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Ohio Public Health Delivery and Cost Study (DACCS)

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Ohio DACS Purpose:

- Use RAPHI (Ohio's Public Health Practice Base Research Network) to investigate delivery and cost of public health services to:
 - Develop and implement **standard methods**
 - Support **data-driven, rational decision making**
 - Investigate the **variation, value, and equity** of core public health services and foundational capabilities





Ohio Public Health

- 🌳 88 counties, 125 LHDs
- 🌳 70% of Ohio LHDs serve county or combined County/City districts
- 🌳 30% of Ohio LHDs represent City districts
 - 32% nationally
- 🌳 58% of Ohio departments serve populations less than 50,000
 - 63% of the Nation's LHDs



Ohio DACS Approach

-  Quantitative model for **cost estimation for 5 core public health services**
-  Direct observation approach to examine one core service, **public health nuisance abatement**

Specific Aim 1

- 🌳 Estimate and validate the cost per unit of service for 5 *Core Public Health Services* for Ohio LHDs
 - Which core services?
 - How to frame units of production?
 - How to link with other DACS projects to maximize impact and generalizability of findings



Specific Aim 2

- 🌳 Investigate the influence of organizational (structure and process) and community (social demographics) factors on the cost of public health service delivery
 - Each of these is likely to vary by core service, increasing the complexity of our investigation
 - Variation in the data we have to work with will also complicate



Specific Aim 3

- 🌳 Ascertain how variation in the cost of *Core Public Health Services* among Ohio LHDs relates to equity in resource allocation and public health outcomes
 - How do we measure equity of services, resources, and outcomes?

Ohio Minimum Package of Local Public Health Services

Core public health services

All LHDs should be responsible for providing the following services in their district — directly or by contracting with another LHD

- **Environmental health services,*** such as water safety, school inspections, nuisance abatement, and food safety (restaurant and grocery store inspections)
- **Communicable disease control,** vaccination capacity, and quarantine authority*
- **Epidemiology services** for communicable disease outbreaks and trending* and disease prevalence and morbidity/mortality reporting*
- **Access to birth and death records**
- **Health promotion and prevention** (health education* and policy, systems, and environmental change)
 - Chronic disease prevention (including tobacco, physical activity, nutrition)
 - Injury prevention
 - Infant mortality/preterm birth prevention
- **Emergency preparedness,** response, and ensuring safety of an area after a disaster
- **Linking people to health services** to make sure they receive needed medical care*
- **Community engagement,** community health assessment and improvement planning, and partnerships

*Service mandated by state of Ohio (ORC, OAC) (Note: Ohio law mandates several specific services related to environmental health and communicable diseases. Not all are listed here. See Appendix D for complete list.)

Other public health services

(Varies by community need as determined by Community Health Assessments)
LHDs play a role in assuring that these services are provided in their community — either by local public health or other organization(s), including health care providers and other government agencies

Clinical preventive and primary care services

- Immunizations
- Medical and dental clinics (primary care)
- Care coordination and navigation
- Reproductive and sexual health services (including STD testing, contact tracing, diagnosis, and treatment)

Specific maternal and child health programs, such as

- WIC (Women Infants and Children) nutrition program
- Help Me Grow home visiting program (HMG)
- Bureau for Children with Medical Handicaps program (BCMh)

Non-mandated environmental health services, such as

- Lead screening, radon testing, residential plumbing inspections, etc.

Other-optional depending on community need and other available providers

- Home health, hospice care, home visiting programs (other than HMG)
- School nurses; Drug and alcohol use prevention; Behavioral health
- Municipal ordinance enforcement

Foundational Capabilities

All LHDs should have access to the following skills and resources. Access can occur through cross-jurisdictional sharing.

Quality assurance

- Accreditation
- Quality improvement and program evaluation
- Identification of evidence-based practices

Information management and analysis

- Data analysis expertise for surveillance, epidemiology, community health assessment, performance management, and research
- Information technology infrastructure
- Interface with health information technology

Policy development

- Policy analysis and planning
- Expertise for policy, systems, and environmental change strategies

Resource development

- Grant writing expertise and grant seeking support
- Workforce development (training, certification, recruitment)
- Service reimbursement, contracting, and fee collection infrastructure (interface with third party payers)

Legal support

- Specialized consultation and analysis on public health law

Laboratory capacity

- Environmental health lab
- Clinical lab services (as appropriate)

Support and expertise for LHD community engagement strategies

- Community and governing entity engagement, convening and planning
- Public information, marketing, and communications
- Community health assessment and improvement planning
- Partnerships to address socio-economic factors and health equity

