosis
- Elucidate risk factors for illness (epidemiologic study)
- Elucidate the source of *Legionella* (environmental and water testing)
- Remediation/control (both immediate and long-term)

Legionella outbreak investigations are tremendously complex, lengthy, and very expensive!

Downtown Atlanta hotel closed after 3 cases of Legionnaires' disease

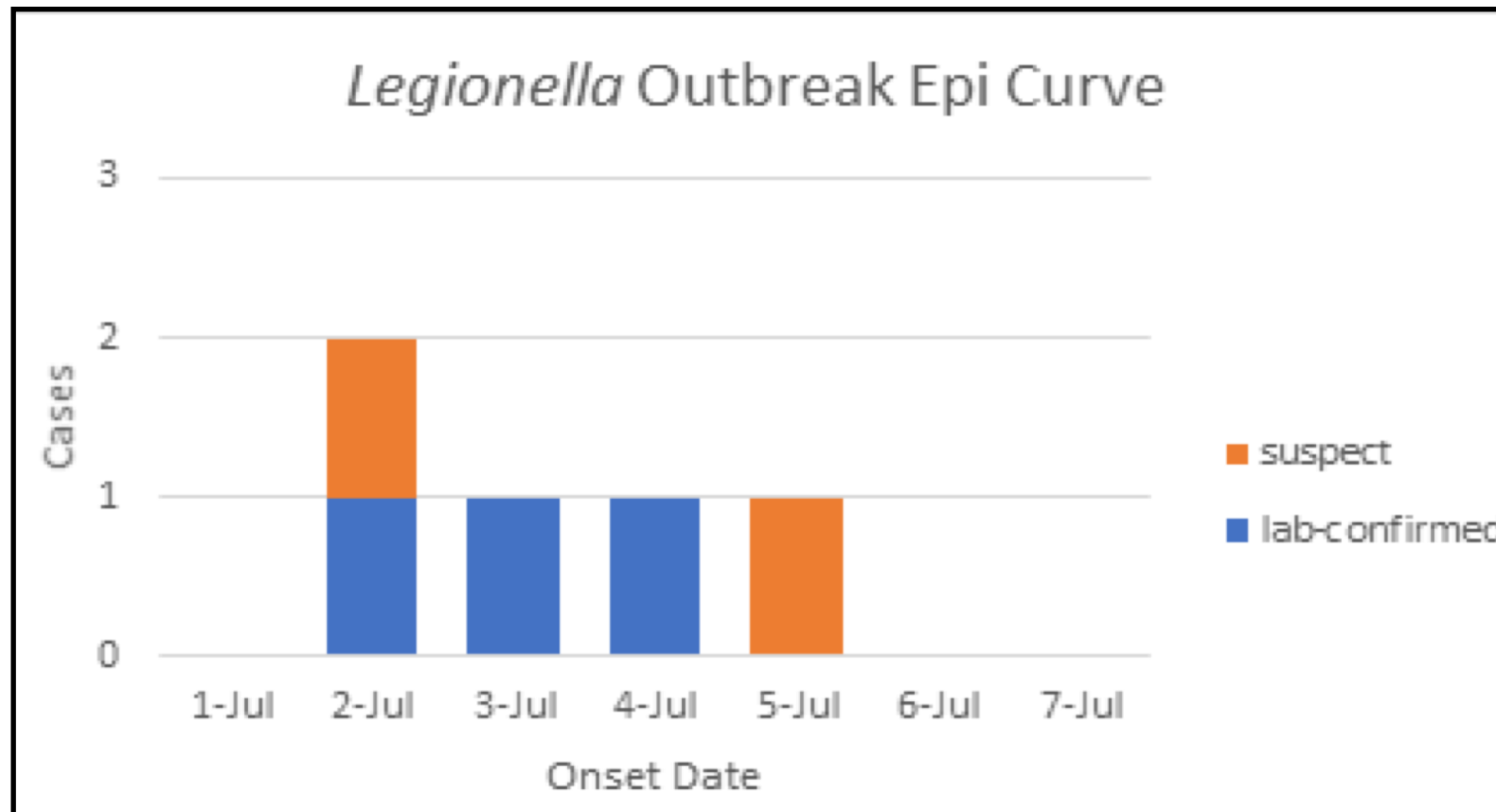
By: Lori Wilson , Alyssa Hyman

Updated: Jul 16, 2019 - 11:13 AM



Initial Investigation

First Epi Curve, Friday, 7/12/19



Initial Investigation



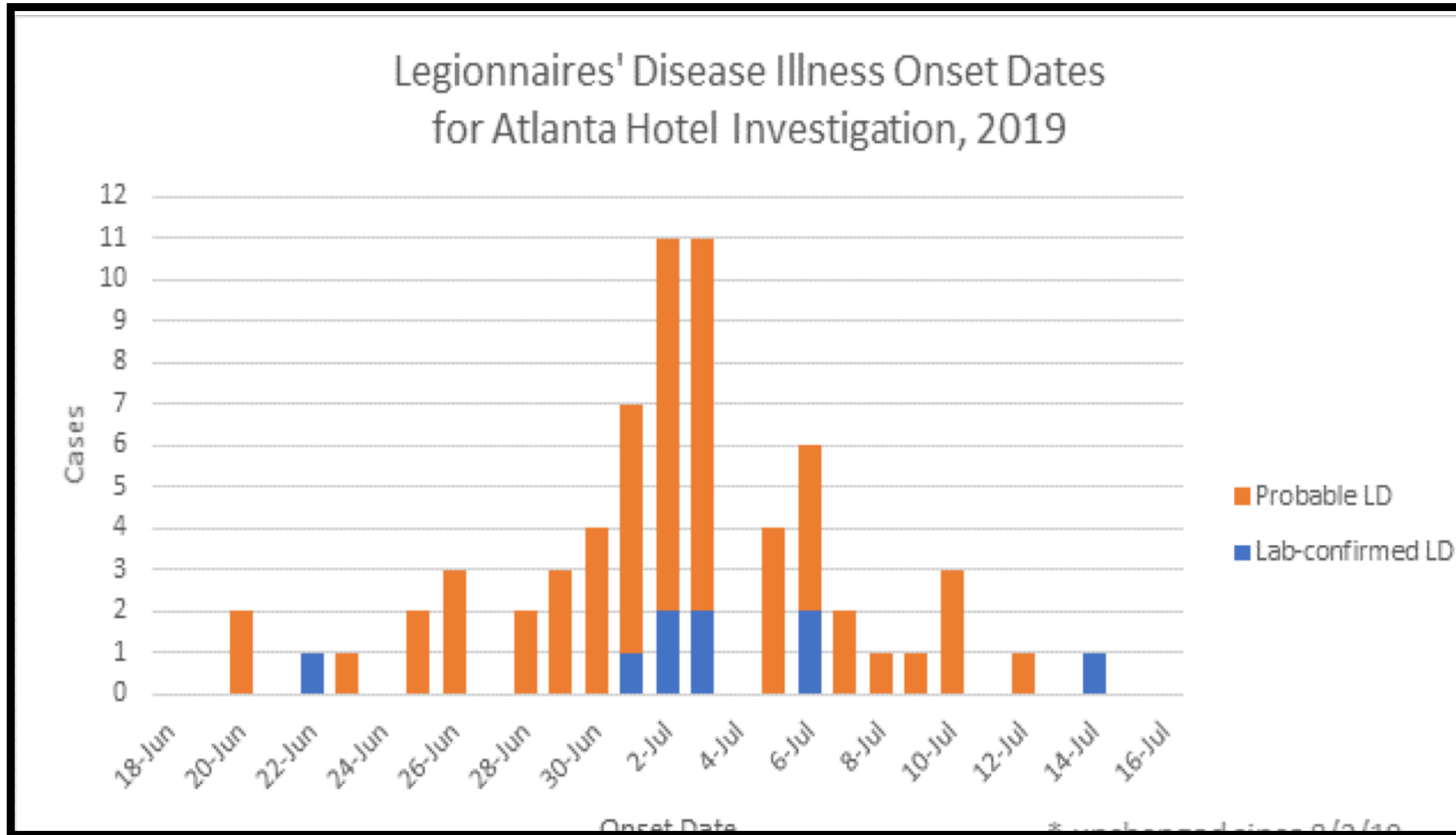
The epidemiology (point source epi curve) informed our recommendation for **immediate control measures** (closure of aerosolizing devices: hot tub, pool, decorative fountains in courtyard) = “usual suspects” in other point source *Legionella* outbreaks

Investigation Steps (Epi and Environmental)



- Hotel hired *Legionella* contractor and CDC-certified ELITE laboratory for testing
- Guest notification about potential exposure (letter from hotel)
- **Case finding**—deployed an electronic survey in SendSS to all guests in hotel from June 12-July 15 (assessing illness + activities in hotel)
- Onsite **environmental assessment** of all water systems in hotel (identifying areas of risk)
- **Environmental testing**: Collected water and environmental samples from entire water distribution system for *Legionella* testing

Epidemiologic Investigation



- We received more than 1300 survey responses
- As of Aug. 9, we have **12** lab-confirmed and **64** probable LD cases, including one death.
- Probable cases had pneumonia (by chest x-ray or clinician-dx) AND were epi-linked (at the hotel within 14 days of illness)

Environmental Investigation

- Still ongoing
- Environmental testing: water samples tested at CDC-certified ELITE laboratory
- **Remediation** (done after samples collected and/or driven by lab results)
 - Plumbing engineering changes
 - Hyperchlorinate or superheat potable water
 - Serial repeat testing
 - Requires skilled contractor

Centers for Disease Control and Prevention
Legionella Environmental Assessment Form

