Master of Public Health

Integrative Learning Experience Report

Strengthening Communicable Disease Response: Developing Quarantine And Isolation Policies And Training For Disease Investigations In Jackson County

by

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MASTER OF PUBLIC HEALTH

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Abstract

This Integrative Learning Experience (ILE) report details my Applied Practice Experience (APE) at Jackson County Public Health (JCPH) in Missouri, focusing on strengthening the county's response to communicable disease outbreaks. The primary objectives were to assist in developing a comprehensive Quarantine and Isolation (Q/I) policy and to create a Professional Development Day (PDD) training module on communicable disease investigation for public health staff.

The development of the Quarantine and Isolation policy involved creating essential materials, such as detailed flowcharts for managing vaccine-preventable and non-vaccine-preventable diseases, a tracking sheet for monitoring individuals in quarantine and isolation, and a reference report outlining legal frameworks and support services. Jackson County previously lacked a formal system for managing quarantine and isolation, and this policy is intended to transition into a county ordinance. By providing structured procedures and data tracking capabilities, the policy equips JCPH with an organized and legally sound framework to manage future outbreaks more effectively.

The Professional Development Day training module was designed to enhance staff capacity by educating over 60 JCPH employees on key public health topics, including epidemiology, disease surveillance, and contact tracing. The training included a comprehensive lecture and an interactive case investigation activity, where staff simulated investigating outbreaks of diseases like *Salmonella*, *Pertussis*, and *Legionella*. This hands-on approach aims to equip the entire staff with essential skills for managing outbreaks, improving coordination and efficiency.

By applying Master of Public Health (MPH) foundational competencies, such as epidemiological methods, communication strategies, and systems thinking tools like process

mapping, this project significantly strengthened JCPH's preparedness for future outbreaks. These initiatives contribute to a more robust public health infrastructure in Jackson County, ensuring effective response capabilities for communicable disease control.

Keywords: communicable disease, quarantine, isolation, outbreak response, public health training, systems thinking

Outline

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Chapter 1 - Introduction and Literature Review

Background

Jackson County Public Health (JCPH) serves approximately 350,000 residents across Eastern Jackson County (EJC), Missouri, which is the areas of Jackson County that excludes Kansas City, Missouri, and Independence, Missouri, which are managed by their respective health departments. Jackson County itself is home to over 700,000 residents, with 269,342 residing within JCPH's service area in EJC. This diverse population presents both strengths and unique public health challenges, particularly in implementing and achieving adherence to outbreak response measures such as quarantine and isolation. According to 2023 demographic data, approximately 15.3% of EJC households live at or below the poverty line, while the educational attainment varies significantly, with 10.9% of adults lacking a high school diploma and 33.2% holding at least a bachelor's degree. Additionally, the area's racial and ethnic diversity is broad, with 11.4% of the population identifying as Black or African American, 5.3% as Hispanic or Latino, and 4.1% as Asian. These socioeconomic, educational, and racial characteristics underscore the necessity for culturally sensitive, widely accessible public health interventions that address varying levels of health literacy, financial resources, and trust in public health systems.

During the COVID-19 pandemic, the limited communicable disease team at JCPH faced the overwhelming task of managing hundreds of daily reported cases, exposing significant gaps in the county's preparedness for large-scale outbreaks. JCPH responded by temporarily hiring an additional 50 COVID-19 investigators through grant funding, but, this is unsustainable for future outbreaks because grant funding is not guaranteed. Furthermore, JCPH identified that many employees outside the Epidemiology Team could have been of assistance during the COVID-19 pandemic but lacked formal training in outbreak response. Identifying the need to be more

prepared, JCPH understood the need for structured policies and comprehensive, department-wide training. Addressing these gaps became essential to enhance JCPH's long-term preparedness, operational resilience, and adaptability in managing future public health emergencies.

The first objective of this Integrative Learning Experience (ILE) was to contribute to the development of a comprehensive quarantine and isolation (Q/I) policy for JCPH, which could serve as an internal guide and eventually be formalized as a county ordinance. Additionally, the project aimed to establish a Professional Development Day (PDD) training module to equip JCPH staff with foundational knowledge and hands-on experience in communicable disease investigation, outbreak response, and epidemiological principles. By providing cross-departmental training, the PDD module ensures JCPH can deploy a well-prepared workforce, capable of supporting the communicable disease team in future health crises.

Literature Review

Quarantine and isolation policies have long been recognized as pivotal tools in managing infectious disease outbreaks. The COVID-19 pandemic underscored the necessity of these measures globally, prompting research to refine them for balancing public health benefits with socio-economic impacts and measurable disease outcomes. This literature review highlights studies on quarantine effectiveness, contact tracing, testing strategies, and workforce preparedness, which informed my assistance to JCPH's Q/I policy development and creating the PDD training module.

Selected Studies

1. Klinkenberg et al. (2006) examined the efficacy of contact tracing during emerging epidemics using a mathematical model, demonstrating that contact tracing effectiveness is highly dependent on factors such as the timing of infectivity, variability in incubation periods, and tracing delays. The study highlights iterative tracing, or tracing contacts of

contacts, as a means to improve outbreak control, particularly when single-step tracing alone does not suffice. This foundational study was chosen for its insightful modeling approach and in-depth analysis of contact tracing dynamics. Although the study operates under idealized conditions, with assumptions that may not fully address real-world limitations such as resource constraints and variable case volumes, its findings offer valuable guidance for developing JCPH's Q/I policy, especially in considering flexible, resource-optimized protocols to maintain rapid contact tracing and outbreak response under constrained conditions.

2. Day et al. (2006) explored the conditions under which quarantine is most effective, identifying three essential criteria for efficacy: (1) a high reproduction number, (2) a substantial proportion of infections that can be prevented through quarantine (particularly pre-symptomatic cases), and (3) a high likelihood of quarantining individuals before symptoms develop. This study, while dated, provides relevant insights for managing asymptomatic transmission, aiding JCPH's policy development to prioritize both symptomatic and asymptomatic cases. A limitation of Day et al.'s study is its assumption that quarantine alone is highly effective, which could be restrictive in situations of widespread community transmission requiring additional interventions (e.g., access to healthcare facilities for treatment). Consequently, the Q/I policy will consider complementary measures, such as early testing, to bolster the efficacy of quarantine.
3. Quilty et al. (2021) conducted a modeling study on quarantine and testing strategies for SARS-CoV-2, demonstrating that incorporating PCR or lateral flow antigen (LFA) testing can allow for shorter quarantine durations without substantially raising transmission risks. By enabling earlier release from quarantine after a negative test, these approaches reduce the social and economic burdens that often hinder quarantine

adherence. The study also suggests that daily LFA testing for five days could be an effective alternative to quarantine in specific cases. However, practical application may be limited by factors such as test availability and processing delays. When developing JCPH's policy, these findings highlight the importance of balancing public health needs with effective disease control measures while aiming to improve adherence and reduce strain on the community.

Additional Supporting Studies

1. Schneider et al. (2011) examined the impact of the CDC Field Epidemiology Training Programs (FETPs), illustrating the importance of competency-based training in strengthening public health systems. A critical component of this approach is the "availability of a trained, competent workforce" across various roles essential to effective outbreak response. The study highlights that, beyond epidemiologists, roles like laboratorians, surveillance officers, data clerks, and community agents require a foundational competency in field epidemiology to support timely and accurate health data collection and transmission. While FETPs have successfully enhanced epidemiologic and surveillance capacity at national levels, Schneider et al. underscores a gap in subnational engagement, suggesting limitations in localized public health capabilities. This gap supports the objective of JCPH's PDD training module to equip a broader range of staff, providing accessible, department-wide competencies that contribute to a more responsive local health system.
2. Line et al. (2022) studied the impact of community engagement through contact tracing training, highlighting the efficacy of scenario-based learning, especially when in partnership with academic institutions. Their findings suggest that practical, scenario-based training significantly improves public health preparedness by equipping trainees

with hands-on experience in a controlled environment. While mentorship was beneficial, the study also noted it could introduce bottlenecks during periods of high demand, such as pandemics. In response, JCPH's PDD module includes adaptable, generalized learning components intended to ensure the scalability of training, even under time constraints.

3. Girum et al. (2020) reviewed the effectiveness of quarantine, isolation, and contact tracing for COVID-19 prevention, underscoring the value of implementing these measures together for early containment. The study observed that effective quarantine can avert a significant portion of cases and deaths, especially when integrated with contact tracing and isolation. The authors highlight that although high coverage of these interventions is optimal, it can be challenging in resource-constrained health systems. This limitation suggests the need for adaptable policies, as with JCPH's Q/I policy, to balance resource availability with containment efficacy in real-world applications.
4. Auranen et al. (2023) evaluated the impact of testing intervals on quarantine effectiveness during the COVID-19 pandemic's growth phase in Finland, suggesting that early testing may effectively shorten quarantine while maintaining transmission control. Their findings indicate that timely testing can help reduce pre-symptomatic transmission, though the study notes limitations, such as reliance on self-reported data and variability in adherence rates, which may affect generalizability. In considering these findings, JCPH's Q/I policy will acknowledge the potential value of adaptable testing schedules to address such variability, optimizing quarantine practices for specific pathogens.
5. Alam et al. (2020) primarily investigated the effectiveness of quarantine versus isolation using a model based on mathematical epidemiology and evolutionary game theory. Their findings suggest that while both quarantine and isolation contribute to disease control, isolation is more effective in regions with higher transmission rates, especially in

scenarios involving endemic diseases. The study also notes that incorporating isolation as a strategy reduces the overall vaccination level required for achieving epidemic control. Limitations in the study include its assumptions of an ideal, homogeneous population, which may not capture the variability in human interactions in real-world scenarios. Consequently, JCPH's Q/I policy can take these findings into account by applying flexible isolation measures in higher-transmission scenarios while considering the social determinants that may influence quarantine adherence and efficacy.

Application to Quarantine and Isolation Policy

The studies reviewed offered foundational insights that shaped various components of Jackson County's Q/I policy. For example, Klinkenberg et al. (2006) emphasized the importance of timely, iterative contact tracing. This study's insights informed considerations for protocols that prioritize rapid contact identification, with iterative tracing used as resources allow, enhancing adaptability within JCPH's operational capabilities. Recognizing that delays in tracing reduce outbreak control effectiveness, the Q/I policy approach incorporates these considerations to maximize tracing impact.

Day et al. (2006) highlighted that quarantine's effectiveness is enhanced when combined with additional measures, particularly for diseases with significant asymptomatic transmission. This perspective guided policy criteria that consider disease-specific transmission characteristics, ensuring a flexible rather than one-size-fits-all approach. Additionally, insights from Quilty et al. (2021) and Auranen et al. (2023) emphasized the potential of early testing to reduce quarantine durations. This informs the Q/I policy's adaptable framework, which can integrate testing options to balance effective disease control with minimizing social and economic burdens on individuals.

Application to the Professional Development Day Training

The reviewed studies by Klinkenberg, Day, Quilty, Schneider, and Line also guided the development of the PDD training module. This module equips JCPH staff with core epidemiological principles and applied skills for outbreak management through the following key components:

1. Contact Tracing: Inspired by Klinkenberg et al. (2006), the module emphasizes the importance of timely and, where possible, iterative contact tracing, with an emphasis driven by data management strategies to ensure accuracy and efficiency during high-demand situations.
2. Quarantine Decision-Making: Taken into consideration by Day et al. (2006), the training helps the epidemiology team educate the staff when and why quarantine measures are necessary. Staff will learn to evaluate quarantine needs based on disease-specific characteristics, reproduction rates, and levels of asymptomatic transmission, promoting informed and adaptable decision-making during outbreaks.
3. Testing Integration: Insights from Quilty et al. (2021) and Auranen et al. (2023) on testing's potential to shorten quarantine durations informed training on PCR and antigen testing. Staff will gain an understanding of how testing schedules may support containment while minimizing quarantine-associated burdens.
4. Competency-Based Training: Schneider et al. (2011) highlighted the need for competency-based training to build essential epidemiological skills across diverse roles. The PDD module is structured to develop these core competencies department-wide, enabling a flexible and prepared response during health crises.
5. Scenario-Based Learning: Reflecting Line et al. (2022), the module includes scenario-based learning with hands-on simulations to bolster practical skills. Staff work through simulated outbreaks where they will practice interview skills involving cases with

salmonella, *pertussis*, and *legionella*. This will enhance their preparedness for real-world application through exercises in case investigation, contact tracing, and effective communication under pressure.

