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Direct Observation of Local Public Health (DOLPH)

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Faculty Disclosure

- No Conflict of Interest to Disclose.

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Educational Need

- The evidence base for understanding the "Black Box" of public health practice is lacking
- Investigation of practice variation is limited by the complexity of local public health and the context in which it is practiced
- Direct Observation represents a research approach that helped expand understanding of the structure, process and outcomes in primary care

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Objectives

Participants will:

- Describe the dilemma of public health practice variation
- Discuss components contributing to practice variation within Local Health Departments
- Describe the value of direct observation as a research approach to understanding practice complexity and reducing research error variation
- Examine a direct observation protocol for investigation of the role of local health departments in prevention of foodborne outbreaks

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Expected Outcome

- Active dialogue about the role of direct observation of local public health in building deeper understanding of the structure, process, and outcome of public health services

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Direct Observation of Local Public Health

- **Purpose:** Using the Foodborne Illness as a public health archetype, the Direct Observation of Local Public Health (DOLPH) study will seek to illuminate the "Black Box" of public health practice—structure, process, and outcome of the local health department (LHD) role in Foodborne Illness prevention, investigation, and intervention.

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Public Health Research

- “…efforts to improve public health systems and public health infrastructures have lagged behind comparable efforts in medical care. A persistent obstacle to public health system improvement has been the lack of information about what constitutes effective public health practice, and how best to organize, finance, and implement these activities.”

Mays, 2003

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Direct Observation of Local Public Health

- "Where did the field get the idea that evidence of an intervention's efficacy from carefully controlled trials could be generalized as THE best practice for widely varied populations and settings?"
  - Green LW. 2001. From research to "best practices" in other settings and populations. *Am. J. Health Behav*. 25:165–78

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Direct Observation of Local Public Health

- "In addition to practical trials, both well designed observational studies and alternative experimental and quasi-experimental designs can contribute important information on external validity and the impact of contextual factors."
  - Annu. Rev. Public Health 2007. 28:413–33

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Direct Observation of Local Public Health

- "To create useful evidence for policy and environmental interventions, other research methods are needed, including observational studies…"
- "Observational studies of analogous, naturally occurring scenarios include cross-sectional analyses, time-series analyses, and combinations of these."
  - AJPH, 2011: 101(12); 2203-2206

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Variation in Foodborne Illness Reporting