HOW TO USE THIS FORM

This form enables public health officials to gain a thorough understanding of a facility's water systems and assist facility management with minimizing the risk of legionellosis. It can be used along with epidemiologic information to determine whether to conduct Legionella environmental sampling and to develop a sampling plan. The assessment should be performed on-site by an epidemiologist and an environmental health specialist with knowledge of the ecology of Legionella. Keep in mind that conditions promoting Legionella amplification include water stagnation, warm temperatures (77-108°F or 25-42°C), availability of organic matter, and lack of residual disinfectant such as chlorine. For training and information, please visit CDC's legionellosis resources webpage at: <http://www.cdc.gov/legionella/outbreak-lookit/>.

Complete the form in as much detail as possible. Do not leave sections blank; if a question does not apply, write "N/A". If a question applies but cannot be answered, explain why. Where applicable, specify the units of measurement being used (e.g., ppm). Completion of the form may take several hours.

BEFORE ARRIVING ON SITE

- Request the attendance of the lead facility manager as well as others who have a detailed knowledge of the facility's water systems, such as a facility engineer or industrial hygienist.
- Request that they have maintenance logs and blueprints available for the meeting.
- Bring a plastic bottle, thermometer, pH test kit, and a chlorine test kit that can detect a wide range of residual disinfectant (<1 ppm for potable water and up to 10 ppm for whirlpool spas).
- If the epidemiologic information available suggests a particular source (e.g., whirlpool spa, cooling tower), request that they shut it down (but do not drain or disinfect) in order to stop transmission.

INSTRUCTIONS FOR MEASURING WATER PARAMETERS IN THE PREMISE PLUMBING (TABLE P. 8)

It is very important to measure and document the current physical and chemical characteristics of the potable water, as this can help determine whether conditions are likely to support Legionella amplification.