By integrating these research insights, the PDD training module aims to ensure that JCPH staff have the practical skills and knowledge necessary for a unified, effective response to public health emergencies. This approach not only bridges workforce preparedness gaps but also strengthens policy implementation, establishing a robust foundation for JCPH to manage communicable disease outbreaks with resilience, accuracy, and efficiency.

Chapter 2 - Learning Objectives and Project Description

Learning Objectives

During my Applied Practice Experience (APE) at Jackson County Public Health (JCPH), my primary focus was on enhancing the county's capacity to respond to communicable disease outbreaks. This was achieved through two key projects:

1. Assisting in the Development of an Internal Quarantine and Isolation Policy: To ensure that JCPH establishes a standardized process to implement quarantine and isolation measures during future outbreaks.
2. Creation and Facilitation of a Professional Development Day (PDD) Training Module: To equip all JCPH staff with the necessary knowledge and practical skills in

communicable disease investigation, including epidemiological principles, contact tracing techniques, and case management tools.

These objectives aligned with JCPH's broader public health goals, specifically in strengthening outbreak response and ensuring preparedness for future public health emergencies.

Description of Projects and Responsibilities

Throughout my time at JCPH, I actively contributed to both the development of the Q/I policy and the design and delivery of the PDD training module. Each task involved close collaboration and iterative feedback with my mentor, Dr. Adeyemi Adedokun, the Epidemiology Coordinator, who provided structured guidance and ensured each deliverable met JCPH's standards.

Quarantine and Isolation (Q/I) Policy Development

As part of the epidemiology team, I played a key role in drafting the Q/I policy by:

1. Conducting Research: I performed extensive research on city, county, state, and federal quarantine laws and ordinances, as well as best practices from public health agencies such as the CDC and the Missouri Department of Health and Senior Services (MDHSS). This research included reviewing legal frameworks from the Federal Code of Regulations, legislation from the eight bordering states of Missouri, ordinances from the five counties that border Jackson County and policies from the two other health departments within Jackson County, Kansas City Health Department, and Independence Health Department. Another area of research that I conducted was within existing resources for those in quarantine or isolation. I researched state, county, and third-party programs nationwide that offered services such as rental assistance, mental health assistance via telehealth appointments, food delivery, hygiene and sanitation products, and other support resources. This research is going to be used when building JCPH's

network of assistance for those in quarantine or isolation. Ethical considerations, and evidence-based practices from the CDC and were also utilized as strategies to ensure that the contributions to the Q/I policy were both comprehensive and compliant with established public health guidelines.

2. Developing Process Flowcharts: I created detailed flowcharts outlining procedures for managing vaccine-preventable and non-vaccine-preventable diseases. Initially, I sketched the diagrams by hand and then used Canva to create digital versions. After completing each draft, I presented the flowcharts to Dr. Adedokun, who provided feedback on areas for refinement and additional detail, ensuring that they functioned as effective visual guides for public health officials to streamline decision-making during outbreaks.
3. Creating a Tracking System: I designed a comprehensive tracking sheet in Excel to monitor individuals in quarantine and isolation. This tool facilitates accurate data collection, case management, and ensures compliance with legal and public health guidelines. I implemented features such as data validation, dropdown lists, and formatting rules to prevent data entry errors. Dr. Adedokun and I worked closely to revise the tracking sheet, focusing on making it inclusive of critical variables while ensuring simplicity and ease of use.
4. Collaborating with Other Teams: I participated in a meeting with the Community Engagement and Policy Division, which included Division Manager Kristin Schlenk, M. Ed, CHES, to discuss available support services for individuals under quarantine or isolation. In this meeting, we explored partnerships with community organizations to provide essential resources, such as food assistance, rental and mortgage support, travel assistance for treatment, and mental health services to ensure individuals in quarantine or isolation had access to comprehensive support.

5. Drafting Policy Documents: I contributed to writing the policy document, integrating feedback from Dr. Adedokun. Each draft received structured feedback from Dr. Adedokun, and we refined each one of my assigned portions through multiple iterations. The final policy aims to provide clear guidelines for implementing quarantine and isolation measures and will hold the potential to be adopted as a county ordinance in 2025.

Professional Development Day (PDD) Training Module

I was responsible for designing and will be assisting in the facilitation of the PDD training module, which includes:

1. Developing Training Materials: I created a comprehensive PowerPoint presentation covering key topics, such as epidemiology, disease surveillance, outbreak investigation, contact tracing, legal and ethical considerations, and data management.
2. Interactive Learning Activity: To enhance engagement and practical understanding, I designed an interactive case investigation activity. In this activity, participants will be assigned mock scenarios involving diseases like *Salmonella*, *Pertussis*, and *Legionella*. The participants will conduct simulated phone interviews with confirmed and suspected cases, practicing essential skills in interview techniques and data collection methods.
3. Assisting in the Facilitation of the Training Session: The PDD session is scheduled for November 11th, where I will assist the epidemiology team in delivering the training to over 60 JCPH staff members from various divisions. The session is structured to encourage active participation and collaboration, ensuring that staff with varying levels of public health experience and epidemiological knowledge can effectively engage with the material.

4. Assessing Training Outcomes: We plan to collect feedback through post-training surveys to evaluate the effectiveness of the session. These surveys will assess knowledge gains, confidence levels, and engagement, providing data to improve future training sessions. Feedback will allow JCPH to adjust the content and format, ensuring that future sessions fully meet the objectives of yearly cross-departmental training.

Additional Learning and Practical Experiences

Beyond my primary projects, I engaged in a range of activities that enhanced my practical understanding of public health operations:

1. Weekly Communicable Disease Team Meetings: I attended weekly team meetings where current cases, outbreak strategies, response plans, and current projects were discussed. These meetings provided firsthand insight into the critical coordination and communication efforts required in the epidemiology space.
2. CDC Outbreak Response Meeting on Marburg Virus: Observing a CDC-led meeting on a Marburg Virus outbreak in Rwanda exposed me to the intricacies of national and international health collaboration, underscoring the importance of cross-border preparedness and collaboration in disease control.
3. Shadowing Disease Investigators: By shadowing experienced disease investigators such as Allison Delgado, Shaun Botts, and Karen Van Fleet, I gained practical insights into case investigations, contact tracing, and the use of data tools like EpiTrax and WorldCare. This hands-on experience deepened my understanding of daily operational practices in disease investigation.
4. Community Engagement Initiatives: Collaborating with the Community Engagement and Policy team allowed me to assist in identifying resources for individuals in quarantine or isolation. This initiative highlighted the value of addressing social determinants of health,

such as food, housing, and mental health support, in managing public health responses effectively.

Through these experiences, I was able to contribute to Jackson County Public Health's infrastructure enhancements and witness firsthand the practical application of theoretical concepts from my MPH program. This integration of experience and learning has significantly enriched my professional development and has provided foundational skills for future contributions to public health.

Chapter 3 - Results

Quarantine and Isolation (Q/I) Policy Development

Assisting in the development of the Quarantine and Isolation (Q/I) policy was a crucial step toward enhancing Jackson County Public Health's (JCPH) preparedness for future communicable disease outbreaks. The goal of this internal policy was to establish a standardized framework to effectively enforce quarantine and isolation measures.

Observed and Anticipated Outcomes

1. Creation of Detailed Process Flowcharts:
    1. Vaccine-Preventable Diseases Flowchart: This flowchart outlines step-by-step procedures for managing suspected and confirmed cases of vaccine-preventable diseases. It guides health officials through the process of case identification, notification, isolation, contact tracing, and reporting, ensuring consistency and efficiency.
    2. Non-Vaccine-Preventable Diseases Flowchart: Specifically for non-vaccine-preventable diseases, this flowchart addresses the unique considerations for diseases without available vaccines, highlighting appropriate public health interventions.

3. Case Management Flowchart: This general framework for case management used for various communicable diseases includes guidelines for patient communication, legal considerations, and interagency coordination.

Together, these flowcharts provide clear, structured visuals that streamline decision-making during outbreaks, allowing staff to respond efficiently based on the specific disease characteristics.

2. Development of a Comprehensive Q/I Tracking Sheet:
    1. Design and Basis: Developed in collaboration with Dr. Adedokun, this tracking sheet was based on JCPH's existing disease tracking sheet (the "Epi Log"), which I observed during my shadowing experience. To align with JCPH's needs, I adapted a similar format, then presented initial drafts to the Communicable Disease/Epidemiology team for feedback, further refining the sheet based on their responses.
    2. Features and Use: This Excel-based sheet includes fields for patient demographics, case status, symptom details, quarantine and isolation dates, clinical symptoms, testing information, contact tracing details, support services provided, and notes. The tracking sheet facilitates accurate data collection, enabling better case management and legal compliance while enhancing epidemiological data analysis for decision-making. Disease investigators and epidemiologists will use this sheet for tracking individuals in quarantine or isolation, with the sheet being adaptable for use during specific disease outbreaks, or general Q/I tracking.
3. Compilation of Reference Reports on Legal Frameworks and Support Services:
    1. Contents: This reference report includes:

- State and federal laws on quarantine and isolation, including statutes from the Missouri Department of Health and Senior Services (MDHSS) and CDC guidelines.
- Legal procedures for issuing quarantine/isolation orders, including due process considerations and enforcement mechanisms.
- Ethical considerations to ensure individual rights while protecting public health.
- Lists of support services, such as food delivery programs, financial assistance, housing accommodations, and mental health resources.

These reports will ensure the Q/I policy aligns with legal frameworks, offering a comprehensive guide on supporting quarantined individuals while addressing legal and social health determinants.

4. Drafting of the Quarantine and Isolation Policy Document:
    1. Structure and Components: Although I worked on individual sections rather than the final draft, my contributions included developing flowcharts, and the tracking sheet alongside their corresponding written workflows and two reference reports that can be used when writing and revising the policy. The documents include:
        - References to relevant existing policies and ordinances utilized at the federal, state, county, and city levels.
        - Definitions of key terms (e.g., quarantine, isolation, contact tracing).
        - Criteria for implementing quarantine and isolation.
        - Compliance and enforcement mechanisms.

The finalized policy, as an internal operating procedure, has the potential to become a county ordinance, providing JCPH with a legal foundation for quarantine and isolation during future outbreaks.

Impact and Significance

The Q/I policy provides Jackson County with a structured approach for managing communicable disease outbreaks effectively. Standardized procedures and tools enable quicker, more consistent responses, reducing disease spread and protecting public health. Integrating legal frameworks and support services ensures a comprehensive, ethically sound policy that balances individual rights and community safety.

PDD Training on Communicable Disease Investigation

The PDD training module aims to prepare all JCPH staff to assist in communicable disease investigations, recognizing that future large-scale outbreaks may require mobilization beyond the epidemiology team.

Observed and Anticipated Outcomes

1. Development of the Training Module:
    1. Content and Structure: The PowerPoint presentation covers essential topics:
        - Introduction to epidemiology and its role in public health.
        - Epidemiological variables (person, place, time) and techniques (descriptive, analytic, experimental).
        - Overview of communicable diseases, modes of transmission, surveillance, data collection methods, laboratory diagnostics, and legal and ethical considerations.
    2. Demographic Relevance: Although general, the presentation includes references to recent Jackson County outbreaks, with relevant local data integrated into the speaker notes for contextual understanding.

2. Interactive Case Investigation Activity:
    1. Scenario Selection: Guided by Dr. Adedokun, three mock outbreak scenarios were selected to cover various types of disease transmission and investigation complexities:
        - Salmonella Outbreak: Focuses on foodborne illness investigation, source identification, and control measures.
        - Pertussis Outbreak: Emphasizes vaccination history and contact tracing in vaccine-preventable diseases.
        - Legionella Outbreak: Demonstrates environmental transmission, involving environmental health assessments.

    These scenarios are designed to provide realistic simulations, with hands-on case investigation practice that staff can relate to future potential outbreaks. The details and mock scenarios will be included in the appendix as a reference for future training sessions.
3. Delivery of the Training Session:
    1. Scheduled for November 11, the PDD training will be conducted in person, with over 60 JCPH staff expected to attend. The session includes:
        - A lecture presenting the PowerPoint content and an interactive discussion section to encourage discussion.
        - Case investigation simulations, guiding teams through the process and offering feedback.
        - A group debriefing to discuss key lessons and best practices.
4. Feedback and Evaluation:
    1. Post-Training Survey: Feedback will be gathered via survey to assess:

- Knowledge gained in epidemiological principles and communicable disease investigation.
- Increased confidence among staff in assisting during future outbreaks.
- Engagement and satisfaction with the interactive activity.