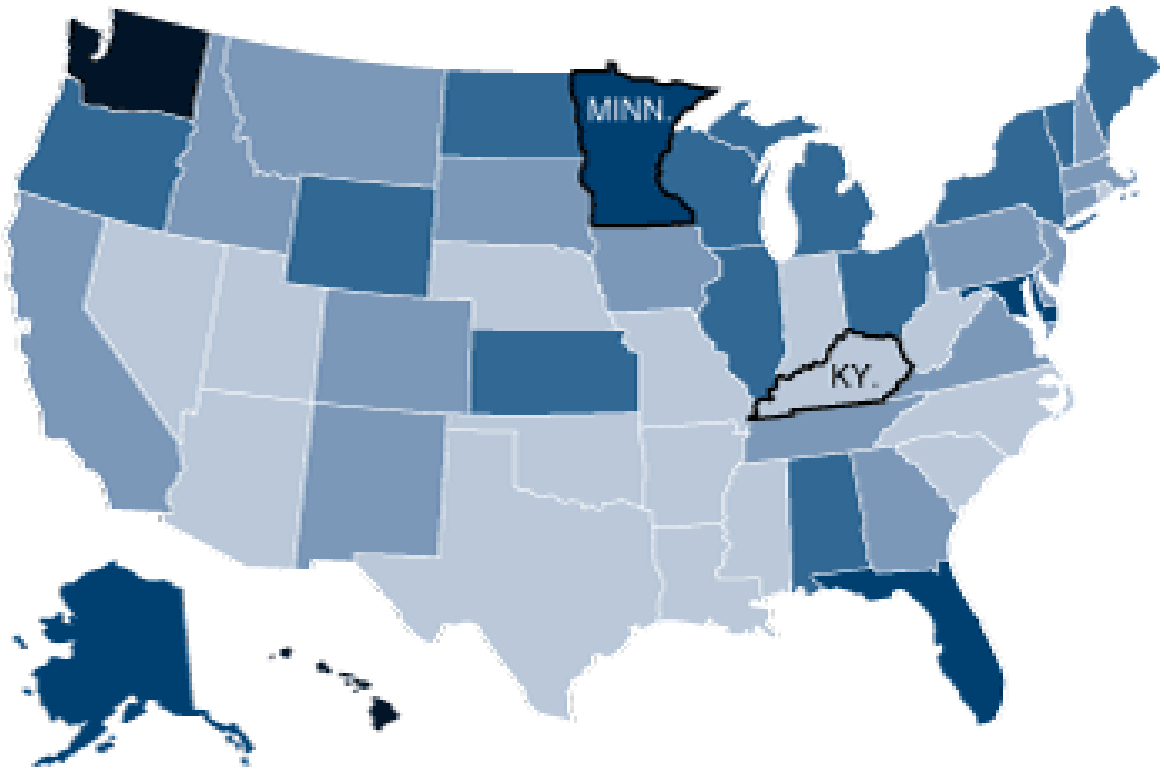
Mixed Results In Tracking Food Scares

Minnesota health officials investigate all reports of food-borne illness, but officials in many states do not. From 1990 to 2006, Minnesota reported 548 outbreaks, while Kentucky reported 18.

Reported outbreaks of food-related illness

Per 100,000 people, 1990 to 2006

Source: Centers for Disease Control and Prevention



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Direct Observation Insights

Insights from the Direct Observation of Primary Care Study[4]	Suggested Implications for Public Health Research
