Master of Public Health

Applied Practice Experience

by

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MPH Candidate

submitted in partial fulfillment of the requirements for the degree

MASTER OF PUBLIC HEALTH

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Chapter 1 - Portfolio Products

Jackson County Public Health (JCPH) serves a population of over 379,000 residents, primarily in Eastern Jackson County, which encompasses all areas outside of Kansas City in the state of Missouri. I worked in the Epidemiology and Data Analytics Division as part of the Communicable Disease team, under the mentorship of Dr. Adeyemi Adedokun, DrPH, MPH, the Communicable Disease Epidemiology Coordinator, and my preceptor, Ximena Ilabaca-Somoza, MD, MPH, the division manager. My role in this division involved assisting with two major projects: the development of a Quarantine and Isolation (Q/I) policy and the creation of a Professional Development Day (PDD) training module for the entire JCPH staff.

The first project focused on assisting in the development of a Q/I policy for JCPH. This internal policy is designed to be formalized as county legislation to ensure effective disease containment during outbreaks. My role in this project involved creating essential tools, such as flowcharts for managing suspected and confirmed cases, drafting a Q/I tracking sheet for monitoring cases, and preparing reference materials on existing support services for individuals in quarantine or isolation. The materials I produced will support the policy's transition from an internal guideline to a formal ordinance. These tools are vital for improving the county's response to both vaccine-preventable and non-vaccine-preventable diseases by streamlining the decision-making processes and ensuring that public health professionals have a clear protocol to follow during outbreaks.

The second project involved developing and presenting a Professional Development Day (PDD) training module for JCPH staff. This annual training event is designed to ensure that all staff members are equipped to assist in communicable disease investigation, data collection, and surveillance during a large-scale outbreak. The training includes a lecture that covers fundamental public health concepts, such as epidemiology, surveillance, contact tracing, and outbreak response. Following the presentation, the staff participates in a hands-on activity where they are divided into groups and tasked with performing simulated over-the-phone interviews for suspected or confirmed cases of diseases caused by *salmonella, pertussis, and legionella*. These scenarios are intended to replicate real-life outbreak investigation tasks, helping the staff to hone their skills in data collection and disease investigation.

The Q/I policy materials and the PDD training module were both developed using the Master of Public Health foundational competencies, which ensured that the processes were streamlined and actionable. Together, these portfolio products enhance Jackson County's capacity to respond to disease outbreaks by providing clear guidance for quarantine and isolation procedures, as well as equipping public health staff with the skills necessary to investigate and control communicable diseases effectively.

In conclusion, the portfolio products I developed during my APE, including the Quarantine and Isolation (Q/I) materials and the Professional Development Day (PDD) training, has contributed to improving Jackson County Public Health's response to communicable disease outbreaks. These tools not only streamlined processes but also enhanced staff preparedness. This experience allowed me to apply academic knowledge to real-world public health challenges, improving my skills in public health policy development, communication, and disease control.

Table 1.1 Summary of Portfolio Products

Portfolio Product		**Description**
1	Quarantine and Isolation (Q/I) Flowcharts	Developed flowcharts to guide JCPH staff in managing suspected and confirmed cases during outbreaks, covering both vaccine-preventable and non-vaccine-preventable diseases. These flowcharts help streamline decision-making processes.
2	Quarantine and Isolation (Q/I) Tracking Sheet	Created a comprehensive tracking sheet to monitor individuals placed in quarantine or isolation, ensuring systematic case management and oversight throughout the quarantine period.
3	Reference Report on Q/I Implementation	Created a reference report outlining existing support services and legal considerations for quarantine and isolation, ensuring that the internal policy aligned with both state and federal regulations.

4	Professional Development Day (PDD) Training PowerPoint	Developed and presented a Communicable Disease Investigation PowerPoint lecture for the PDD, covering key topics, such as epidemiology, surveillance, contact tracing, aimed to train JCPH employees on outbreak response.
5	Case Investigation Activity	Created an interactive Case Investigation Activity for JCPH staff, simulating outbreak investigations for three diseases—*Salmonella*, *Pertussis*, and *Legionella*—allowing participants to practice phone interviews for data collection and surveillance.