Core Services



Environmental health services

- water safety
- school inspections
- nuisance abatement
- food safety (restaurant and grocery store inspections)
- Vector borne programming



Communicable disease control

- vaccination capacity
- quarantine authority
- epidemiologic investigation



Epidemiology

- services for communicable disease outbreaks and trending
- disease prevalence and morbidity/mortality reporting
- Public health surveillance



Core Services




 **(Access to birth and death records)**

 **Health promotion and prevention**

- Health education
- Policy
- Systems, and environmental change
- Chronic disease prevention
 - Tobacco
 - Physical activity
 - Nutrition
- Injury prevention
- Infant mortality/preterm birth prevention



Core Services

-  **Emergency preparedness**
 - Response
 - Ensuring safety of an area after a disaster
 - Drills and planning
-  **Linking people to health services**
 - Access to medical care
 - Links between Medicine and Public Health
-  **Community engagement**
 - Community health assessment and improvement planning
 - Partnership

Foundational Capabilities

Quality Assurance

- Accreditation
- Quality improvement and program evaluation
- Identification of evidence based practices

Information Management and analysis

- Data analysis expertise (overlap with epidemiology)
- IT Infrastructure
- Interface with Health Information technology



Foundational Capabilities

Policy development

- Policy analysis and development
- Expertise for policy, systems, and environmental change strategy
- Data driven policy

Resource development

- Grant writing/seeking
- Workforce development
- Service reimbursement, fee collection infrastructure

Legal support

Laboratory capacity



Quantitative Component

- 🌳 Existing AFR and Staffing data 2005-2013
- 🌳 For 5 specific services, 2005-2013, for each individual LHD, we need:
 - spending (broken down by staff, supplies, overhead, etc.)
 - staffing (by job position)
 - **units produced** (by specific product if outputs are not identical)
 - Necessary for any measure of efficiency
 - Need to effectively communicate efficiency measures without offending LHDs
 - The clearer the outcomes, the more valuable the investigation



Core Service Options

1. Food safety
2. Immunization*
3. Emergency preparedness
4. Community health assessment
5. Epidemiologic investigation
6. Service reimbursement, fee collection infrastructure**
7. Direct clinical service* (STI?)
8. Environmental inspections (lead, black mold, healthy home)
9. Communicable disease surveillance and prevention
10. Obesity prevention (Health Promotion)
11. Substance abuse prevention, including prescription drugs (Health Promotion)
12. Tobacco control (Health Promotion)
13. Maternal and child health*
14. Public health information technology**
15. Legal support**
16. (Application of the Cost of Doing Business Model)

*Not listed as core service; **Foundational capacity



The Cost of Doing Business Model

1. Agency type (city, county, shared)
2. Population size
3. Rural setting
4. Race
5. non-English speaking
6. Age
7. Income
8. Uninsured
9. Physician supply
10. Breadth of services offered
11. Core service coverage
12. Clinical care focus



Qualitative Component

Nuisance Abatement

- a mandated task associated with:
 - Essential Public Health Service 2: Diagnose and investigate health problems and health hazards
 - Essential Public Health Service 6: Enforce laws and regulations that protect health and ensure safety
- Public health nuisance enforcement represents a prominent duty of local health departments that has received little notice.

Qualitative Component

- 🌳 Six diverse, geographically distinct LHDs
- 🌳 Trained student observers
- 🌳 Intensive observation of nuisance abatement activity
- 🌳 Direct observation, activity logs, administrative data
- 🌳 Resource-based interviews

Qualitative Component

- 🌳 Observational protocol
- 🌳 Time and motion component
- 🌳 Builds service production cost model based on micro-level estimates of input resources
- 🌳 Pre and post event interviews
 - EH personnel
 - Collaborating departments
 - Impacted public



Other information

Collaboration with other DACS grantees

- Washington
- North Carolina
- Others

18 month grant

- In field with direct observation January through June 2014



Anticipated Findings

Quantitative Component

- Variation in public health spending and staffing for core services
- Relationship of these variations to:
 - Public health outcomes
 - LHD characteristics
 - Jurisdictional characteristics
 - Cost of Doing Business model



Anticipated Findings

Qualitative Component

- The nature and content of nuisance abatement
- Time, staffing, and resources expended
- The role of collaboration with other governmental agencies regarding nuisance abatement
- The value and utility of nuisance abatement
 - To other agencies or departments
 - To the public
- The “product” of nuisance abatement



Questions for the Group

- 🌳 Measuring equity
- 🌳 Unit cost measures
- 🌳 Outcome variables of interest
- 🌳 Portfolio vs individual services
- 🌳 Generalist vs specialist services
- 🌳 How do we make cost estimates without considering the foundational capabilities necessary to support service delivery