Survey responses will inform adjustments to improve future training effectiveness.

Impact and Significance

The PDD training will enhance JCPH's outbreak preparedness by expanding staff capable of assisting with communicable disease investigations. This capacity-building initiative fosters interdisciplinary collaboration, improving overall competence in outbreak response.

Chapter 4 - Discussion

The development of the Quarantine and Isolation (Q/I) policy components and the Professional Development Day (PDD) training module at Jackson County Public Health (JCPH) are proactive efforts to strengthen the county's communicable disease preparedness. These initiatives not only provide structured guidance for policy and workforce training but also support JCPH's broader capacity for responsive public health emergency management.

Significance of Findings

Enhancing Public Health Infrastructure through the Q/I Policy

In developing the Q/I policy framework, state and federal legal frameworks were reviewed to support alignment with JCPH's ethical and legal responsibilities. This framework is expected to improve transparency, accountability, and facilitate enforcement, which can aid in maintaining public compliance and community health protection. Legal preparedness, as noted in public health literature, strengthens response resilience and aligns actions with community expectations.

The creation of detailed flowcharts and process maps within the policy enables faster, clearer decision-making among public health officials during emergencies. These tools are expected to mitigate delays and inconsistencies in response actions, which are essential during high-stakes outbreaks. The standardized tracking sheet, designed to facilitate data collection and monitor individuals in quarantine or isolation, improves the oversight of cases and allows for comprehensive epidemiological analysis to support evidence-based decision-making. Incorporating state and federal legal frameworks into the Q/I policy framework aims to align JCPH's protocols with relevant ethical and legal standards, supporting transparency and

accountability. Legal alignment also supports enforceability, which is crucial to maintain public compliance and protect community health. Legal preparedness is fundamental to public health responses as it strengthens the overall resilience of response measures.

Building Workforce Capacity through the PDD Training Module

The PDD training module addresses the critical need for an adaptable public health workforce by offering training in essential epidemiological skills, surveillance, and outbreak response to over 60 JCPH staff members from diverse backgrounds. By including epidemiology principles, disease surveillance techniques, and contact tracing protocols, the module bolsters JCPH's workforce, enhancing the department's flexibility and capacity to handle future outbreaks. This cross-departmental training approach serves as a safeguard for continuity during large-scale emergencies, especially in the face of resource limitations, as experienced during the COVID-19 pandemic.

Interactive training activities, including simulated outbreak investigations, adhere to learning principles and foster hands-on application of theoretical knowledge, enhancing skill retention and application. This training aims to increase confidence in supporting communicable disease investigations, and broadening competency in outbreak response.

New Insights and Understandings

Interdisciplinary Collaboration as a Cornerstone of Public Health Preparedness

The Q/I policy development process shows the importance of interdisciplinary collaboration, with public health officials, legal authorities, epidemiologists, and the Community Engagement and Policy teams working closely together. This collaboration brought in a holistic perspective, encompassing legal, ethical, medical, and social support services, and aligning with principles of systems thinking in public health preparedness. By addressing the legal, ethical, and social determinants of health, the policy development process reflects a multidimensional approach, ultimately strengthening community compliance and health outcomes.

Expanding Training Beyond Core Epidemiological Staff to Enhance Resilience

Training non-epidemiological staff through the PDD module highlights the potential benefits of cross-functional skills in outbreak response. Equipping a wider range of staff members with essential skills can reduce reliance on external personnel during outbreak surges and support a more consistent response framework.

Legal Preparedness as a Critical Component of Public Health Response

One key insight gained from the policy development process was recognizing the critical role of legal preparedness. The Q/I policy framework considers legal alignment with local, state, and federal laws to ensure that future measures will be effective and enforceable. This proactive approach enhances public trust, especially in policies impacting personal freedoms, such as quarantine and isolation.

Limitations

Continuous Policy Improvement and Stakeholder Engagement

In the ongoing development of the Q/I policy framework, there remains an opportunity to further enhance the policy through comprehensive stakeholder engagement. Expanding input from a broader range of community and public health stakeholders can support the policy's adaptability to address diverse outbreak scenarios. Prioritizing feedback will help ensure the policy remains responsive to the evolving needs of Jackson County's public health landscape, aligning with best practices in policy refinement and community alignment.

Scope of Training Limited to Specific Diseases

The PDD training module's focus on specific diseases such as *Salmonella*, *Pertussis*, and *Legionella* allowed for a targeted approach but limited exposure to other possible pathogens, for example those related to emerging or bioterrorism threats. Expanding future training modules to incorporate a wider array of scenarios could further bolster JCPH's readiness for a broader spectrum of public health emergencies.

Assessment of Long-Term Training Effectiveness

As the first multi-division training at JCPH focused on cross-departmental epidemiology skills, there has yet to be sufficient time to evaluate the training's long-term impact on staff competencies and overall preparedness. To ensure the retention and effective application of skills, periodic follow-up assessments and refresher training sessions are recommended. These evaluations will support continuous skill enhancement and reinforce the training's contributions to JCPH's public health readiness.

Moving the Subject Area Forward

Advancing Public Health Practice through Policy and Training

This project contributes to public health practice advancement in several ways:

1. Model for Comprehensive Q/I Policies**:** The structured framework developed for the Q/I policy components has the potential to serve as a model for other public health agencies looking to establish or enhance quarantine and isolation protocols. By integrating operational, legal, and social support components, this policy sets a comprehensive standard for outbreak management.
2. Emphasis on Workforce Development**:** The PDD training module highlights the importance of a versatile, well-trained workforce, encouraging other agencies to implement similar cross-departmental training programs to foster a prepared and resilient workforce.
3. Integration of Systems Thinking**:** The use of systems thinking tools and interdisciplinary collaboration demonstrated in this project advocates for more interconnected and collaborative approaches in public health, which are essential for effective response to complex health crises.

By documenting the steps taken and lessons learned through the Q/I policy development and PDD training module, JCPH can provide a framework that may inform similar efforts in other

public health agencies. The knowledge gained here highlights adaptable strategies that address both communicable disease control and workforce readiness, potentially serving as a foundation for improved resilience in diverse health contexts.

Implications for Broader Public Health Preparedness

Adaptability to Different Contexts

The principles and strategies developed through this project are adaptable to various contexts and can be shared with other regions to contribute to broader public health preparedness efforts. By disseminating these resources and lessons learned, JCPH can help fortify public health capabilities in other regions facing similar preparedness challenges.

Promotion of Best Practices

Documenting and sharing the outcomes of this project can contribute to public health by creating a resource for effective strategies in disease outbreak management. The insights gained from this project may help shape future public health interventions and serve as guidance for managing large-scale public health emergencies.

Conclusion

The development of the Quarantine and Isolation policy framework and the Professional Development Day (PDD) training module at Jackson County Public Health significantly enhance the county's capacity to respond to communicable disease outbreaks. These initiatives proactively address preparedness gaps, promote standardized procedures, and build a resilient workforce capable of supporting JCPH's mission to protect community health. As JCPH continues to refine and expand these efforts, the agency stands poised to offer enhanced public health security for Jackson County. The developed policies and training modules provide valuable frameworks that other public health entities can adapt to build their own robust emergency preparedness infrastructures.

Chapter 5 - Competencies

In my Integrative Learning Experience (ILE) at Jackson County Public Health (JCPH), I had the opportunity to synthesize and integrate the foundational competencies acquired during my Master of Public Health (MPH) coursework. Through the development of a Quarantine and Isolation (Q/I) policy and the creation of a Professional Development Day (PDD) training module, I applied theoretical knowledge and principles to real-world public health practice. This chapter documents the MPH foundational competencies and the Infectious Diseases and

Zoonoses emphasis area competencies that I attained and utilized during this culminating experience.

MPH Foundational Competencies

1. Apply epidemiological methods to the breadth of settings and situations in public health practice (Competency 1)

I extensively applied epidemiological methods to the development of the Q/I policy and the PDD training module. In designing detailed flowcharts for outbreak management, I incorporated key epidemiological elements, such as case definitions, modes of transmission, and incubation periods, which structured the decision-making process for JCPH staff. Additionally, through participation in weekly communicable disease team meetings, I analyzed data from surveillance systems like EpiTrax and WebSurv. This practice furthered my understanding of using epidemiological methods to guide public health actions and enhanced both disease surveillance and response capabilities at JCPH.

2. Select quantitative and qualitative data collection methods appropriate for a given public health context (Competency 2)

In developing the comprehensive Q/I tracking sheet, I selected appropriate quantitative and qualitative data collection methods to monitor individuals in quarantine or isolation. This sheet incorporated quantitative data such as demographics, symptom onset dates, and test results, alongside qualitative data detailing symptoms, exposure histories, and isolation challenges. By integrating both types of data, the tracking sheet provided a holistic view of each case, facilitating effective case management and ensuring compliance with public health measures. This approach improved the accuracy and completeness of data collected during outbreaks.

3. Design a population-based policy, program, project, or intervention (Competency 9)

I contributed to designing a population-based policy through the development of the Q/I policy for JCPH. The policy was created to serve the entire population of Jackson County by

providing clear guidelines for JCPH to implement quarantine and isolation measures during communicable disease outbreaks. It considered the needs of diverse populations, including groups such as those in socio-economic disparity, and minority groups. This approach was intended to standardize response efforts, reduce disease transmission, and protect community health.

4. Select communication strategies for different audiences and sectors (Competency 18)

Effective communication was crucial in the development and will be in the delivery of the PDD training module. To engage JCPH staff with varying levels of epidemiological knowledge, I tailored the content to be accessible and engaging. I will be prioritizing clear language, visual aids, and interactive activities to convey complex epidemiological concepts. Additionally, I considered cultural competence by incorporating examples relevant to the community served by JCPH. For instance, I will be using real-world examples from recent public health incidents in Eastern Jackson County to ensure relevance and enhance comprehension among the audience. One of these examples comes from 2023, when a suspected norovirus outbreak at a local high school robotics event highlighted the importance of outbreak response. Additionally, we will use an example of active tuberculosis cases among immigrants from Central America which will allow the audience to understand another aspect of epidemiology regarding vaccine education. This will ensure that staff members can understand and apply the information in their roles, enhancing the department's overall preparedness.

5. Apply systems thinking tools to a public health issue (Competency 22)

I applied systems thinking tools, including process mapping and flowchart development, to the issue of communicable disease management. By mapping the quarantine and isolation processes, I identified key stakeholders, resources, and potential bottlenecks, allowing for a comprehensive integration of the public health system’s components. This approach brought together legal frameworks, community services, and interdepartmental collaboration to support a

coordinated response. Applying systems thinking to the Q/I policy framework enhanced its effectiveness and prepared JCPH for efficient outbreak management.

Table 5.1 Summary of MPH Foundational Competencies

Number and Competency		Description
1	Apply epidemiological methods to public health practice	Created flowcharts and protocols using epidemiological methods for managing communicable disease outbreaks at JCPH. Participated in data analysis during team meetings to inform public health actions.
2	Select quantitative and qualitative data collection methods	Developed a comprehensive Q/I tracking sheet incorporating quantitative and qualitative data to enhance case management and outbreak response.
9	Design a population-based policy or intervention	Contributed to drafting the Q/I policy, a population-based intervention aimed at reducing disease transmission and protecting community health during outbreaks.
18	Select communication strategies for different audiences	Developed the PDD training module using tailored communication strategies suitable for staff with diverse backgrounds, enhancing understanding and engagement.

Number and Competency		Description
22	Apply systems thinking tools to a public health issue	Used process mapping to visualize and organize the steps involved in disease outbreak management, ensuring a coordinated public health response.

Infectious Diseases and Zoonoses Emphasis Area Competencies

1. Evaluate modes of disease causation of infectious agents

In developing the Q/I policy and training materials, I analyzed modes of disease causation, focusing on transmission pathways of infectious agents such as Salmonella, Pertussis, and Legionella. By examining foodborne, airborne, and waterborne transmission routes, I tailored the activity to the specific characteristics of each pathogen, which will also be discussed in the presentation materials. This understanding of causation was also instrumental in educating staff on targeted intervention strategies to effectively contain outbreaks.