STEP 1: Plan a sampling strategy that incorporates all central hot water heaters/boilers and various points along each loop of the potable water system. For example, if the facility has one loop serving all occupant rooms, an occupant room near (proximal) the central hot water heater and another at the farthest point (distal) of the loop should be sampled.

STEP 2: For each sampling point (e.g., tap in an occupant room):

- Turn on the hot water tap. Collect the first 50 ml from the tap. Measure the free chlorine residual and pH. Document the findings in the table on p. 8. Note: If there is no residual chlorine in the hot water, measure it in the cold water. Note: Total chlorine should be measured instead of free chlorine if the method of disinfection is not chlorine (e.g., monochloramine).
- Allow the hot water tap to run until it is as hot as it will get. Collect 50 ml and measure the temperature. Document the temperature and the time it took to reach the maximum temperature.

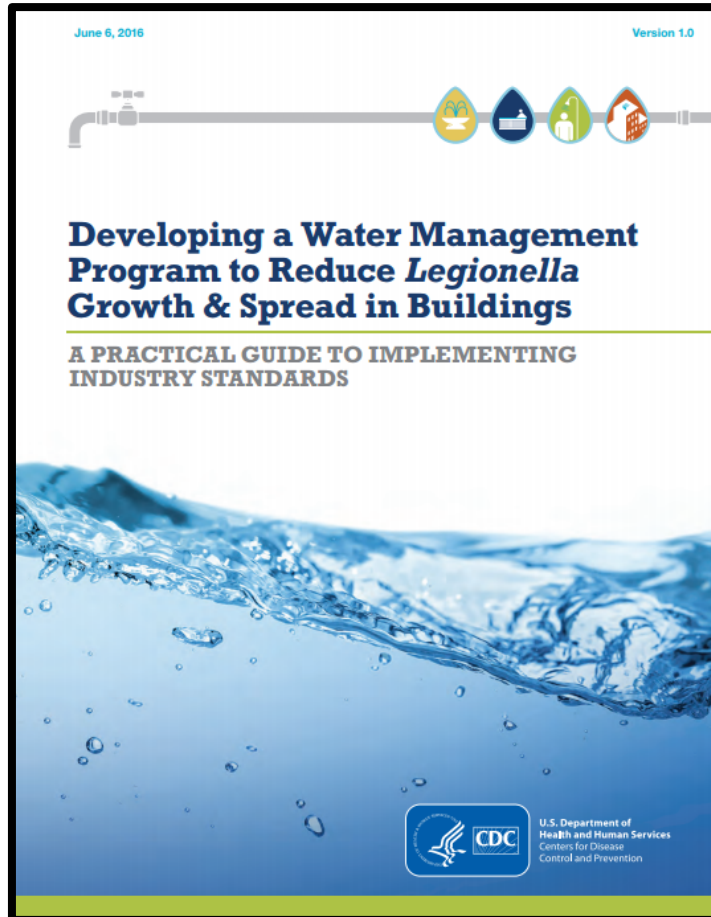
National Center for Immunization and Respiratory Diseases
Division of Bacterial Diseases

CDC

162075 CS204801-A



Legionella Outbreak Prevention



Prevention is key, remediation of outbreaks is **extremely** difficult, labor-intensive, and expensive.

Building owners and managers (including hotels, hospitals and healthcare facilities) should develop and use a *Legionella* water management program according to new industry standards

(<http://www.cdc.gov/legionella/WMPtoolkit>)

<https://www.cdc.gov/legionella/water-system-maintenance/healthcare-wmp-faq.html>

Legionellosis: Reminders for Healthcare Providers



1. Critical to ask patients with pneumonia about **travel** or visits to **healthcare facilities** during the 2 weeks before illness onset.
2. Order appropriate tests for *Legionella*:
 - Order culture and urine antigen testing in combination—culture is critical.
 - Urine antigen only detects one serogroup of *L. pneumophila* (SG 1)
 - PCR testing is not FDA-approved and serology is rarely useful.
3. Immediately report *Legionella* cases to Public Health.

Questions?

For more information, please contact:

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Office of Public Health Informatics

Board of Public Health / Karl Soetebier, Director Office of Public Health Informatics / Aug. 13, 2019

Information + Automatic = Informatics

Information: communication of data with context and meaning

Automatic, Automated: doing something that requires limited human control



A	B	C	D	E
F	G	H	I	J
K	L	M	N	O
P	Q	R	S	T
U	V	W	X	YZ





Information + Automatic = Informatics

Informatics is understanding how to help us communicate with each other in informative ways through the efficient and effective use of machines

Relevancy to Public Health

- Better understanding of public health information needs
- Improved systems to meet those needs
- Advance the mission of public health
- More efficient and effective use of limited resources

Office of Public Health Informatics

- Advocates for the information needs of DPH
- Ensure technology solutions and business processes are well aligned
- Data and information are collected and used efficiently and effectively

Three Areas of Focus



Interoperability

Helping interconnect systems to allow the more effective and efficient exchange of data