Table 1.2 Portfolio Products and Competency Addressed

The significance of Table 1.2 lies in its alignment of each portfolio product with specific public health competencies, demonstrating how the projects completed during the APE address core competencies essential for public health practice. Each product—from the Quarantine and Isolation (Q/I) flowcharts to the Professional Development Day (PDD) Training PowerPoint—was designed to fulfill targeted learning outcomes, translating theoretical knowledge into practical applications. By linking each product with a numbered competency, the table highlights the deliberate approach taken to meet educational objectives, ensuring that the projects not only contribute to JCPH's operational capacity but also reinforce critical skills in epidemiology, data management, policy design, communication, and systems thinking. This structured competency alignment underscores the comprehensive and multifaceted learning achieved during the experience.

Portfolio Product		**Number and Competency Addressed**	
1	Quarantine and Isolation (Q/I) Flowcharts	1	Apply epidemiological methods to public health practice

2	Quarantine and Isolation (Q/I) Tracking Sheet	2	Select quantitative and qualitative data collection methods appropriate for a given public health context
3	Reference Report on Q/I Implementation	9	Design a population-based policy, program, project or intervention
4	Professional Development Day (PDD) Training PowerPoint	18	Select communication strategies for different audiences and sectors
5	Case Investigation Activity	22	Apply systems thinking tools to a public health issue

Chapter 2 - Competencies

Competency 1: Apply Epidemiological Methods to Public Health Practice

The ability to apply epidemiological methods is crucial in managing disease outbreaks efficiently and reducing transmission risks. During my APE, I applied epidemiological methods such as contact tracing, risk assessment, and case investigation in the development of the Q/I flowcharts. These flowcharts provided structured guidance for staff in managing disease outbreaks by incorporating patterns of disease transmission and evidence-based practices to ensure a swift response to both vaccine-preventable and non-vaccine-preventable diseases. These methods helped establish criteria for quarantine and isolation, prioritized high-risk contacts, and supported the tracking of disease progression within affected populations.

Competency 2: Select Quantitative and Qualitative Data Collection Methods

Quantitative and qualitative data collection methods are essential for tracking and evaluating the effectiveness of public health measures. I demonstrated this competency by creating the Q/I tracking sheet. This tool allowed JCPH to monitor individuals in quarantine or isolation by capturing both quantitative (e.g., demographics, case status) and qualitative (e.g., symptoms) data, facilitating better decision-making and monitoring during outbreaks.

Competency 9: Design a Population-Based Policy, Program, Project, or Intervention

Designing a population-based policy is fundamental for public health systems, addressing diverse community needs. I contributed to the Q/I Reference Report, which will be used to shape Jackson County's quarantine and isolation ordinances in 2025. The report was created to align with both local and national standards by analyzing legislature at multiple levels, while addressing the needs of diverse populations.

Competency 18: Select Communication Strategies for Different Audiences and Sectors

Effective communication strategies are vital in ensuring public health messages reach diverse audiences. I demonstrated this by developing the PDD Training PowerPoint, which communicated complex public health concepts to a diverse group of JCPH staff, including individuals from various backgrounds and roles such as administrative staff, health educators, and health policy. The training materials were designed to be accessible to participants with different levels of public health experience, using simplified language, clear visuals, and relatable case scenarios. This approach ensured that all participants, regardless of their background, could understand key topics, such as epidemiology, contact tracing, and outbreak response, ultimately enhancing preparedness and collaboration across departments.

Competency 22: Apply Systems Thinking Tools to a Public Health Issue
Applying systems thinking tools allows public health professionals to understand how different elements interact within a system. I employed this competency in the Case Investigation Activity, which simulated outbreak scenarios. This exercise demonstrated how different elements of public health systems interact, helping staff think critically about managing disease control during real outbreaks.

Reflecting on my APE, the competencies I addressed were integral to the success of my projects. Applying epidemiological methods, developing data collection tools, designing policies, and using systems thinking all deepened my understanding of public health practice. These experiences have prepared me to address complex public health issues in my future career, reinforcing the importance of evidence-based decision-making, communication strategies, and collaborative problem-solving in the field of public health.