2. Investigate the host immune response to infection

While developing the PDD training module and Q/I policy materials, I investigated the role of the host immune response in vaccine-preventable diseases. Information on immunization's impact on disease susceptibility and transmission informed protocols that differentiate response strategies based on vaccination status, ensuring that quarantine and isolation measures are accurately tailored to protect public health.

3. Examine the influence of environmental and ecological forces on infectious diseases

I examined the influence of environmental and ecological factors on infectious disease transmission, specifically within the context of Jackson County. For example, in the *Legionella* case scenario used in the training module, I will be highlighting how contaminated water systems serve as transmission sources. Additionally, factors such as population density, and sanitation,

were considered in the Q/I policy framework to enhance its applicability across diverse community settings.

4. Analyze disease risk factors and select appropriate surveillance methods

I analyzed risk factors for various communicable diseases and identified suitable surveillance methods to support outbreak monitoring and control. Through collaboration and shadowing with the epidemiology team, I gained practical experience with surveillance tools such as EpiTrax, and World Care, which were used to track incidence and identify trends. This experience allowed me to integrate targeted surveillance data strategies into the Q/I tracking sheet and enhance the training content for JCPH staff.

5. Investigate the role of vectors, toxic plants, and other toxins in infectious diseases (Competency 5)

During the development of the training module and policy framework, I investigated the role of vectors and environmental toxins in infectious disease transmission. For example, with Jackson County's first confirmed case of non-travel-related West Nile Virus in September, we are incorporating discussions on vector-borne diseases to highlight the importance of vector control measures. This knowledge was vital in crafting comprehensive strategies for disease prevention and enhancing staff understanding of the complexities involved in vector-borne transmission.

Table 5.2 Summary of MPH Emphasis Area Competencies

MPH Emphasis Area: Infectious Disease Control and Zoonoses		
Number and Competency		**Description**
1	Evaluate modes of disease causation of infectious agents	Analyzed transmission pathways of infectious agents, such as Salmonella and vaccine-

MPH Emphasis Area: Infectious Disease Control and Zoonoses		
Number and Competency		**Description**
		preventable diseases, to inform targeted quarantine strategies.
2	Investigate the host immune response to infection	Assessed how immune responses, especially those influenced by vaccination, shape quarantine and isolation protocol decisions.
3	Examine the influence of environmental and ecological forces	Integrated environmental factors, like sanitation and high-risk employment, into policy development and training scenarios to enhance intervention effectiveness.
4	Analyze disease risk factors and select appropriate surveillance	Applied surveillance techniques and risk factor analysis in tracking disease outbreaks and informing public health responses.
5	Investigate the role of vectors and toxins in infectious diseases	Created training scenarios for vector-borne diseases and incorporated vector control strategies into preparedness measures.

Through my time at JCPH, I effectively applied and demonstrated proficiency in key MPH foundational competencies and emphasis area competencies in Infectious Diseases and Zoonoses. This experience allowed me to bridge theoretical knowledge with practical application, contributing meaningfully to public health practice while enriching my professional growth.

Chapter 6 - References

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Appendix

1.0 Quarantine and Isolation Policy Materials Overview

The materials in Appendix 1 provide a structured set of resources for implementing Jackson County Public Health's (JCPH) Quarantine and Isolation (Q/I) policy. These tools including flowcharts, tracking sheets, written workflows and legal reference reports are designed to support JCPH staff in managing communicable disease outbreaks effectively. They outline the procedural steps, legal frameworks, and support services essential for enforcing quarantine and isolation measures in Jackson County. Referenced throughout this report, these materials serve as foundational components of the Q/I policy, promoting consistency and legal compliance in public health practices.

1.1 JCPH Criteria for Implementation of Quarantine and Isolation

Quarantine and isolation are critical tools used by Jackson County Public Health (JCPH) to protect the health of the community by preventing the spread of contagious diseases. The JCPH Epidemiology Team is responsible for assessing and managing these public health threats. Jackson County Public Health may implement quarantine and isolation measures under the following conditions:

The Public Health is Endangered

Quarantine and isolation are considered when a contagious disease poses a significant threat to the health of the Jackson County community, necessitating immediate action to prevent widespread transmission. Implementation is recommended only after consideration of the best available science regarding the disease's characteristics, the expected balance of benefits and harms, and the feasibility of implementation. For example, due to its high reproductive rate (R_0 of 12–18), measles can quickly lead to an outbreak, especially in susceptible populations. The high transmissibility and short incubation period make quarantine effective in reducing disease

spread. An individual diagnosed with measles endangers the public health of Jackson County by potentially infecting others in schools, workplaces, and public spaces.

All Other Reasonable Means Have Been Exhausted

Before enforcing quarantine or isolation, JCPH will attempt all reasonable alternatives. These alternatives can include, but are not limited to, voluntary self-isolation, education on disease prevention, and providing resources to support compliance. Quarantine is implemented only after weighing the required resources against the expected benefits and when less restrictive measures are insufficient to control the spread of disease. For example, if a person with measles refuses voluntary isolation despite counseling and access to medical care from JCPH, or if vaccination drives and public awareness campaigns fail to contain the spread, JCPH may use mandatory isolation to protect others.

No Less Restrictive Alternatives Exist

Quarantine and isolation are implemented only when no other effective measures can ensure the public safety of Jackson County, and the threat of disease transmission cannot be mitigated through less restrictive means. For instance, patients with multidrug-resistant tuberculosis (TB) who are non-compliant with Directly Observed Therapy (DOT) or Video Observed Therapy (VOT) under JCPH and continue to be infectious may require isolation. In such cases, no less restrictive alternatives exist to halt transmission.

Once implemented, quarantine and isolation can be imposed for a specific period, typically up to 30 days, based on the disease's incubation period and infectiousness, with regular assessments by the CD Epi Team to determine if the period should be shortened or extended. Prolonged quarantine may increase the risk of adverse effects; therefore, efforts will be made to minimize the duration while ensuring public safety. For example, TB isolation mandated by JCPH will

continue until the patient is deemed non-infectious, which may require several weeks or months of effective treatment and negative sputum tests.

If an individual remains a public health threat after the initial quarantine or isolation period, JCPH may seek a court order to extend the duration to ensure community safety. JCPH adheres to existing legal frameworks to protect civil rights and ensure due process, considering the potential harms and benefits of extended quarantine measures. For example, with measles, if a patient remains contagious beyond the typical period or fails to comply with isolation guidelines, legal action may be pursued to extend isolation. Similarly, for patients with multidrug-resistant TB who require prolonged isolation, JCPH may obtain a court order to mandate continued isolation until they are no longer infectious. In both cases, JCPH will follow legal procedures, provide necessary support, and safeguard the individual's rights.

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1.2 Quarantine and Isolation Tracking Sheet Variables

This tracking sheet organizes critical case management data for individuals in quarantine or isolation under Jackson County Public Health's (JCPH) communicable disease protocols. Each color-coded section groups variables by data type to facilitate quick reference and usability, a

structure adapted from JCPH's standard disease and epidemiology logs to enhance familiarity for staff. The color-coding functions as follows:

- Grey: Demographic information
- Red: Quarantine/Isolation-specific data
- Blue: Health information
- Dark Orange: Testing and Diagnostic Information
- Green: Vaccination information
- Yellow: Contact Tracing and Transmission
- Orange: Compliance Monitoring
- Light Red: Support and References
- Light Green: Outcome and Recovery
- Light Orange: Special Circumstances/Additional Information

This tracking sheet will be completed by a JCPH disease investigator or epidemiologist to log and monitor individuals under Q/I measures. These records help ensure comprehensive case tracking, aid in data-driven decision-making, and allow public health staff to respond effectively to the needs and compliance requirements of individuals in quarantine or isolation.

Case ID Number	Full Name	Date of Birth	Gender	Ethnicity/ Race	Language Preference	Address	Phone Number	Emergency Contact Name & Number
Quarantine /Isolation	Start Date	Estimated End Date	Date of Last Known Exposure	Housing Situation	Household Members	At-Risk Household Members		
Date of Symptom Onset	Current Symptom Status	Symptoms Description	Pregnancy Status	Primary Care Physician				
Test	Test Date	Test Type	Result of Test	Additional Testing Information				
Vaccination Status	Type of Vaccine	Date of 1st Dose	Date of 2nd Dose	Date of 3rd Dose/Booster				
Close Contacts Identified	Close Contacts Address/ Phone Number	Additional Close Contact Information	Date of Last Contact	Close Contact Follow-Up Status	Travel History	Occupation Type	Place of Occupation	
Public Health Notifications Sent	Number of Notifications Sent	Date of Notifications Sent	Compliance Level	Monitoring Frequency				
Monitoring Method	Last Compliance Date	Non-Compliance Incidents	Enforcement Actions Taken	Monitoring Officer/Staff Assigned				
Needs Assessment	Referral to Support Services	Support Services Provided	Date of Services Provided	Additional Support Notes				
Recovery Status	Criteria for Release from Quarantine/Isolation	Release Date						
Quarantine/Isolation Challenges								

1.3 Quarantine and Isolation Tracking Sheet Written Workflow

Q/I Tracking Sheet Workflow

1. **Demographic Info**
    a. **Case ID**
        i. Data validation -> Number
    b. **Full Name**
        i. Data validation -> Text
    c. **DOB**
        i. Data validation -> Date
        ii. Format -> Date
    d. **Gender**
        i. Dropdown ->
            1. Male
            2. Female
            3. Non-Binary
            4. Other
    e. **Ethnicity/Race**
        i. Dropdown ->
            1. American Indian or Alaska Native
            2. Asian
            3. Black or African American
            4. Hispanic or Latino
            5. Native Hawaiian or Other Pacific Islander
            6. White

f. Language Preference

i. Dropdown ->

1. English
2. Spanish
3. Chinese
4. Arabic
5. Russian
6. French
7. German
8. Vietnamese
9. Korean
10. Tagalong
11. Other

g. Address

i. Data Validation -> None

h. Phone Number

i. Data Validation -> Whole Number

ii. Format -> Phone

i. Emergency Contact Name & Phone Number

i. Data Validation -> None

2. <u>Quarantine Isolation Details:</u>

a. Quarantine/Isolation

i. Dropdown ->

1. Quarantine

2. Isolation

b. Q/I Start date

i. Data Validation -> Date

ii. Format -> Date

c. Q/I Estimated End Date

i. Data Validation -> Date

ii. Format -> Date

d. Date of Last Known Exposure

i. Data Validation -> Date

ii. Format -> Date

e. Housing Situation

i. Dropdown ->

1. Own home
2. Renting
3. Shared Housing
4. Temporary Housing
5. Homeless
6. Institutional Setting
7. Other

f. Household Members

i. Data Validation -> Whole Number

g. At-Risk Household Members

i. Data Validation -> Whole Number

3. <u>Health Information</u>

a. **Date of Symptom Onset**
    i. Data validation -> date
b. **Current Symptom Status**
    i. Dropdown ->
        1. Asymptomatic
        2. Mild Symptoms
        3. Moderate Symptoms
        4. Severe Symptoms
        5. Critical Condition
        6. Recovered
        7. Deceased
c. **Symptoms Description**
    i. Text
d. **Pregnancy Status**
    i. Dropdown
        1. Pregnant
        2. Not-Pregnant
        3. Unknown
e. **Primary Care Physician**
    i. Text