Conduct research from a generalist perspective	Conduct research from a public health practice perspective
Involve clinicians and office staff from community practices	Involve public health practitioners and office staff from local health departments
Commit to a transdisciplinary team	Commit to a transdisciplinary research team, given the transdisciplinary nature of public health practice
Use a multimethod research approach	Use a multimethod research approach
Remain open to emerging ideas and insights	Remain open to emerging ideas and insights
Think big, but start small	Think big, but start small

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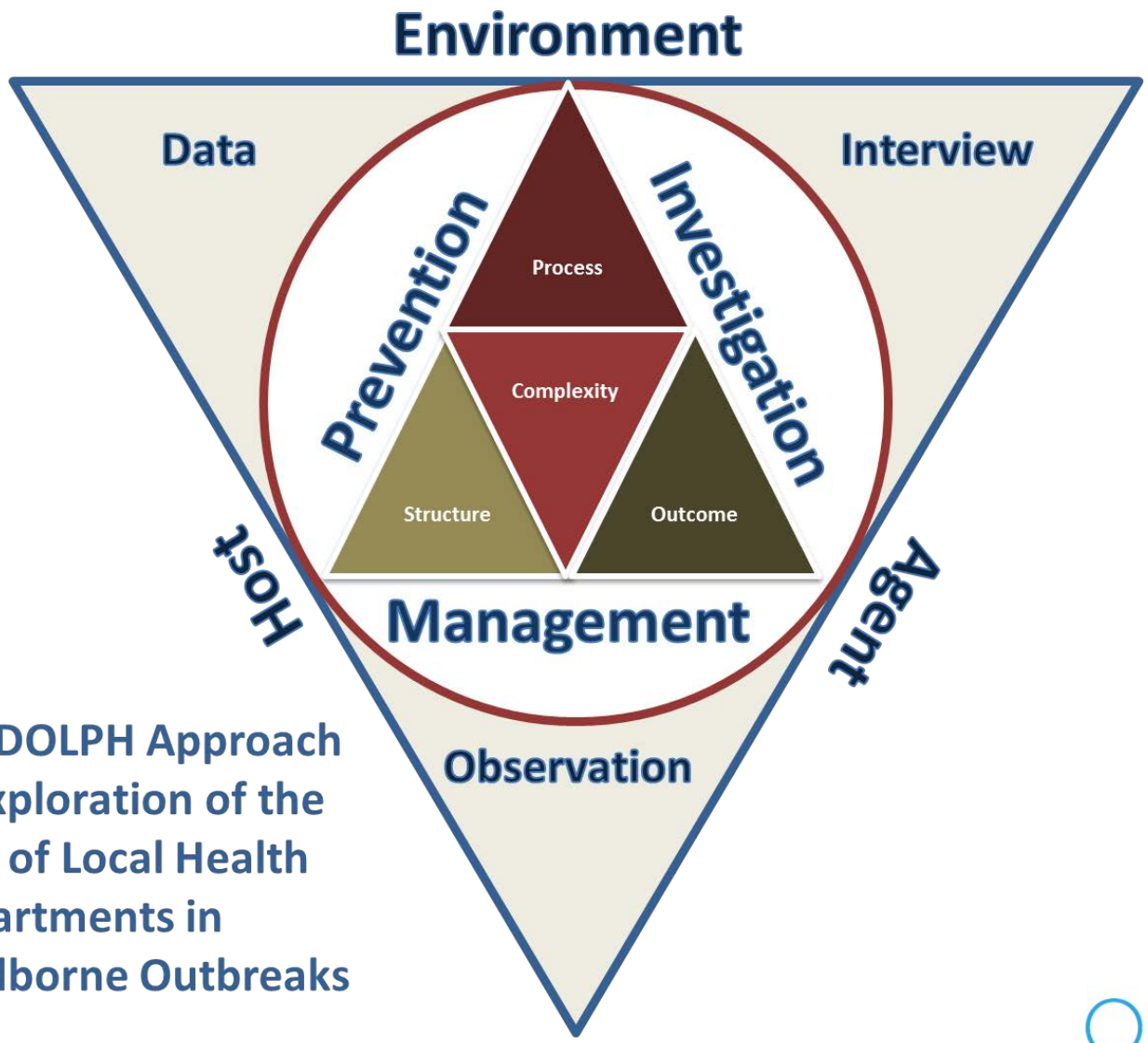

