Out of Context: Mapping Quality Improvement Opportunities with Context Diagrams

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Introductions

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Take Aways

- Context diagrams and why they are useful to Local Public Health agencies.
- How common public health information/data exchange partners for Family Home Visiting were identified using context diagrams.
The “Business” of Public Health

• The activities you do to provide the services that meet the public health objectives of the communities you serve.

• Business Process:
  A set of activities and tasks that logically group together to accomplish a goal or produce something of value for the benefit of the organization, stakeholder, or customer.
Typical Public Health Business Functions

- APR/General Ledger
- Billing
- Budgeting
- Case Management
- Child/Maternal Services
- Clinical Operations
- Clinical, Eligibility checking
- Clinical, Registration
- Community Health
- Dental Clinic support
- Emergency Preparedness
- Environmental Health
- Family Planning
- Grant Management/Reporting
- Health Education
- Home Health
- Hospice
- HR
- Immunization Management
- Laboratory Operations
- Nutrition Management
- Outcomes Measurement
- Pharmacy Management
- Provider Relations
- Public Health Staff Training
- Referral
- School Nurse Program
- Targeted Home Visiting
- WIC
Targeted/Family Home Visiting

- Collects key data common to most other client-based processes
- Most agencies are performing some form of this public health function
What is Business Analysis?

The discipline of **identifying business needs** and **determining solutions** to business problems. Solutions often include a systems development component, but may also consist of **process improvement**, organizational change or strategic planning and policy development.
Business Process Analysis Tools

- There are a variety of tools for different aspects of business analysis. Together they provide the information base needed for business process analysis.
- Some common tools are:
  - Context Diagrams
  - Task Flow Diagrams
  - A Business Process Matrix
  - Use Case Diagrams and Studies
Sally’s Sandwich Shop
Sally’s Sandwich Shop: Order Fulfillment – Context Diagram

Customer

Order taker

- Greeting
- Order detail
- Bill
- Payment
- Change
- Completed Order

Sandwich station

Sandwich order

Sandwich

Drink station

Drink order

Drink

Side order

Side salad

Side station
Context Diagrams

- Context Diagrams:
  - Represents the environment in which tasks occur showing all the *entities* (the *who*) in a business process and the *transactions or exchanges* (the *what*) among them
  - Represents the *outcome* (the *why*) of the process, which indicates the objective has been met
  - Shows necessary *inputs* to and *outputs* from the business process
  - Help scope the process (where does one business process end, where does one begin)
<table>
<thead>
<tr>
<th>Symbol</th>
<th>Symbol Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>🔄</td>
<td>Entity</td>
<td>A person, system or group of people who performs one or more tasks involved in a process.</td>
</tr>
<tr>
<td>🔄</td>
<td>Transaction</td>
<td>Exchanges between entities. These exchanges may be data, forms, information, goods, or services.</td>
</tr>
<tr>
<td>→</td>
<td>Outcome</td>
<td>The resulting transaction of a business process that indicates the objective has been met. May become an input or trigger for another process</td>
</tr>
<tr>
<td>←</td>
<td>Input</td>
<td>Information received by the business process from external sources (not generated within the process).</td>
</tr>
<tr>
<td>→</td>
<td>Output</td>
<td>Information transferred out from a process.</td>
</tr>
<tr>
<td>🔄</td>
<td>Storage</td>
<td>Indicates a place for holding physical transaction materials, either temporarily or permanently.</td>
</tr>
<tr>
<td>🔄</td>
<td>Trigger</td>
<td>An event or input that triggers the start of a process.</td>
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Sally’s Sandwich Shop: 
Order Fulfillment – Context Diagram 

LEGEND 

TRANSACTION 
OUTCOME 
INPUT 
OUTPUT 
ENTITIES: 
LHD 
DIRECT INTERACTION 

GOAL: Timely provision of food and service to the customer at the best value. 
OBJECTIVE: Accurately process food order for and receive payment from drive-through customers in a minimal amount of time. 
BUSINESS RULES: FDA/USDA standards; cashier does not handle unwrapped food; cashier provides greeting and acts as point of contact for all food stations. 
TRIGGER: Customer arrives at drive-through station. 
TASK SET: Greet customer; take order; process order; bill customer; receive payment; receive order from stations and deliver to customer.
Building a Targeted Home Visiting Context Diagram

- Visited 9 local public health agencies, both urban and rural
- Interviewed the staff who do the work
- Built a diagram starting with receipt of a referral through the outcome of the initial assessment visit.
Mower-
Before
Carlton - Before
St. Paul Ramsey Example
What does a Context Diagram show us?
Context Diagrams and Quality Improvement

- Need to know where you are in order to figure out where you want to go – and the best way to get there.
- A numbered context diagram can be a starting point for building a workflow diagram.
- What or who may be affected if your process is changed?
Local public health agencies recognized that the context diagrams are a valuable tool to learn about their processes for quality improvement efforts.
Mower County Home Visiting: Client referral/intake, registration, initial visit
Mower County QI

- Helped us visually see our current business process for Family Home Visiting
- Clearly showed how our agency information flowed
- Information exchange = manual or electronic
- Got us to talking, planning and organizing
- Led to a Quality Improvement Project for Family Home Visiting
Is there any Value?

- Use for future analysis of business processes
- Fits with Public Health Accreditation
- Recognize the Value of this concept
- Practice it on any agency process
Things I Never Learned in Nursing School

- Accreditation Standards for Public Health
- Billing
- Budgeting
- Data Input
- Electronic Medical Records
- Emergency Preparedness
- Finance Management
- Grant Writing/Reports
- Incident Command System
- Information Technology
- Jail Health Management
- Mass Dispensing Clinics
- Meth Lab Clean-ups
- Quality Improvement in Public Health
- Responding to a Pandemic
- Social Network and HIPAA
- Systems, Policy Development & Environmental Change
Things I Never Learned in Nursing School

Business Analysis
Public Health Accreditation Board
Quality Improvement

- Standard 9.1: Use a Performance Management System to Improve Organizational Practice, Processes, Programs and Interventions
- Standard 9.2: Develop and Implement Quality Improvement Processes Integrated Into Organizational Practice, Programs, Processes and Interventions.
Commonalities?

How can there possibly be any?!?
Commonalities!
Commonalities!
Common Exchange Partners for Targeted Home Visiting
Common Exchange Partners for Targeted Home Visiting

- Client
- Other County/Local Public Health Services
- MDH Programs
- DHS Programs
- Schools
- Local Public Health in another county
- Primary Care Providers/Hospitals
- Other Service Providers
- Out-of-state Primary Care or Health Departments
- Billing/Payers
- Grantors
- Legal
Why Bother with Business Analysis?

“Public health departments are part of the first line of defense in keeping the public healthy and safe. This duty to safeguard population health is best met by combining public health science with the highly reliable techniques of quality improvement. There is growing evidence that Quality Improvement techniques can be applied successfully in public health.”

Defining Quality Improvement in Public Health
Riley, William J. PhD; Moran, John W. PhD, MBA, CQIA, CQM, CMC; Corso, Liza C. MPA; Beitsch, Leslie M. MD, JD; Bialek, Ronald MPP; Cofsky, Abbey
Benefits of Business Process Analysis

- Enables you to see problems or possible areas for improvement in your process
- Enables more effective planning, implementation, and operation of systems and changes to systems or processes
- Aids development of requirements for new IT systems
Take Aways

- Context diagrams and why they are useful to Local Public Health agencies.
- How common public health information/data exchange partners for Family Home Visiting were identified using context diagrams.
- How can you use context diagrams in your agency?
Questions?