4. **<u>Testing and Diagnostic Information</u>**

a. **Test**
    i. Dropdown ->
        1. Yes

2. No

b. Test Date

i. Data validation -> date

c. Test Type

i. PCR

ii. Rapid Antigen

iii. Antibody

iv. Other

v. None

d. Result of Test

i. Dropdown ->

1. Positive
2. Negative
3. Inconclusive
4. Pending

e. Additional Testing Information

i. Text

5. <u>Vaccination Information</u>

a. Vaccination Status

i. Dropdown ->

1. Fully Vaccinated

2. Partially Vaccinated

3. Not Vaccinated

4. Prefer not to say

b. Type of Vaccine

i. Dropdown ->

1. Cholera

2. Dtap

3. Tdap

4. Td

5. BCG

6. Smallpox

7. Yellow Fever

8. Ebola

9. Covid-19

10. Flu

11. MMR

12. MMRV

c. Date of First Dose

i. Data validation – Date

d. Date of Second Dose

i. Data validation – Date

e. Date of Third Dose/Booster

i. Data validation – Date

6. <u>Contact Tracing and Transmission</u>

a. Close Contacts Identified

i. Text

b. Close Contacts Address/Phone Number

i. Text

c. Additional Close Contact Information

i. Text

d. Date of Last Contact

i. Data validation -> Date

e. Close Contact Follow-Up Status

i. Text

f. Travel History

i. Text

g. Occupation Type

i. Dropdown ->

1. Healthcare worker
2. Essential worker
3. Non-essential worker
4. Unemployed
5. Retired
6. Student
7. Other

h. Place of Occupation

i. Text

7. <u>Compliance Monitoring</u>

a. Public Health Notifications Sent

i. Dropdown ->

1. Yes

2. No

b. Number of Notifications Sent

i. Data Validation - Number

c. Compliance Level

i. Dropdown ->

1. Fully

2. Partially

3. Non-compliant

4. N/A

d. Monitoring Frequency

i. Dropdown ->

1. Daily

2. EOD

3. Weekly

4. Monthly

5. N/A

e. Monitoring Method

i. Phone Call

ii. Email

iii. Text

iv. Electronic

v. Other

f. Last Compliance Date

i. Data validation – Date

g. **Non-Compliance Incidents**

    i. Text

h. **Enforcement Actions Taken**

    i. Text

i. **Legal or Compliance Documentation**

    i. Text

j. **Monitoring Officer/Staff Assigned**

    i. Text

8. **<u>Support and References</u>**

a. **Needs Assessment**

    i. Text

b. **Referral To Support Services**

    i. Dropdown ->

        1. Yes

        2. No

c. **Support Services Provided**

    i. Text

d. **Date of Services Provided**

    i. Data validation -> date

e. **Additional Support Notes**

    i. Text

9. **<u>Outcome and Recovery</u>**

a. **Recovery Status**

    i. Dropdown ->

1. Recovered
2. Still Symptomatic
3. Escalated Condition

b. Criteria for Q/I Release

i. Text

c. Release Date

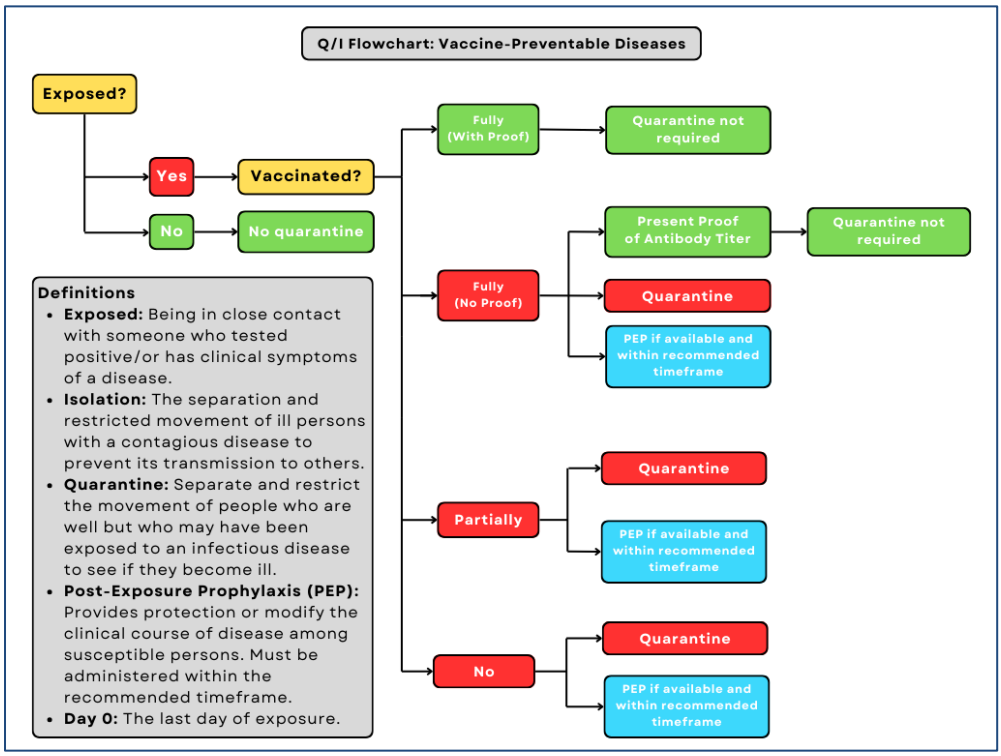
i. Data validation -> Date

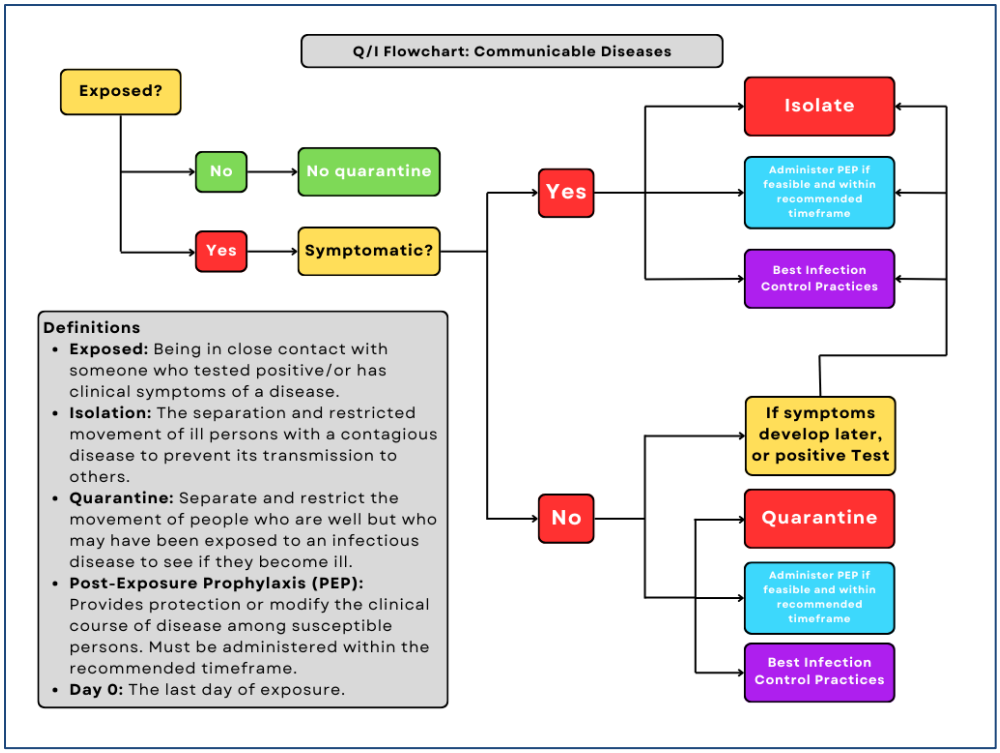
10. <u>Special Circumstances/Additional Information</u>

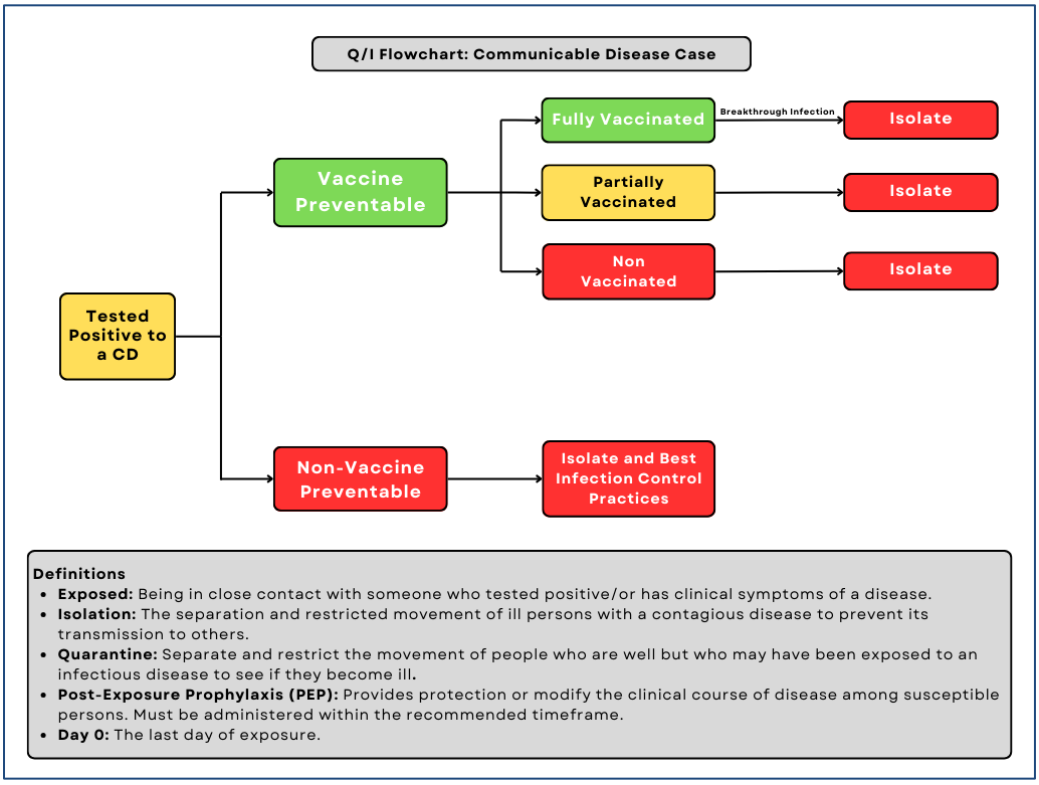
a. Quarantine/Isolation Challenges

i. Text

1.4 Quarantine and Isolation Flowcharts




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
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 Disease Case
Tested Positive to a CD
Vaccine Preventable
Fully Vaccinated
Breakthrough Infection
Isolate
Partially Vaccinated
Isolate
Non Vaccinated
Isolate
Non-Vaccine Preventable
Isolate and Best Infection Control Practices
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.

1.5 Quarantine and Isolation Written Workflow

Vaccine-Preventable Diseases Written Workflow

Exposure

- **Question:** Has the individual been exposed to a vaccine-preventable communicable disease?
    - → **No:** Quarantine is not required. The individual can continue normal activities.
    - → **Yes:** Proceed to Vaccination Status.

Vaccination Status

- **Fully Vaccinated with Proof**
    - → **No Quarantine Required:** The individual does not need to quarantine due to their verified immunity. Proof of vaccination should be sent to Jackson County Public Health (JCPH) and documented (ex - vaccination card, medical records).
    - → **Administer Post-Exposure Prophylaxis (PEP):** If available and within the recommended time frame, PEP is recommended as an extra precaution. PEP can

modify the course of the disease and may prevent onset if given promptly. Refer to the JCPH PEP list for availability.

- **Fully Vaccinated with No Proof**
  - → **Quarantine Required:** Without proof of vaccination, the individual should quarantine for the recommended period. Verification of vaccination status is essential; lack of proof necessitates precautionary measures.
  - → **Administer PEP:** If available and within the recommended time frame, PEP is recommended as an extra precaution. PEP can modify the course of the disease and may prevent onset if given promptly. Refer to the JCPH PEP list for availability.
  - → **Proof of Antibody Titer:** If the individual can present a valid antibody titer demonstrating immunity specific to the disease, quarantine is not required.
- **Partially Vaccinated**
  - → **Quarantine Required:** The individual should quarantine as they may not have full immunity. Partial vaccination may not provide adequate protection against the disease.
  - → **Administer PEP:** If available and within the recommended time frame, PEP is recommended as an extra precaution. PEP can modify the course of the disease and may prevent onset if given promptly. Refer to the JCPH PEP list for availability.
- **Non-Vaccinated**
  - → **Quarantine Required:** The individual must quarantine to prevent potential spread. Unvaccinated individuals are at higher risk and require full precautionary measures.

→ **Administer PEP:** If available and within the recommended time frame, PEP is recommended as an extra precaution. PEP can modify the course of the disease and may prevent onset if given promptly. Refer to the JCPH PEP list for availability.

Definitions

- **Exposure:** Close contact with someone who has a confirmed case of a vaccine-preventable disease.
- **Partially Vaccinated:** Incomplete vaccination series; not all recommended doses have been received.
- **Proof of Vaccination:** Official documentation confirming vaccine administration.
- **Post-Exposure Prophylaxis (PEP):** Medical treatment given after exposure to prevent disease development.
- **Quarantine:** Separation and restriction of movement of people who were exposed to see if they become sick.