Table 2.1 Summary of MPH Foundational Competencies

Number and Competency		**Description**
1	Apply epidemiological methods to public health practice	This competency was demonstrated through the development of Q/I flowcharts, which were designed based on epidemiological principles to manage disease outbreaks and guide investigators in handling suspected and confirmed cases.
2	Select quantitative and qualitative data collection methods	This was applied by creating the Q/I tracking sheet to monitor individuals in quarantine or isolation. The sheet allowed for both quantitative and qualitative data

		collection regarding case management and outcomes.
9	Design a population-based policy, program, project or intervention	Addressed through the development of the Reference Report on Q/I Implementation, which contributed to the design of a population-based policy for managing communicable diseases through quarantine and isolation.
18	Select communication strategies for different audiences and sectors	Demonstrated through the creation of the PDD Training PowerPoint, which communicated complex epidemiological concepts to a diverse audience of JCPH staff members.
22	Apply systems thinking tools to a public health issue	This competency was attained by developing the Case Investigation Activity, which applied systems thinking to simulate outbreak scenarios and improve communicable disease investigation processes.

Table 2.2 MPH Foundational Competencies Course Mapping

22 Public Health Foundational Competencies Course Mapping	**MPH 701**	**MPH 720**	**MPH 754**	**MPH 802**	**MPH 818**
Evidence-based Approaches to Public Health					
1. Apply epidemiological methods to the breadth of settings and situations in public health practice	x		x		
2. Select quantitative and qualitative data collection methods appropriate for a given public health context	x	x	x		
3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate	x	x	x		

22 Public Health Foundational Competencies Course Mapping	MPH 701	MPH 720	MPH 754	MPH 802	MPH 818
4. Interpret results of data analysis for public health research, policy or practice	x		x		

Public Health and Health Care Systems					
5. Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings		x			
6. Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community and societal levels					x
Planning and Management to Promote Health					
7. Assess population needs, assets and capacities that affect communities' health		x		x	
8. Apply awareness of cultural values and practices to the design or implementation of public health policies or programs					x
9. Design a population-based policy, program, project or intervention			x		
10. Explain basic principles and tools of budget and resource management		x	x		
11. Select methods to evaluate public health programs	x	x	x		
Policy in Public Health					
12. Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence		x	x	x	
13. Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes		x		x	x
14. Advocate for political, social or economic policies and programs that will improve health in diverse populations		x			x
15. Evaluate policies for their impact on public health and health equity		x		x	
Leadership					
16. Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making		x			x
17. Apply negotiation and mediation skills to address organizational or community challenges		x			