The DOLPH Approach to Exploration of the Role of Local Health Departments in Foodborne Outbreaks

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Foodborne Illness as an Archetypal Public Health Problem

- Allows observation of:
  - prevention (food inspection)
  - surveillance (epidemiology)
  - investigation of infectious gastroenteritis (epidemiologic investigation)
  - diagnosis (public health labs)
  - partnership (particularly with medical care services)
  - collaboration (cross jurisdictional LHD, Ohio Department of Health, Centers for Disease Control)
  - decision-making (public health leadership)
  - infection control (medical director, public health nursing)
  - intervention (public health leadership, medical director)
  - risk communication (public information officer)

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What We ***Know*** and what We ***Don't***: The Black Box of Local Public Health

Policy and Legal Authority

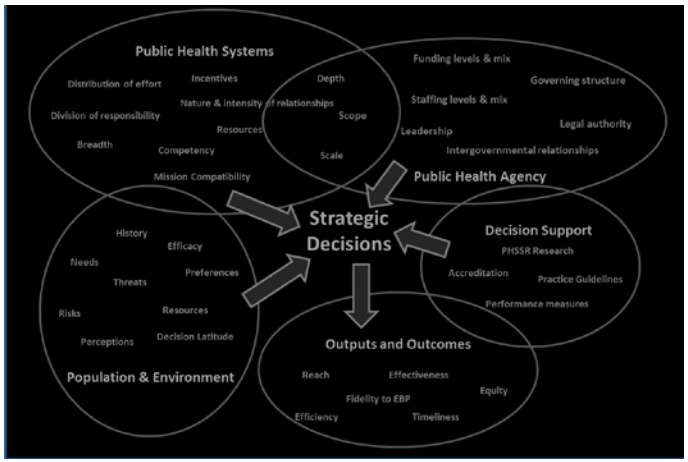
Funding

Partnership

Human Capital

Population Needs

LHDs and Delivery Systems



Service Delivery

Sources of Valid and Error Variation

Health, Economics, and Systems Outcomes

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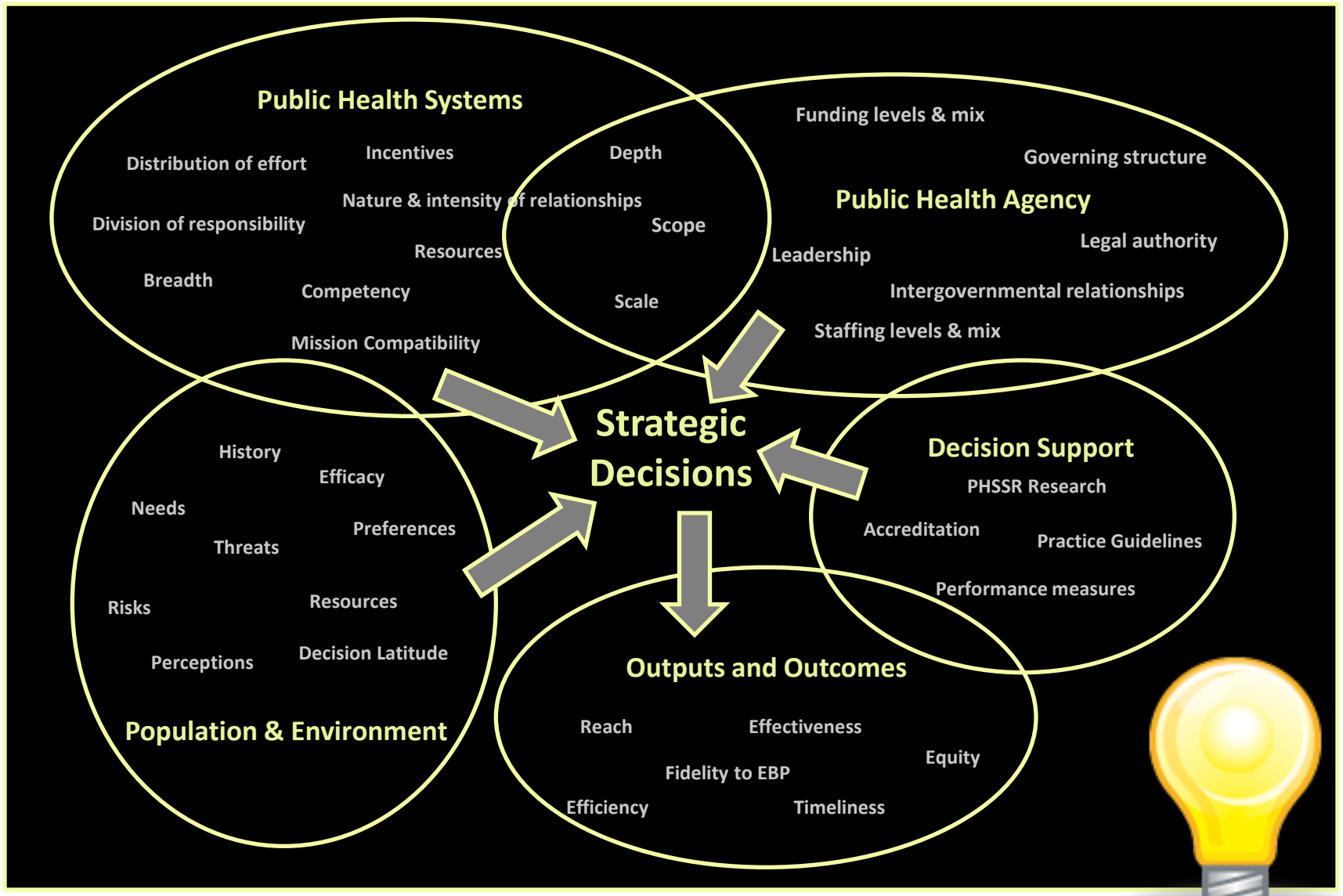
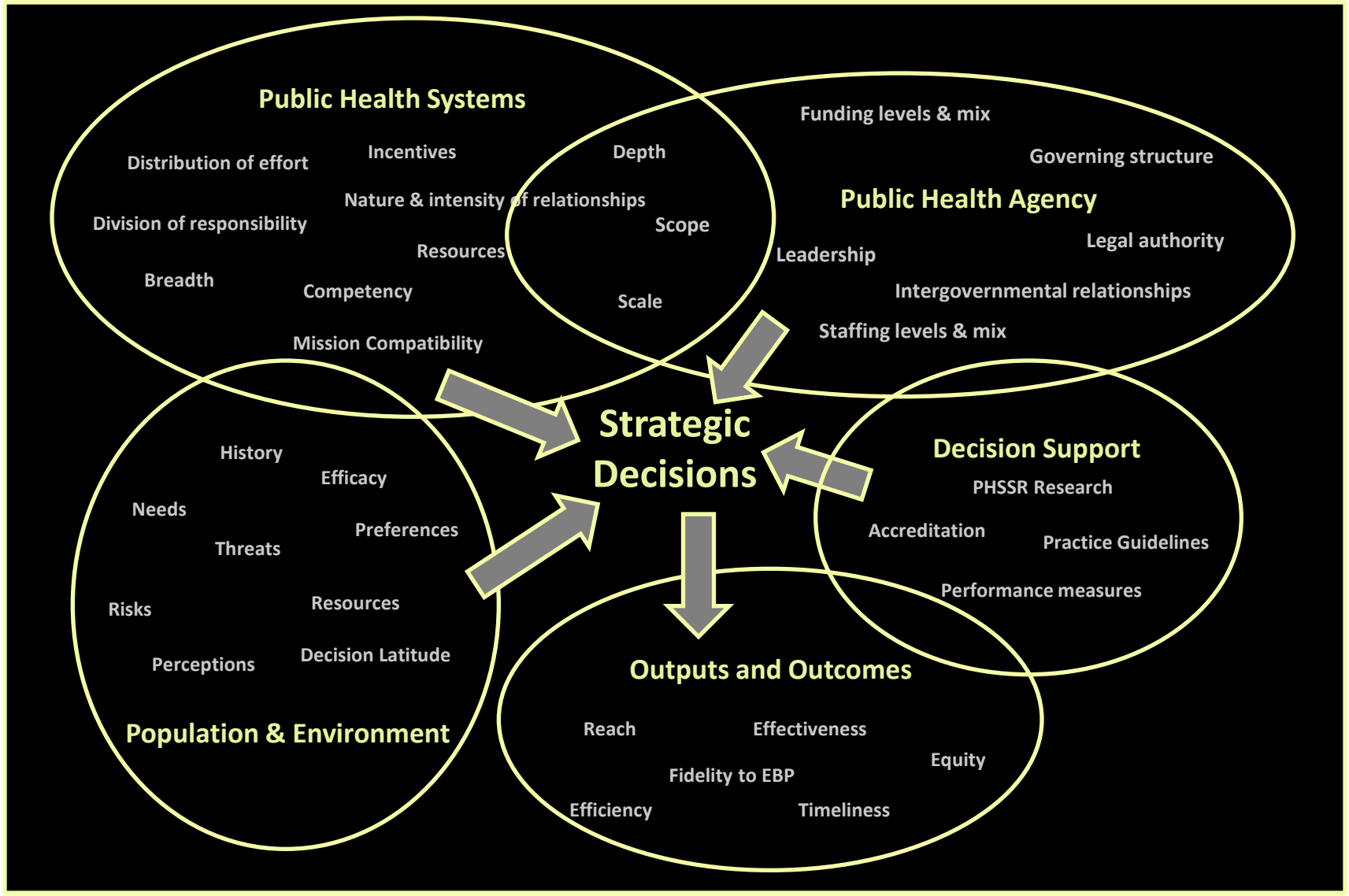
Illuminating the Black Box of Local Public Health