Business Intelligence and Analytics

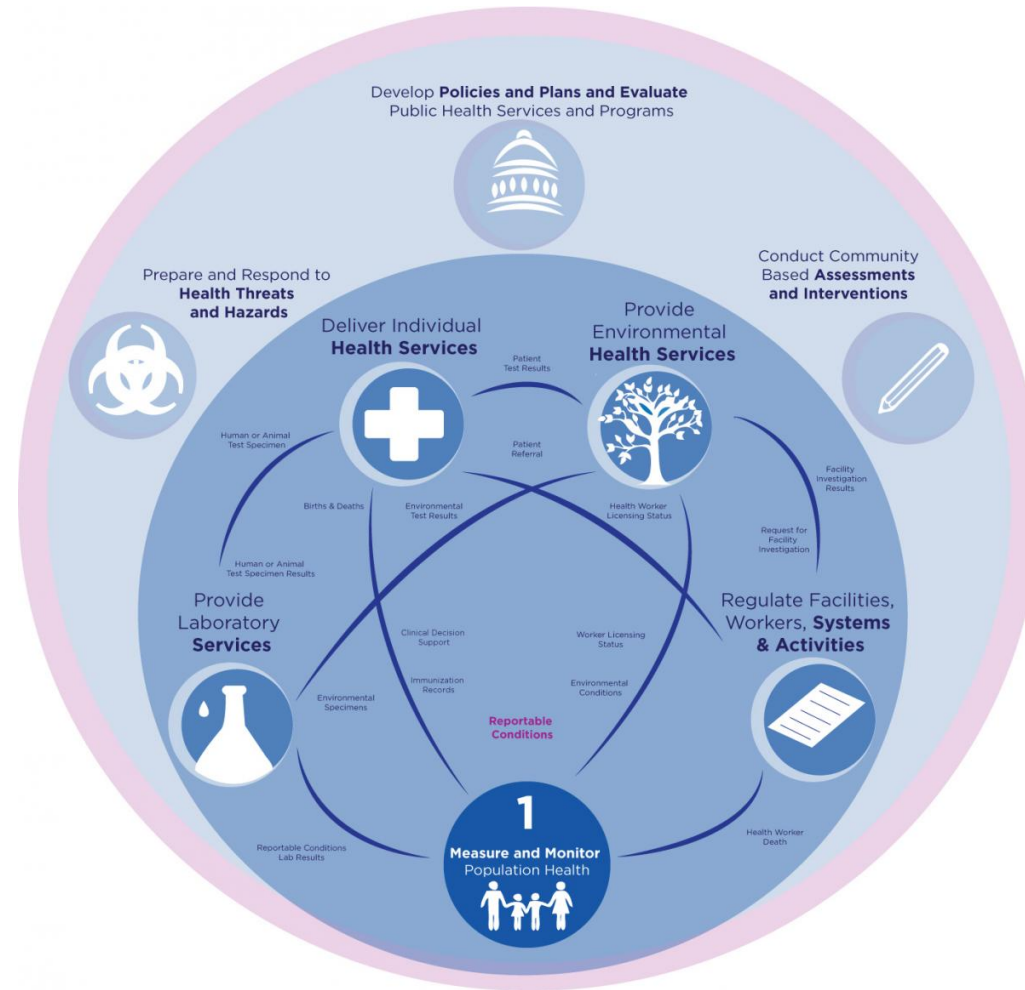
Providing support, assistance and expertise in performing analyses of data to drive better decision making



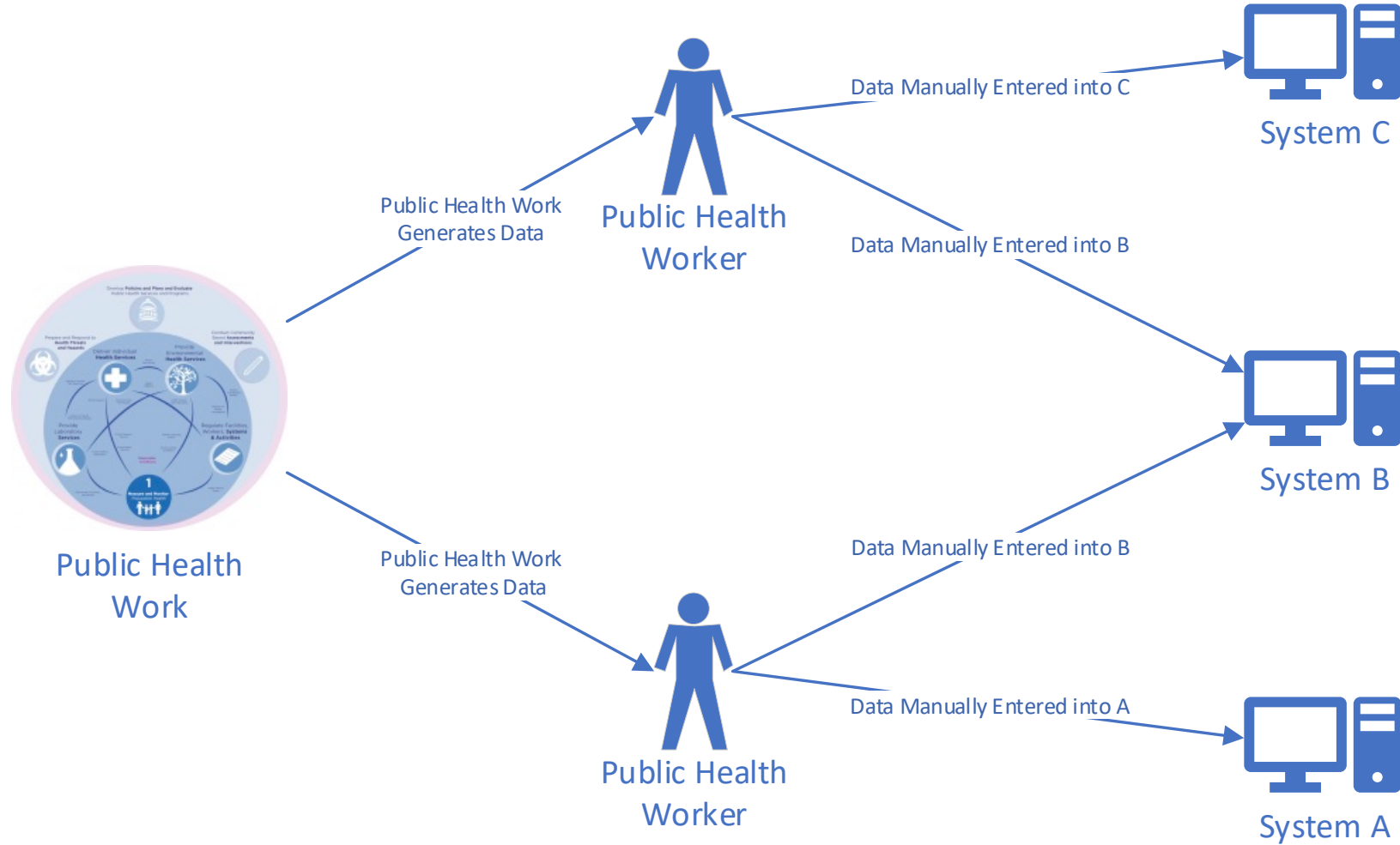
Knowledge Management

Bringing discipline and a methods-based approach to documenting and cataloging information flows, datasets, and business processes