Additional Considerations

- **Communication with JCPH:** Individuals should promptly report exposures to JCPH for guidance.
- **Duration of Quarantine:** Follow JCPH guidelines on the recommended quarantine period.
- **Monitoring for Symptoms:** Individuals in quarantine should monitor for symptoms and seek medical attention if severe symptoms develop.
- **Vaccination Updates:** If applicable, partially vaccinated or non-vaccinated individuals are encouraged to complete or start their vaccination series after quarantine.

- **PEP Timing:** PEP should be administered as soon as possible after exposure for maximum effectiveness.
- **Work and School Policies:** Adhere to employer or school protocols in coordination with JCPH

Communicable Diseases Workflow

Exposure

- **Question:** Has the individual been exposed to someone with a communicable disease?
  - → **No:** Quarantine is not required. The individual can continue normal activities.
  - → **Yes:** Proceed to Symptoms.

Symptoms

- **Symptomatic**
  - → **Isolate Immediately:** The individual should separate themselves from others to prevent potential spread.
  - → **Practice Best Infection Control Measures:** Wear masks, maintain hand hygiene, avoid public places, etc. Follow healthcare provider instructions and JCPH guidelines.
- **Asymptomatic with Positive Test**
  - → **Quarantine Required:** The individual must quarantine to prevent potential spread
  - → **Administer PEP:** If available and within the recommended time frame, PEP is recommended. Refer to the JCPH PEP list.

→ **Practice Best Infection Control Measures:** Continue preventive measures as advised by healthcare providers and JCPH.

Definitions

- **Exposure:** Close contact with someone who has a confirmed or suspected communicable disease.
- **Symptomatic:** Showing symptoms consistent with the communicable disease.
- **Asymptomatic:** Not showing any symptoms.
- **Isolation:** Separation of individuals who are sick from those who are healthy.
- **Quarantine:** Restriction of movement of individuals who were exposed but are not yet symptomatic.
- **Best Infection Control Measures:** Actions like hand washing, wearing masks, disinfecting surfaces, maintaining social distance, etc.
- **Post-Exposure Prophylaxis (PEP):** Treatment administered after exposure to prevent disease development.

Additional Considerations

- **Symptomatic Individuals**: Should seek medical attention promptly and may require testing to confirm the disease.
- **Asymptomatic Individuals**: Should monitor for symptoms during the quarantine period and report any changes to JCPH.
- **Quarantine**: Generally lasts for 14 days from the last known exposure, as per JCPH recommendations.
- **Communication with JCPH:** Follow all instructions provided by JCPH for isolation, quarantine, and release from these measures.

- **Notification to Work or School**: Inform employers or educational institutions as required, while respecting privacy and confidentiality laws.
- **Return to Work/School**: Adhere to JCPH and institutional guidelines regarding returning after isolation or quarantine.
- **Household Member Precautions**: Household members should also practice best infection control measures to reduce risk. They also may need to quarantine if they have been exposed to the infected individual.

Communicable Disease Case Workflow

Positive Test Confirmation

- **Question:** Has this individual been moved to a probable, suspected, or confirmed communicable disease case?

    → **Yes:** Proceed to Disease Type Evaluation.

Disease Type Evaluation

- **Question:** Is this communicable disease vaccine-preventable?

    → **Yes:** Proceed to Vaccination Status.

    → **No:** Proceed to Non-Vaccine-Preventable Disease

Vaccination Status

- **Fully Vaccinated**

    → **Isolate Immediately:** This is classified as a breakthrough infection; isolation is necessary. Follow JCPH isolation guidelines.

    → **Practice Best Infection Control Measures:** Wear masks, maintain hand hygiene, avoid contact with others, etc.

- **Partially Vaccinated**

    → **Isolate Immediately:** Isolation is required. Partial vaccination may reduce symptom severity but does not eliminate transmission risk.

    → **Practice Best Infection Control Measures:** Wear masks, maintain hand hygiene, avoid contact with others, etc.

- **Non-Vaccinated**

→ **Isolate Immediately:** High risk of severe disease and transmission. Unvaccinated individuals may experience more severe symptoms.

→ **Practice Best Infection Control Measures:** Wear masks, maintain hand hygiene, avoid contact with others, etc.

- **Non-Vaccine-Preventable Disease**

→ **Isolate Immediately:** To prevent spreading the disease to others. Refer to specific guidelines provided by JCPH.

→ **Practice Best Infection Control Measures:** Wear masks, maintain hand hygiene, avoid contact with others, etc.

Definitions

- **Case:** An individual who has probable, suspected, or confirmed infection with a communicable disease.
- **Vaccine-Preventable Disease:** A disease for which a vaccine exists and can prevent infection. Examples could include: Measles, mumps, rubella, pertussis, etc.
- **Non-Vaccine-Preventable Disease:** A disease with no available vaccine for prevention.
- **Isolation:** Separation of infected individuals to prevent spread.
- **Best Infection Control Measures:** Actions to minimize the risk of transmitting the disease to others, such as wearing masks, hand hygiene, disinfecting surfaces, and maintaining social distance.

Additional Considerations

- **Medical Attention**

→ **Seek Immediate Care:** If experiencing severe symptoms like difficulty breathing, chest pain, or confusion.

→ **Follow Treatment Plans:** Adhere to prescribed medications and therapies as directed by healthcare providers.

- **Contact Tracing**
  → **Notify Close Contacts:** Inform those you've been in close contact with so they can take appropriate actions.
  → **Cooperate with JCPH:** Provide information to assist in contact tracing efforts.
- **Returning to Normal Activities**
  → **Clearance Criteria:** Meet all isolation discontinuation criteria as per JCPH guidelines.
  → **Follow-Up Testing:** May be required before ending isolation; follow JCPH recommendations.
- **Communication with JCPH**
  → **Regular Updates:** JCPH will contact you to request updates of any changes in symptoms or health status.
  → **Compliance:** Adhere to all directives provided by JCPH to ensure public health safety.

Diseases with Available Post-Exposure Prophylaxis (PEP)

Disease	PEP	Indications	Notes
HIV (Human Immunodeficiency Virus)	- Initiate antiretroviral therapy as soon as possible, ideally within 72 hours of exposure. - Regimen: 3 antiretroviral drugs for 28 days (e.g., tenofovir, emtricitabine, plus a third agent).	- Potential exposure through sexual contact, needle sharing, or occupational exposure (e.g., needlestick injury).	- Adherence to the full regimen is crucial. - Baseline and follow-up HIV testing recommended. - Reference: CDC - PEP
HBV (Hepatitis B Virus)	- Hepatitis B immune globulin (HBIG) and initiate hepatitis B vaccine series if unvaccinated. - If previously vaccinated with inadequate response, administer HBIG and a vaccine booster.	- Exposure to blood or body fluids from a person known or suspected to be HBsAg-positive. - Sexual exposure to an HBsAg-positive person.	- Administer as soon as possible, preferably within 24 hours. - Provides immediate and long-term protection. - Reference: CDC - HBV PEP
HAV (Hepatitis A Virus)	- Hepatitis A vaccine within 2 weeks of exposure for healthy individuals aged 12 months to 40 years. - Immune globulin (IG) for those <12 months, >40 years, immunocompromised, or with chronic liver disease.	- Close personal contact with someone infected with hepatitis A. - Exposure to contaminated food or water.	- Vaccine provides long-term protection. - IG provides temporary protection. - Reference: CDC Yellow Book - HAV PEP

Disease	PEP	Indications	Notes
Rabies	- Immediate wound cleansing with soap and water. - Human rabies immune globulin (HRIG) infiltrated around the wound. - Rabies vaccine series on days 0, 3, 7, and 14.	- Bite, scratch, or exposure to saliva from a rabid or suspected rabid animal.	- PEP is highly effective if administered promptly. - Previously vaccinated individuals receive only the vaccine series. - Reference: CDC - Rabies PEP
Varicella (Chickenpox)	- Varicella vaccine within 3 to 5 days of exposure for susceptible individuals. - VariZIG (Varicella Zoster Immune Globulin) within 10 days for high-risk individuals who cannot receive the vaccine.	- Exposure to varicella in susceptible individuals (no history of disease or vaccination).	- Vaccine can prevent or lessen disease severity. - VariZIG provides passive immunity. - Reference: CDC - Varicella PEP
Measles	- MMR vaccine within 72 hours of exposure for susceptible individuals. - Immune globulin (IGIM) within 6 days for high-risk individuals unable to receive the vaccine.	- Exposure to measles in susceptible individuals.	- Vaccine can prevent disease if given promptly. - IG provides passive immunity. - Reference: CDC - Measles PEP

Disease	PEP	Indications	Notes
Tetanus	- Tetanus toxoid-containing vaccine (Tdap or Td) for those with incomplete vaccination. - Tetanus immune globulin (TIG) for certain wound types in under-immunized persons.	- Wounds contaminated with dirt, feces, soil, saliva; puncture wounds, burns, frostbite.	- Proper wound management is essential. - PEP depends on immunization status and wound characteristics. - Reference: CDC - Tetanus PEP
Pertussis (Whooping Cough)	- Antibiotics (e.g., azithromycin).	- Close contacts of a pertussis case, especially infants, pregnant women, and individuals in high-risk settings.	- Early PEP can prevent or reduce severity. - Vaccination status should be updated. - Reference: CDC - Pertussis PEP
Meningococcal Disease	- Antibiotics (e.g., rifampin, ciprofloxacin, or ceftriaxone).	- Close contacts of someone with meningococcal disease.	- Administer as soon as possible. - Reference: CDC - Meningococcal PEP
Influenza	- Antiviral medications (e.g., oseltamivir) within 48 hours of exposure.	- Unvaccinated individuals at high risk for complications who have been exposed.	- Not a substitute for vaccination. - Reference: CDC - Influenza Antivirals

Disease	PEP	Indications	Notes
Latent Tuberculosis (LTBI)	- Treatment for latent TB infection (LTBI) with medications like isoniazid or rifampin.	- Individuals with a positive TB test after exposure to an active TB case.	- Reduces risk of developing active TB. - Adherence to therapy is crucial. - Reference: CDC - Latent TB Infection
Diphtheria	- Antibiotics (e.g., erythromycin or penicillin). - Booster vaccination if needed.	- Close contacts of a diphtheria case.	- Contacts should be monitored for symptoms. - Reference: CDC - Diphtheria
Anthrax	- Antibiotics (e.g., ciprofloxacin or doxycycline) for 60 days. - Anthrax vaccine if available.	- Exposure to Bacillus anthracis spores.	- Early initiation is critical. - Vaccine availability may be limited. - Reference: CDC - Anthrax PEP
Varicella Zoster (Shingles) Exposure in Pregnancy	- VariZIG within 10 days of exposure for susceptible pregnant women.	- Pregnant women exposed to varicella or shingles without evidence of immunity.	- Vaccine is contraindicated in pregnancy. - VariZIG may reduce severity. - Reference: CDC - Varicella PEP
Plague	- Antibiotics (e.g., doxycycline or ciprofloxacin) for 7 days.	- Close contacts of pneumonic plague cases.	- Early prophylaxis is essential. - Reference: CDC - Plague PEP

Disease	PEP	Indications	Notes
Sexually Transmitted Infections (STIs)	- Doxycycline 200 mg within 72 hours after sexual exposure (in certain high-risk populations).	- High-risk individuals as part of STI prevention strategies.	- Considered in specific settings. - More research is ongoing. - Reference: CDC - Bacterial STI PEP
Smallpox	- Smallpox vaccine within 3 days of exposure.	- Exposure to the smallpox virus.	- Vaccine may prevent or lessen disease severity. - Reference: CDC - Smallpox Treatment

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1.6 References to Existing Support Services for Quarantine and Isolation

North Carolina Department of Health and Human Services' COVID-19 Support Services Program: This program provided a variety of services to individuals in isolation or quarantine, such as financial relief payments, food assistance, transportation to medical appointments, and

medication delivery. Over 41,800 households benefited from these supports during COVID-19. This program also offered personal care items like masks and hand sanitizers (NC DHHS).
Multnomah County, Oregon: Multnomah County offers a network of community resources, including access to food assistance (e.g., SNAP, WIC), healthcare support for uninsured individuals, and mental health services through their 211 hotline. This hotline helps individuals in quarantine or isolation connect with services to meet basic needs such as food, healthcare, and rent assistance (Multnomah County).