Illuminating the Black Box of Local Public Health



The Role of the Local Health Department in the Direct Observation Study of Foodborne Illness

- Local health departments will be where information is collected through the mechanism of direct observation
- They will be partners with the schools and programs of public health
- As a partner each LHD will provide access to properly trained and supervised student observers during the various steps in foodborne illness prevention, investigation, and management
- Important to understanding and disseminating results

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Analyzing and Interpreting DOLPH Results: Qualitative Analysis

- The quasi-statistical style will be used to analyze the structured direct observations
- The template style involves analysis of data gathered with an existing classification scheme, which will include some of the structured observations
- The editing style will be utilized for the true qualitative data and will create categories or coding schemes only after review of the field notes
- The immersion/crystallization style may also be used for field notes and unstructured observation
  - This style seeks to avoid categorization altogether, or only form such a scheme at the conclusion

Crabtree BF, Miller WL. Doing Qualitative Research. 2nd Edition. Sage Publications. Thousand Oaks CA, 1999

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Focused Observation Protocol: Process

Interaction

During the interaction(s), does:

The PIC/Employee Admits Uncertainty:	Not at all	Once	More than once
The Sanitarian Admits Uncertainty:	Not at all	Once	More than once
"I don't know."			
The PIC/Employee Use Humor:	Not at all	Once	More than once
The Sanitarian Use Humor:	Not at all	Once	More than once
Either party says or does something that causes the other to laugh.			
The PIC/Employee Interrupts the Sanitarian:	Not at all	Once	More than once
The Sanitarian Interrupts the PIC:	Not at all	Once	More than once
Even if the interruptions seem "justified" to you.			
The Sanitarian Use Unexplained Jargon:	Not at all	Once	More than once
Technical jargon without explaining the meaning or confirming that the food service operator understands the meaning.			
Argumentation/Conflict Occur:	Not at all	Once	More than once
Disagreement resulting in the Sanitarian and food service operator appearing to be on "different teams", rather than cooperative or collaborative. Note nature of conflict under "Field Notes".			
The Sanitarian Give Positive Feedback to PIC:	Not at all	Once	More than once
Compliments food service operator or food service establishment.			
The Sanitarian Give Feedback in a Negative way to PIC:	Not at all	Once	More than once
Criticizes food service operator or food service establishment in a negative manner.			

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Focused Observation Protocol: Content

During the inspection, did the Sanitarian check:

Refrigerator Check	Apparently	Observed	Comment Made	No or Not Explicitly
Dishwasher Check	Apparently	Observed	Comment Made	No or Not Explicitly
Ice machine	Apparently	Observed	Comment Made	No or Not Explicitly
Other Equipment Check (Meat slicer)	Apparently	Observed	Comment Made	No or Not Explicitly
First Aid	Apparently	Observed	Comment Made	No or Not Explicitly
Thermometer calibration	Apparently	Observed	Comment Made	No or Not Explicitly
Food Storage	Apparently	Observed	Comment Made	No or Not Explicitly
Food stored, prepared, displayed in a manner that did adequately protects it from contamination.				
Food Holding Temp or Time	Apparently	Observed	Comment Made	No or Not Explicitly
Check Sanitizing Fluids (pH paper)	Apparently	Observed	Comment Made	No or Not Explicitly
Temperature, concentration, or cleanliness of sanitizing rinse solutions meet the standards of the food code.				
Hand-washing facilities adequate and/or accessible.	Apparently	Observed	Comment Made	No or Not Explicitly
Cleanliness of clothes, surfaces, cleaning sponges	Apparently	Observed	Comment Made	No or Not Explicitly
Date marking/Date stamping of prepared foods	Apparently	Observed	Comment Made	No or Not Explicitly
Presence of vermin and/or excrement	Apparently	Observed	Comment Made	No or Not Explicitly

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Inter-Rater Agreement

Variable	N	Percentage
PIC Age	24	66.7% (31-40)
PIC and RS Shake Hands	24	91.7% (Yes)
Check-In Time	23	95.8% (1-5 minutes)
RS uses humor	24	87.5% (More than once)
RS admits uncertainty	23	87% (Not at all)
RS uses unexplained jargon	24	100% (Not at all)
Sanitation	24	79.2% (Comment made)
Cross Contamination	24	87.5% (Comment made)
RS gave clear feedback	24	91.7% (More than once)
RS discuss improvement plan	24	83.3% (More than once)
RS elicits questions	24	75% (Once or more)
Inspection results discussed privately	24	54.2% (No)
Hand on Doorknob Syndrome	24	58.3% (No)

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Frequency Counts

Variable	N	Mean +/- SD	Min	Max
# Employees RS interacts	24	7.58 ± 2.92	4	13
# Countertop inspections	21	3.00 ± 1.79	1	8
# Prep area inspections	24	4.58 ± 1.66	2	9
Equipment Check	24	6.96 ± 3.53	1	15
RS squats/bends over	24	9.75 ± 4.06	4	17
# Verbal Warnings given	24	2.94 ± 1.77	0	5

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Discussion

- Direct observation represents a methodology worth examining in LHDs
- Observational protocol requires much input and beta-testing
- Preliminary results indicated a high level of agreement across different categories

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Limitations

- Complex approach to complex topics
- Current results very preliminary

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Strengths

- Multimethod approach has potential to:
  - Decrease error variation
  - Obtain deeper understanding of health workforce activities and impact
  - Untangle complexity of LHD function

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Thank You!

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