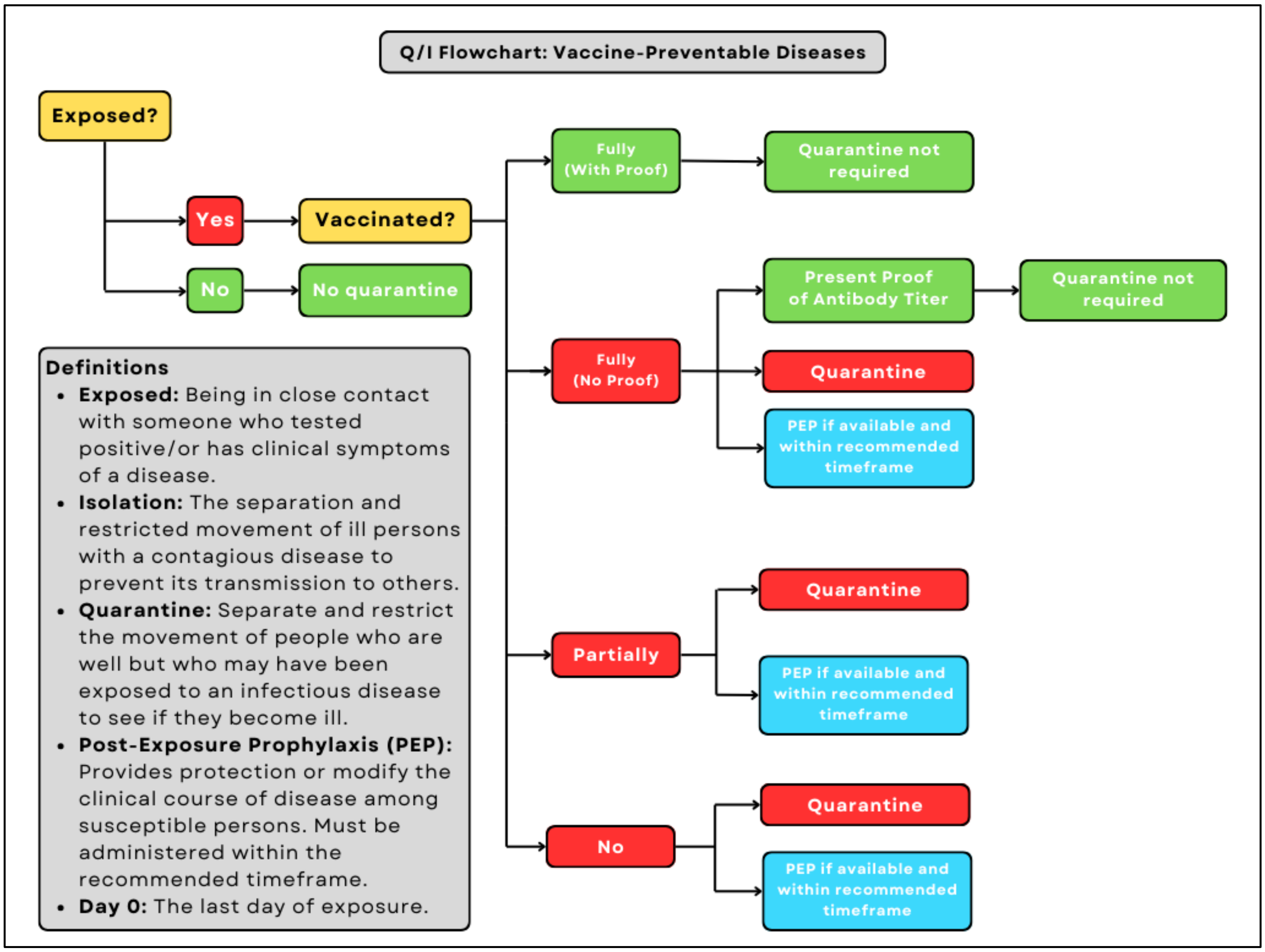
Communication					
18. Select communication strategies for different audiences and sectors	DMP 815, FNDH 880 or KIN 796				
19. Communicate audience-appropriate public health content, both in writing and through oral presentation	DMP 815, FNDH 880 or KIN 796				
20. Describe the importance of cultural competence in communicating public health content		x			x
Interprofessional Practice					
21. Perform effectively on interprofessional teams		x			x
Systems Thinking					
22. Apply systems thinking tools to a public health issue			x	x	