Contact Tracing Playbook: This highlights various supports that could be useful for isolation, such as daily check-ins, care packages, telehealth services, financial stipends for those without sick leave, housing assistance, and even incentives like access to high-speed internet. They also emphasize the importance of wraparound services like childcare, legal support, and negotiating with employers and landlords to ensure individuals can safely remain in isolation (Contact Tracing Playbook).

Illinois Housing Development Authority (IHDA) COVID-19 Housing Assistance: The IHDA COVID-19 Housing Assistance programs provided emergency rental assistance to residents struggling due to the pandemic. These programs helped tenants facing eviction by offering funds to cover rent arrears and upcoming payments. It also supported homeowners through mortgage assistance programs. The IHDA worked with community organizations to ensure those in need were connected to financial relief and legal support, particularly during mandated isolation or quarantine periods. These efforts were aimed at mitigating housing insecurity caused by the pandemic. (IDHA COVID-19 Housing Assistance)

California COVID-19 Rent Relief (State Controller's Office): This program was part of California's broad COVID-19 relief efforts, designed to help renters and landlords manage the financial burden of the pandemic. It provided direct financial assistance for rent and utilities to renters impacted by COVID-19, preventing evictions and helping families stay in their homes. Eligible tenants could apply for up to 100% of unpaid rent and utility bills from April 1, 2020, onward. The relief was funded by federal and state funds and offered to both tenants and landlords willing to forgive late rent or utility payments. This program aimed to prevent homelessness and financial hardship during quarantine and isolation. (CA COVID-19 Rent Relief)

Massachusetts Coronavirus Relief Fund (CVRF): Designed to help local governments respond to the COVID-19 public health emergency. This program provided municipalities with funding to cover costs directly related to COVID-19, including those associated with quarantine and isolation support services. It enabled cities and towns to reimburse expenses like personal protective equipment (PPE), medical and public health needs, housing support, food distribution, and other essential services that helped residents comply with isolation and quarantine orders. The program also extended financial assistance to vulnerable populations, ensuring that housing, utilities, and food insecurity issues were addressed during mandatory isolation. Municipalities could apply the funds towards housing programs, including rent and mortgage relief, to keep people in their homes while they were unable to work due to quarantine. (Massachusetts CVRF)

Alameda County Emergency Rental Assistance Program: Alameda County launched the Emergency Rental Assistance Program (ERAP) to help renters maintain housing during the COVID-19 pandemic. It provided financial support for rent and utilities, prioritizing households

impacted by quarantine or isolation. The program aimed to prevent eviction and ensure that renters could meet their basic housing needs during the pandemic, ultimately helping to reduce the risk of homelessness (Alameda, CA)

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1.7 Quarantine and Isolation Policy Reference Report

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September 10, 2024

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Lee's Summit, Missouri 64064

Dr. Adeyemi Adedokun, MPH, DrPH
Communicable Disease Epidemiology Coordinator
3651 NE Ralph Powell Rd
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Dear Dr. Illabaca-Somoza and Dr. Adedokun,
Attached is the Quarantine and Isolation Policy Reference document, which compiles essential federal, state, and local regulations pertaining to communicable diseases. This reference is designed to serve as a comprehensive guide to inform the development of Jackson County Public Health's Quarantine and Isolation Policy. The document highlights key legal frameworks, including relevant sections of the Code of Federal Regulations, United States Public Health Service Act, as well as Missouri and neighboring states' statutes. Additionally, it provides insights into executive orders and recent updates to public health laws that may impact policy decisions.

Sincerely,

Reese Willis
Intern
Jackson County Public Health

Jackson County Public Health Quarantine and Isolation Policy References

Reese Willis

Intern

Jackson County Public Health

September 10, 2024

Prepared for

Dr. Ximena Ilabaca-Somoza, Epidemiology and Data Analytics Manager, and Dr. Adeyemi Adedokun, Communicable Disease Epidemiology Coordinator

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EXECUTIVE SUMMARY

Quarantine and Isolation Policy for Jackson County Public Health

The development of a comprehensive Quarantine and Isolation Policy is crucial for Jackson County Public Health (JCPH) to effectively manage communicable disease outbreaks. This report outlines the key federal, state, and local regulations that should guide the creation of such a policy. Drawing from the Code of Federal Regulations (CFR), the Public Health Service Act, and relevant Missouri statutes, the policy will be designed to ensure the safety and well-being of the community while adhering to legal frameworks.

Federal laws provide the foundation for quarantine and isolation procedures, particularly through Title 42 of the United States Code and the regulations within the CFR, which detail definitions, conditions, and enforcement protocols for managing public health emergencies. In addition to federal guidance, the document includes state-specific statutes from Missouri and its neighboring states that grant authority to local health officers to impose quarantine measures and outline penalties for violations.

Key findings from this policy reference include:

- Definitions and Frameworks: Quarantine and isolation, as defined by federal law, refer to the separation of individuals exposed to or infected with communicable diseases to prevent further transmission.
- State-Specific Guidelines: Missouri's statutes grant authority to local health officers to enforce quarantine measures, while outlining penalties for those who violate such orders.
- Executive Orders: A review of relevant Executive Orders highlights the list of quarantinable diseases, which includes infectious diseases such as tuberculosis, smallpox, and more recent additions like measles and novel influenza strains.
- Enforcement and Penalties: Violations of quarantine or isolation orders can result in fines and imprisonment, both at federal and state levels.

September 10, 2024

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INTRODUCTION

The formulation of a robust Quarantine and Isolation Policy is a critical step in safeguarding public health during outbreaks of communicable diseases. Such policies, grounded in legal frameworks, ensure that public health authorities have the necessary tools to prevent the transmission of infectious diseases within the community. Quarantine and isolation measures have been proven effective in controlling the spread of diseases, and their application is governed by a combination of federal, state, and local laws.

This report presents a detailed overview of the relevant quarantine and isolation regulations, focusing on the legal and procedural frameworks that Jackson County Public Health (JCPH) must consider when drafting its own policy. By analyzing federal guidelines, Missouri-specific statutes, neighboring state laws, and county codes, the report aims to provide a comprehensive reference for ensuring JCPH's policies are compliant and effective. This document serves as a resource for informed policy-writing, enabling JCPH to implement public health measures proactively and effectively in the face of infectious disease threats.

BACKGROUND

Quarantine and isolation have long been cornerstones of public health practice, particularly in the management of communicable diseases. Quarantine refers to the separation of individuals who may have been exposed to a contagious disease but are not yet symptomatic, while isolation pertains to separating those who are infected from those who are healthy to prevent further transmission. These measures are supported by a legal framework that empowers public health authorities to act swiftly to protect the population.

At the federal level, the authority for quarantine and isolation is derived from the Public Health Service Act and is implemented through the Code of Federal Regulations (42 CFR, Part 70). These regulations provide the Centers for Disease Control and Prevention (CDC) with the authority to control the spread of diseases across state lines and internationally. In addition,

Missouri's public health statutes, along with laws from neighboring states, outline the roles and responsibilities of local health authorities in enforcing quarantine and isolation measures. This legal framework ensures that public health officials can respond decisively during disease outbreaks, with penalties in place for violations of quarantine orders.

By adhering to these guidelines, Jackson County Public Health can ensure its policies are written in reference to current policies, and align with both state and federal laws, facilitating a coordinated response to public health emergencies.

FEDERAL REFERENCES

I. Code of Federal Regulations

a. PART 70—INTERSTATE QUARANTINE; § 70.1 General definitions.

i. *Apprehension* means the temporary taking into custody of an individual or group for purposes of determining whether Federal quarantine, isolation, or conditional release is warranted.

ii. *Communicable diseases* means illnesses due to infectious agents or their toxic products, which may be transmitted from a reservoir to a susceptible host either directly as from an infected person or animal or indirectly through the agency of an intermediate plant or animal host, vector, or the inanimate environment.

iii. *Communicable period* means the period or periods during which the etiologic agent may be transferred directly or indirectly from the body of the infected person or animal to the body of another.

iv. *Communicable stage* means the stage during which an infectious agent may be transmitted either directly or indirectly from an infected individual to another individual.

v. *Conditional release* means the temporary supervision by a public health official (or designee) of an individual or group, who may have been exposed to a quarantinable communicable disease to determine the risk of disease spread and includes public health supervision through in-person visits, telephone, or through electronic or Internet-based monitoring.

vi. *Director* means the Director, Centers for Disease Control and Prevention, Department of Health and Human Services, or another authorized representative as approved by the CDC Director or the Secretary of HHS.

vii. *Electronic or Internet-based monitoring* means mechanisms or technologies allowing for the temporary public health supervision of an individual under conditional release and may include communication through electronic mail, SMS texts, video or audio conference, webcam technologies, integrated voice-response systems, entry of information into a Web-based forum, wearable tracking technologies, and other mechanisms or technologies as determined by the Director or supervising health authority.

viii. *Ill person* means an individual who:

1. Has a fever (a measured temperature of 100.4 °F [38 °C] or greater, or feels warm to the touch, or gives a history of feeling feverish) accompanied by one or more of the following: Skin rash, difficulty breathing, persistent cough, decreased consciousness or confusion of recent onset, new unexplained bruising or bleeding

(without previous injury), persistent diarrhea, persistent vomiting (other than air sickness), headache with stiff neck, appears obviously unwell; or

2. Has a fever that has persisted for more than 48 hours; or
3. Has symptoms or other indications of communicable disease, as the CDC may announce through posting of a notice in the Federal Register.

ix. *Isolation* means the separation of an individual or group reasonably believed to be infected with a quarantinable communicable disease from those who are healthy to prevent the spread of the quarantinable communicable disease.

x. *Precommunicable stage* means the stage beginning upon an individual's earliest opportunity for exposure to an infectious agent and ending upon the individual entering or reentering the communicable stage of the disease or, if the individual does not enter the communicable stage, the latest date at which the individual could reasonably be expected to have the potential to enter or reenter the communicable stage.

xi. *Public health emergency* as used in this part means:

1. Any communicable disease event as determined by the Director with either documented or significant potential for regional, national, or international communicable disease spread or that is highly likely to cause death or serious illness if not properly controlled; or

2. Any communicable disease event described in a declaration by the Secretary pursuant to 319(a) of the Public Health Service Act (42 U.S.C. 247d (a)); or
3. Any communicable disease event the occurrence of which is notified to the World Health Organization, in accordance with Articles 6 and 7 of the International Health Regulations, as one that may constitute a Public Health Emergency of International Concern; or
4. Any communicable disease event the occurrence of which is determined by the Director-General of the World Health Organization, in accordance with Article 12 of the International Health Regulations, to constitute a Public Health Emergency of International Concern; or
5. Any communicable disease event for which the Director-General of the World Health Organization, in accordance with Articles 15 or 16 of the International Health Regulations, has issued temporary or standing recommendations for purposes of preventing or promptly detecting the occurrence or reoccurrence of the communicable disease.

xii. *Public health prevention measures* means the assessment of an individual through non-invasive procedures and other means, such as observation, questioning, review of travel documents, records review, and other non-invasive means, to determine the individual's health status and potential public health risk to others.

xiii. *Qualifying stage* is statutorily defined (42 U.S.C. 264(d)(2)) to mean:

1. The communicable stage of a quarantinable communicable disease; or the precommunicable stage of the quarantinable communicable disease, but only if the quarantinable communicable disease would be likely to cause a public health emergency if transmitted to other individuals.

xiv. *Quarantine* means the separation of an individual or group reasonably believed to have been exposed to a quarantinable communicable disease, but who are not yet ill, from others who have not been so exposed, to prevent the possible spread of the quarantinable communicable disease.

xv. *Quarantinable communicable disease* means any of the communicable diseases listed in an Executive Order, as provided under section 361 of the Public Health Service Act. Executive Order 13295, of April 4, 2003, as amended by Executive Order 13375 of April 1, 2005, contains the current revised list of quarantinable communicable diseases, and may be obtained at http://www.cdc.gov and http://www.archives.gov/federal_register. If this Order is amended, HHS will enforce that amended order immediately and update that Web site.

xvi. *Reasonably believed to be infected, as applied to an individual*, means specific articulable facts upon which a public health officer could reasonably draw the inference that an individual has been exposed, either directly or indirectly, to the infectious agent that causes a quarantinable communicable disease, as through contact with an infected person or an infected person's bodily fluids, a contaminated

environment, or through an intermediate host or vector, and that as a consequence of the exposure, the individual is or may be harboring in the body the infectious agent of that quarantinable communicable disease.

b. § 70.2 Measures in the event of inadequate local control.

    i. Whenever the Director of the Centers for Disease Control and Prevention determines that the measures taken by health authorities of any State or possession (including political subdivisions thereof) are insufficient to prevent the spread of any of the communicable diseases from such State or possession to any other State or possession, he/she may take such measures to prevent such spread of the diseases as he/she deems reasonably necessary, including inspection, fumigation, disinfection, sanitation, pest extermination, and destruction of animals or articles believed to be sources of infection.

c. § 70.3 All communicable diseases.

    i. A person who has a communicable disease in the communicable period shall not travel from one State or possession to another without a permit from the health officer of the State, possession, or locality of destination, if such permit is required under the law applicable to the place of destination. Stop-overs other than those necessary for transportation connections shall be considered as places of destination.

d. § 70.4 Report of disease.

    i. The master of any vessel or person in charge of any conveyance engaged in interstate traffic, on which a case or suspected case of a

communicable disease develops shall, as soon as practicable, notify the local health authority at the next port of call, station, or stop, and shall take such measures to prevent the spread of the disease as the local health authority directs.

e. § 70.5 Requirements relating to travelers under a Federal order of isolation, quarantine, or conditional release.

i. The following provisions are applicable to any individual under a Federal order of isolation, quarantine, or conditional release with regard to a quarantinable communicable disease or to any individual meeting the requirements of paragraph (d), (e), or (f) of this section:

1. Except as specified under the terms of a Federal conditional release order, no such individual shall travel in interstate traffic or from one State or U.S. territory to another without a written travel permit issued by the Director.