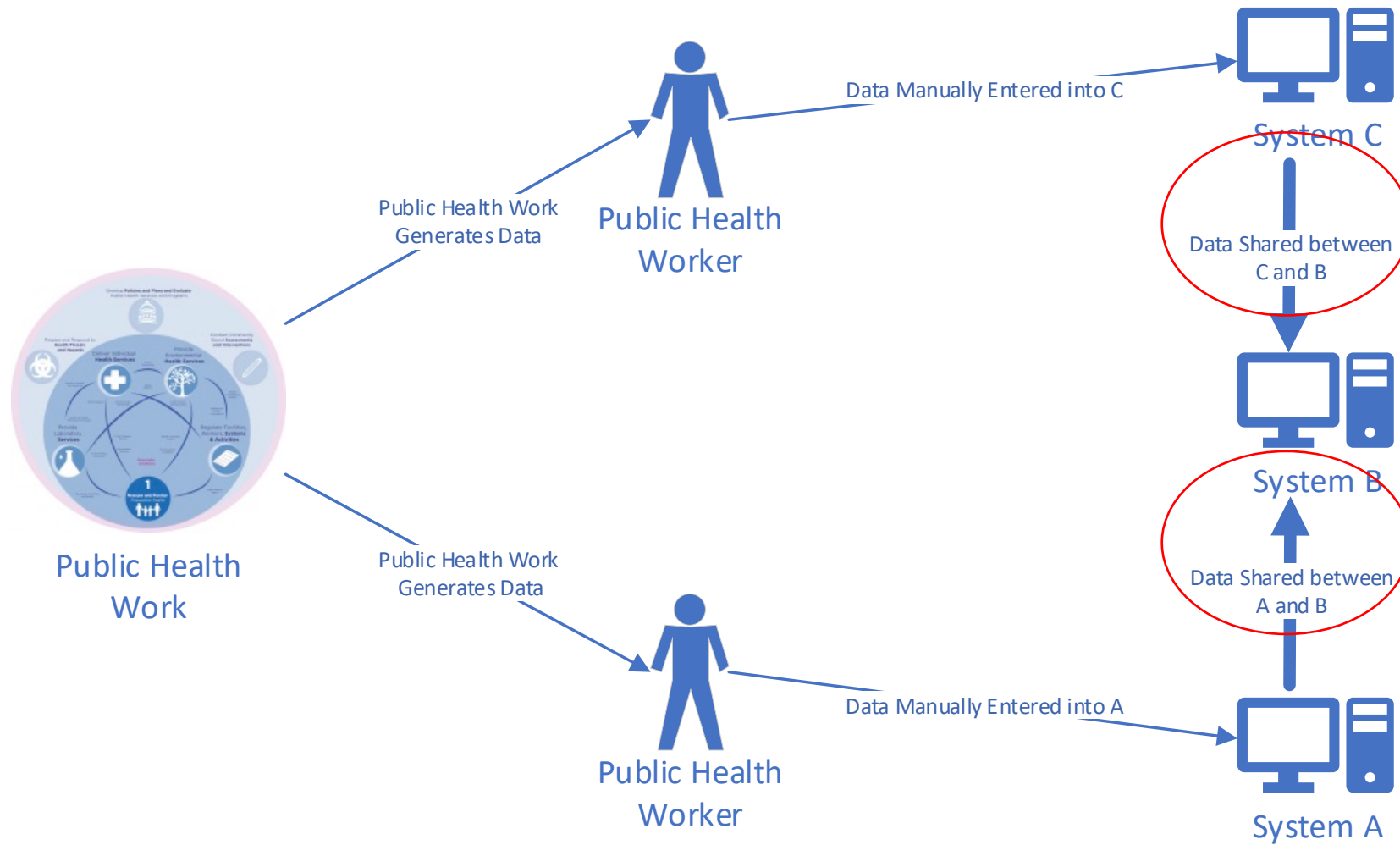
OPHI Strategic Focus



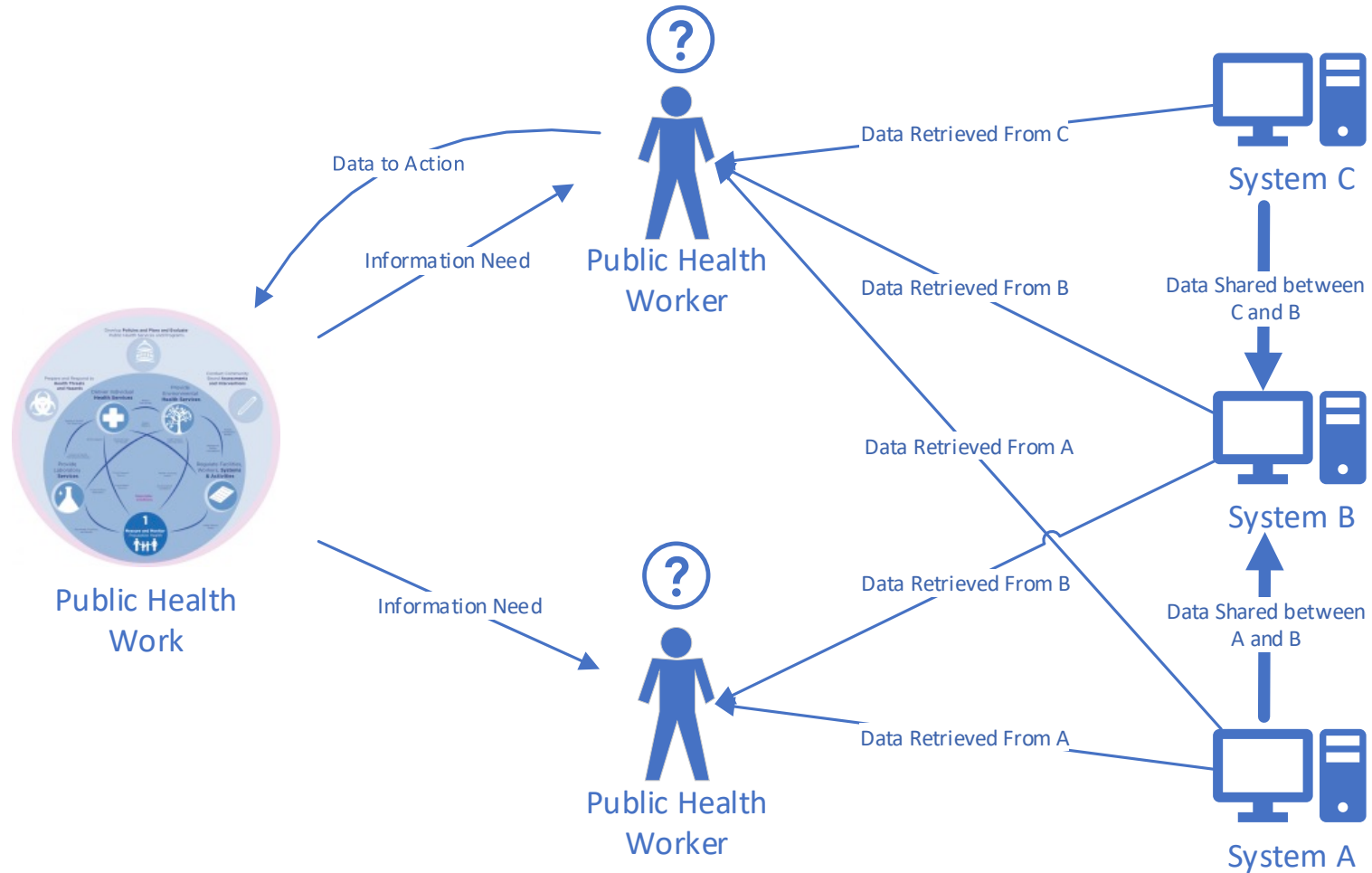
Interoperability



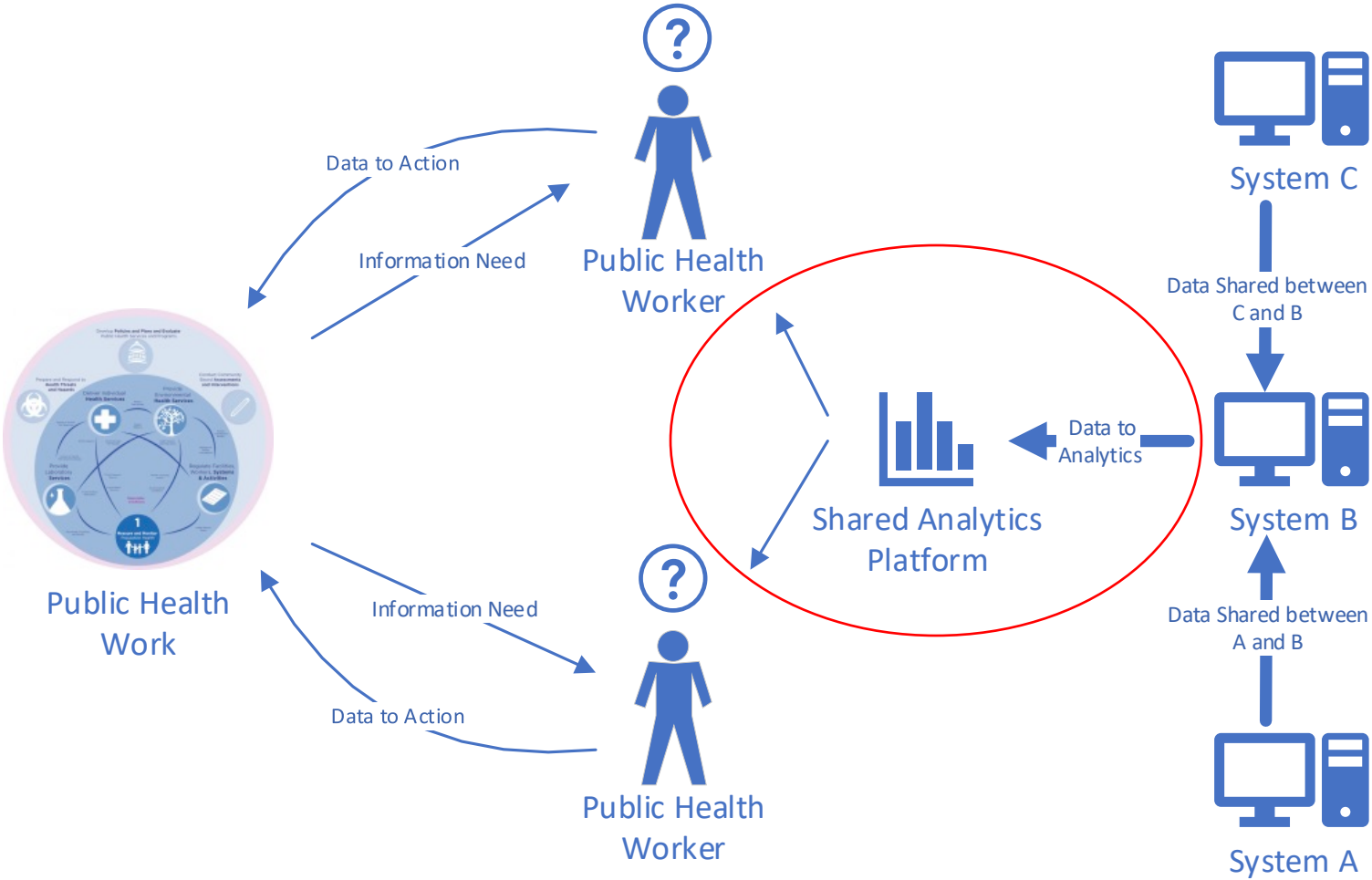
Interoperability



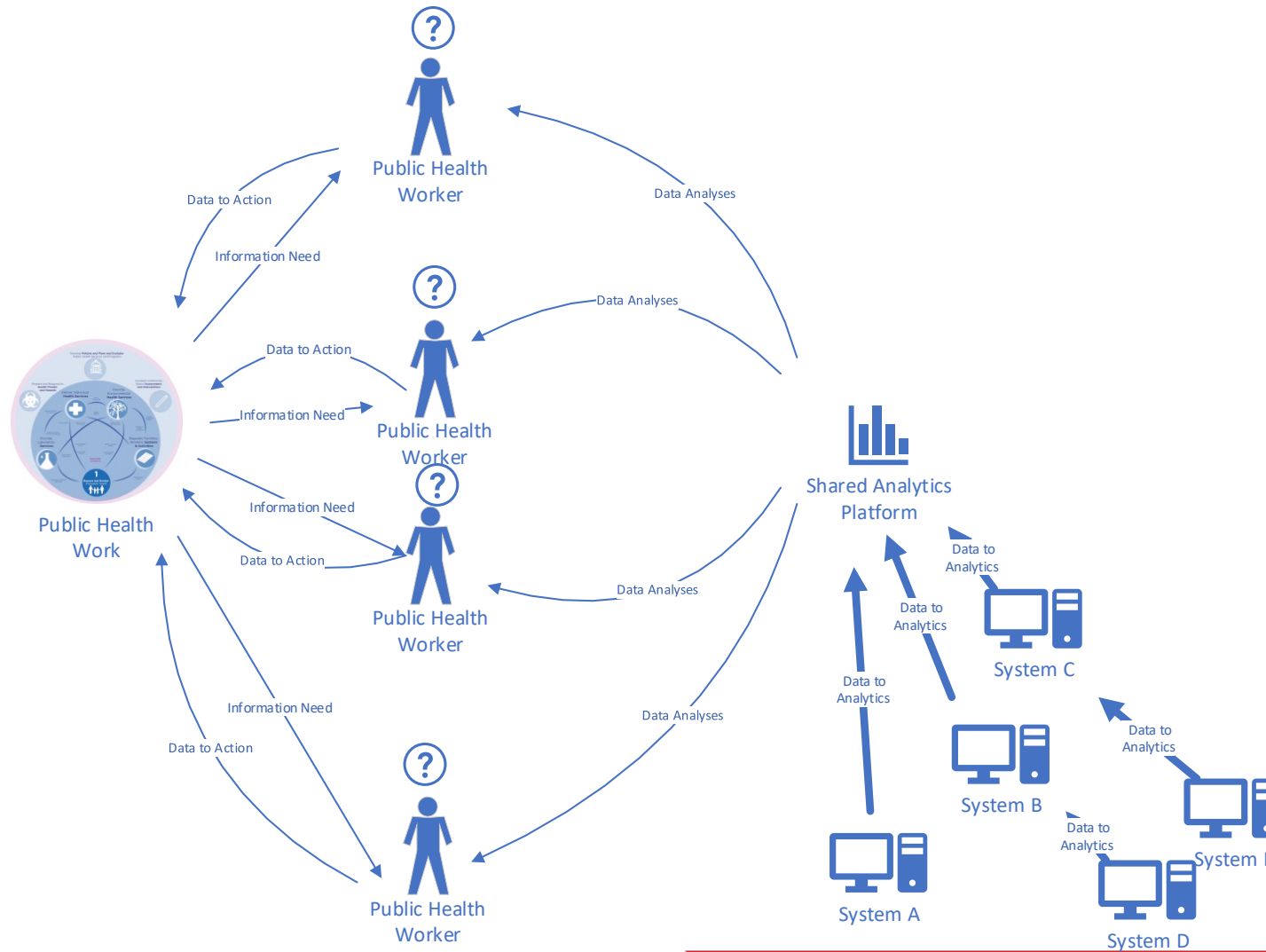
Business Intelligence and Analytics



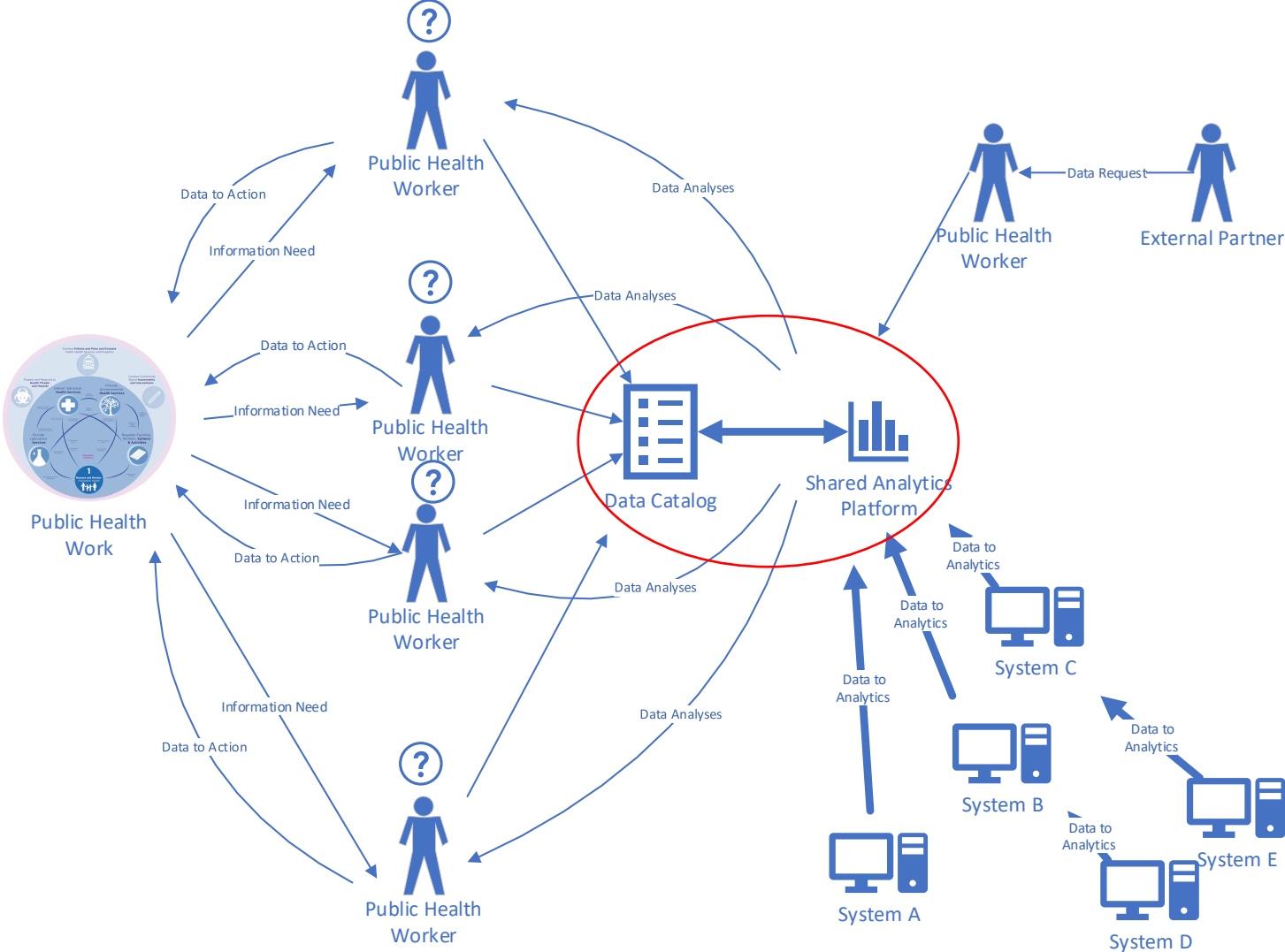
Business Intelligence and Analytics



Knowledge Management



Knowledge Management



OPHI Projects – Interoperability

Lab interface Project: (ETOR)

- Enabling health districts and public health lab to electronically exchange orders and results

Newborn Screening (ETOR)

- Enabling the electronic order and result reporting of newborn screening data with external partners
- Current effort is collaboration between OPHI, GPHL, APHL, and Piedmont Hospital

GAVERS Death Certificate Application Programming Interface