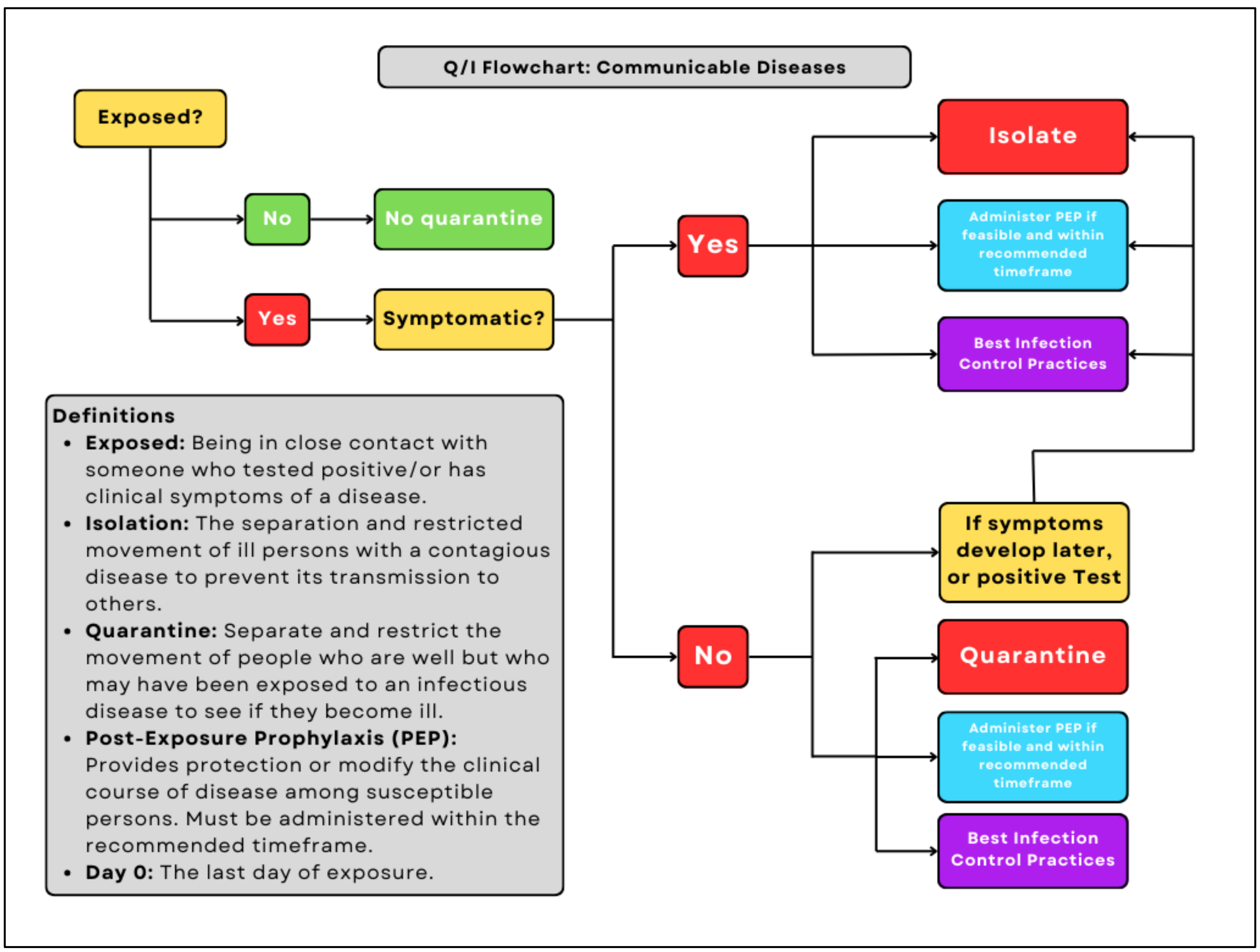
Table 2.3 Application of Systems Thinking Tools to a Public Health Issue

Use of Systems Thinking Tools

Systems Thinking Tool	Description of Use
Process Mapping	I applied Process Mapping through the development of the Q/I flowcharts. These flowcharts visually outlined the steps involved in managing communicable disease cases, from identification through to quarantine or isolation. By mapping out these processes, I helped JCPH staff identify potential bottlenecks and inefficiencies, such as delays in initiating contact tracing, and streamlined the response workflow. This tool was crucial for ensuring an efficient, step-by-step approach to handling outbreaks.
Causal Loop Diagrams (CLDs)	While I did not create a specific CLD, this tool can be applied to model the feedback loops involved in communicable disease outbreaks. For example, in the Case Investigation Activity, the interaction between increasing cases and enhanced contact tracing efforts could create reinforcing or balancing loops. Using CLDs would allow JCPH to anticipate the long-term impact of interventions

	like quarantine measures and public messaging on reducing disease spread.


Q/I Flowchart: Vaccine-Preventable Diseases
Exposed?
Yes
Vaccinated?
No
No quarantine
Fully (With Proof)
Quarantine not required
Present Proof of Antibody Titer
Quarantine not required
Fully (No Proof)
Quarantine
PEP if available and within recommended timeframe
Partially
Quarantine
PEP if available and within recommended timeframe
No
Quarantine
PEP if available and within recommended timeframe
Definitions
• Exposed: Being in close contact with someone who tested positive/or has clinical symptoms of a disease.
• Isolation: The separation and restricted movement of ill persons with a contagious disease to prevent its transmission to others.
• Quarantine: Separate and restrict the movement of people who are well but who may have been exposed to an infectious disease to see if they become ill.
• Post-Exposure Prophylaxis (PEP): Provides protection or modify the clinical course of disease among susceptible persons. Must be administered within the recommended timeframe.
• Day 0: The last day of exposure.


Q/I Flowchart: Communicable Diseases
Exposed?
No
No quarantine
Yes
Symptomatic?
Yes
Isolate
Administer PEP if feasible and within recommended timeframe
Best Infection Control Practices
No
If symptoms develop later, or positive Test
Quarantine
Administer PEP if feasible and within recommended timeframe
Best Infection Control Practices
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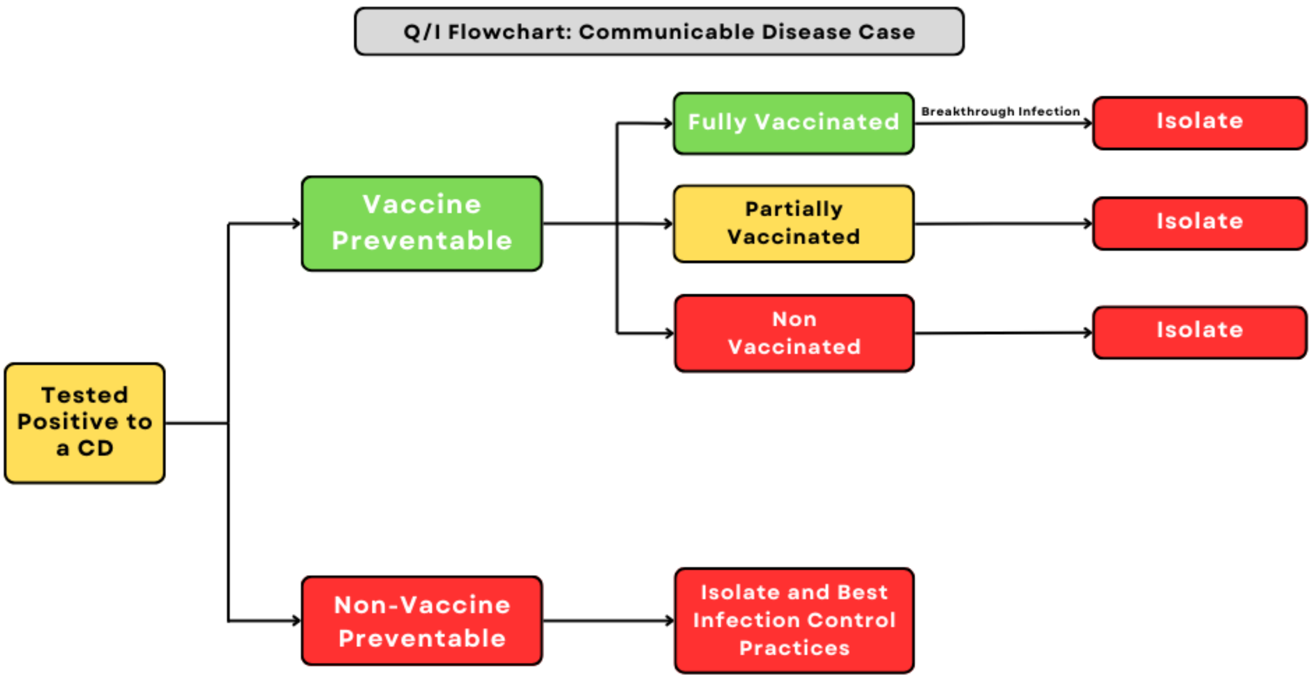

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