- Helping Vital Records shape the design of an interface to facilitate the communication of death certificate data between GAVERS and Fulton County Medical Examiner data. Grant obtained by VR, OPHI providing assistance

GaHIN and PDMP interconnectivity

- Goal of project is to make PDMP data accessible from the Georgia Health Information network for participating providers. Working alongside PDMP folks help figure out best solution for this effort.

ESM Data Warehouse

- Support development of WIC and EHR data warehouse to provide for data retention and staging as system implementation proceeds

OPHI Projects - Analytics

PDMP Death Data analysis

- Examining a cross between prescription data and death data to assess the impact that a proposed connection might have on the opioid epidemic response related to prescriptions filled post-mortem

Analytics Platform Development

- Working to establish an analytics platform that will bring together Business Intelligence tools with data and the interoperability tools to move that data

ESM Data Warehouse

- Support development of WIC and EHR data warehouse to provide for analytic capabilities

Georgia Tech HS6400

- Working with a team of Georgia Tech graduate students in the field of operations research to use advanced analytic techniques to examine various efficiencies in the foodborne illness case reporting process.

Superbowl Social Media Monitoring

- Collaboration with OPHI, communications and epi to perform monitoring of Twitter and Google search trends before and during the Super Bowl, to enhance detection of bio-threats

OPHI Projects – Knowledge Management

Data Catalog

- Creating a tool to build awareness of the datasets available for use across DPH and its programs. Includes business case and technical description of the datasets and contact information for its owners. Will have a public facing component and will integrate with data request system

Business Process Archive

- Implementing the Public Health Informatics Institute CRDM standard of requirements development and business process analysis to publish a collection of standard descriptions of various DPH processes to better inform how information moves through the organization.

Biosurveillance Quality Improvement

- Extending project that uses informatics techniques to identify key opportunities to improve how state and district public health perform biosurveillance activities in Georgia.

Master Patient Index (eMPI)

- Deploy a master patient index to resolve challenges related to matching patients across datasets that are used for analytics and ongoing data quality efforts

Questions

For more information, please contact:

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Next Meeting

The next Board of Public Health meeting is scheduled for
Tuesday, Sept. 10, 2019 @1 p.m.