2. Requests for a travel permit must state the reasons why the travel is being requested, mode of transportation, the places or individuals to be visited, the precautions, if any, to be taken to prevent the potential transmission or spread of the communicable disease, and other information as determined necessary by the Director to assess the individual's health condition and potential for communicable disease spread to others.

3. The Director will consider all requests for a permit and, taking into consideration the risk of introduction, transmission, or spread of the communicable disease, may condition the permit upon

compliance with such precautionary measures as the Director shall prescribe. The Director shall respond to a request for a permit within 5 business days.

4. An individual to whom a permit has been issued shall retain it in his/her possession throughout the course of his/her authorized travel and comply with all conditions prescribed therein, including presentation of the permit to the operators of conveyances, as required by its terms.
5. An individual who has had his/her request for a permit denied, or who has had a travel permit suspended or revoked, may submit a written appeal to the Director (excluding the CDC official who denied, suspended, or revoked the permit). The appeal must be in writing, state the factual basis for the appeal, and be submitted to the Director (excluding the CDC official who denied, suspended, or revoked the permit) within 10 calendar days of the denial, suspension, or revocation of the permit. The Director (excluding the CDC official who denied, suspended, or revoked the permit) will issue a written response to the appeal within 3 business days, which shall constitute final agency action.

ii. The operator of any conveyance operating in interstate traffic shall not:

1. Accept for transportation any individual whom the operator knows, or reasonably should know, to be under a Federal order of isolation, quarantine, or conditional release, unless such an

individual presents a permit issued by the Director or a copy of the Federal conditional release order authorizing such travel;

2. Transport any individual whom the operator knows, or reasonably should know, to be under a Federal order of isolation, quarantine, or conditional release in violation of any of the terms or conditions prescribed in the travel permit or conditional release order issued by the Director.

iii. Whenever a conveyance operating in interstate traffic transports an individual under a Federal order or travel permit, the Director may require that the operator of the conveyance submit the conveyance to inspection, sanitary measures, and other measures, as the Director deems necessary to prevent the possible spread of communicable disease.

iv. The Director may additionally apply the provisions in paragraphs (a) through (c) of this section to individuals traveling entirely intrastate and to conveyances that transport such individuals upon the request of a State or local health authority of jurisdiction. The Director shall consider the State or local health authority's request for assistance and taking into consideration the risk of introduction, transmission, or spread of the communicable disease, grant or deny, in his/her discretion, the request for assistance.

v. The Director may additionally apply the provisions in paragraphs (a) through of this section (c) to individuals traveling interstate or entirely intrastate and to conveyances that transport such individuals whenever the Director makes a determination under 42 CFR 70.2 that based on the

existence of inadequate local control such measures are needed to prevent the spread of any of the communicable diseases from such State or U.S. territory to any other State or U.S. territory.

vi. The Director may additionally apply the provisions in paragraphs (a) through (c) of this section to individuals under a State or local order, or written agreement, for quarantine, isolation, or conditional release and to conveyances that may transport such individuals, upon the request of a State or local health authority of jurisdiction or whenever the Director makes a determination of inadequate local control under 42 CFR 70.2. The Director shall consider the State or local health authority's request for assistance and taking into consideration the risk of introduction, transmission, or spread of the communicable disease, grant or deny, in his/her discretion, the request for assistance.

vii. The Director may exempt individuals and non-public conveyances, such as ambulances, air ambulance flights, or private vehicles, from the requirements of this section.

viii. [82 FR 6970, Jan. 19, 2017]

f. § 70.6 Apprehension and detention of persons with quarantinable communicable diseases.

i. The Director may authorize the apprehension, medical examination, quarantine, isolation, or conditional release of any individual for the purpose of preventing the introduction, transmission, and spread of quarantinable communicable diseases, as specified by Executive Order, based upon a finding that:

1. The individual is reasonably believed to be infected with a quarantinable communicable disease in a qualifying stage and is moving or about to move from a State into another State; or
2. The individual is reasonably believed to be infected with a quarantinable communicable disease in a qualifying stage and constitutes a probable source of infection to other individuals who may be moving from a State into another State.

ii. The Director will arrange for adequate food and water, appropriate accommodation, appropriate medical treatment, and means of necessary communication for individuals who are apprehended or held in quarantine or isolation under this part.

iii. [82 FR 6971, Jan. 19, 2017]

g. § 70.7 Responsibility with respect to minors, wards, and patients.

i. A parent, guardian, physician, nurse, or other such person shall not transport, or procure or furnish transportation for any minor child or ward, patient or other such person who is in the communicable period of a communicable disease, except in accordance with provisions of this part.

h. § 70.10 Public health prevention measures to detect communicable disease.

i. The Director may conduct public health prevention measures at U.S. airports, seaports, railway stations, bus terminals, and other locations where individuals may gather to engage in interstate travel, through non-invasive procedures determined appropriate by the Director to detect the presence of communicable diseases.

ii. As part of the public health prevention measures, the Director may require individuals to provide contact information such as U.S. and foreign addresses, telephone numbers, email addresses, and other contact information, as well as information concerning their intended destination, health status, known or possible exposure history, and travel history.

iii. [82 FR 6971, Jan. 19, 2017]

i. § 70.12 Medical examinations.

i. The Director may require an individual to undergo a medical examination as part of a Federal order for quarantine, isolation, or conditional release for a quarantinable communicable disease.

ii. The Director shall promptly arrange for the medical examination to be conducted when one is required under this section and shall as part of the Federal order advise the individual that the medical examination shall be conducted by an authorized and licensed health worker, and with prior informed consent.

iii. As part of the medical examination, the Director may require an individual to provide information and undergo such testing as may be reasonably necessary to diagnose or confirm the presence or extent of infection with a quarantinable communicable disease.

iv. Individuals reasonably believed to be infected based on the results of a medical examination may be isolated, or if such results are inconclusive or unavailable, individuals may be quarantined or conditionally released in accordance with this part.

v. [82 FR 6971, Jan. 19, 2017]\

j. § 70.13 Payment for care and treatment.

i. The Director may authorize payment for the care and treatment of individuals subject to medical examination, quarantine, isolation, and conditional release, subject to paragraphs (b) through (h) of this section.

ii. Payment for care and treatment shall be in the CDC's sole discretion and subject to the availability of appropriations.

iii. Payment shall be secondary to the obligation of the United States or any third-party (i.e., any State or local governmental entity, private insurance carrier, or employer), under any other law or contractual agreement, to pay for such care and treatment, and shall be paid by the Director only after all third-party payers have made payment in satisfaction of their obligations.

iv. Payment may include costs for providing ambulance or other medical transportation when such services are deemed necessary by the Director for the individual's care and treatment.

v. Payment shall be limited to those amounts the hospital, medical facility, or medical transportation service would customarily bill the Medicare system using the International Classification of Diseases, Clinical Modification (ICD-CM), and relevant regulations promulgated by the Centers for Medicare and Medicaid Services in existence at the time of billing.

vi. For quarantinable communicable diseases, payment shall be limited to costs for services and items reasonable and necessary for the care and

treatment of the individual or group for the time period beginning when the Director refers the individual or group to the hospital or medical facility and ends when, as determined by the Director, the period of apprehension, quarantine, isolation, or conditional release expires.

vii. For diseases other than those described in paragraph (f) of this section, such payment shall be limited to costs for services and items reasonable and necessary for care and treatment of the individual for the time period that begins when the Director refers the individual to the hospital or medical facility and ends when the individual's condition is diagnosed, as determined by the Director, as an illness other than a quarantinable communicable disease.

viii. For ambulance or other medical transportation, payment shall be limited to the costs for such services and other items reasonable and necessary for the individual's safe medical transport.

ix. [82 FR 6971, Jan. 19, 2017]

k. § 70.14 Requirements relating to the issuance of a Federal order for quarantine, isolation, or conditional release.

i. A Federal order authorizing quarantine, isolation, or conditional release shall be in writing, signed by the Director, and contain the following information:

1. The identity of the individual or group subject to the order;
2. The location of the quarantine or isolation or, in the case of conditional release, the entity to who and means by which the individual shall report for public health supervision;

3. An explanation of the factual basis underlying the Director's reasonable belief that the individual is in the qualifying stage of a quarantinable communicable disease;
4. An explanation of the factual basis underlying the Director's reasonable belief that the individual is moving or about to move from one State into another or constitutes a probable source of infection to others who may be moving from one State into another;
5. An explanation that the Federal order will be reassessed no later than 72 hours after it has been served and an explanation of the medical review of the Federal order pursuant to this part, including the right to request a medical review, present witnesses and testimony at the medical review, and to be represented at the medical review by either an advocate (e.g., an attorney, family member, or physician) at the individual's own expense, or, if indigent, to have representatives appointed at the government's expense;
6. An explanation of the criminal penalties for violating a Federal order of quarantine, isolation, or conditional release; and
7. An explanation that if a medical examination is required as part of the Federal order that the examination will be conducted by an authorized and licensed health worker, and with prior informed consent.

ii. A Federal order authorizing quarantine, isolation, or conditional release shall be served on the individual no later than 72 hours after the individual has been apprehended, except that the Federal order may be published or posted in a conspicuous location if the Federal order is applicable to a group of individuals and individual service would be impracticable.

iii. The Director shall arrange for translation or interpretation services of the Federal order as needed.

iv. Nothing in this section shall affect the constitutional or statutory rights of individuals to obtain judicial review of their Federal detention.

v. [82 FR 6971, Jan. 19, 2017]

l. § 70.15 Mandatory reassessment of a Federal order for quarantine, isolation, or conditional release.

i. The Director (excluding the CDC official who issued the quarantine, isolation, or conditional release order) shall reassess the need to continue the quarantine, isolation, or conditional release of an individual no later than 72 hours after the service of the Federal order.

ii. As part of the reassessment, the Director (excluding the CDC official who issued the quarantine, isolation, or conditional release order) shall review all records considered in issuing the Federal order, including travel records, records evidencing exposure or infection with a quarantinable communicable disease, as well as any relevant new information.

iii. As part of the reassessment, and where applicable, the Director (excluding the CDC official who issued the quarantine, isolation, or conditional release order) shall consider and make a determination regarding whether less restrictive alternatives would adequately serve to protect the public health.

iv. At the conclusion of the reassessment, the Director (excluding the CDC official who issued the quarantine, isolation, or conditional release order) shall promptly issue and serve a written Federal order directing that the quarantine, isolation, or conditional release be continued, modified, or rescinded.

v. In the event that the Director orders that the quarantine, isolation, or conditional release be continued or modified, the written Federal order shall explain the process for requesting a medical review under this part.

vi. The Director's written Federal order shall be promptly served on the individual, except that the Federal order may be served by publication or by posting in a conspicuous location if the Federal order is applicable to a group of individuals and individual service would be impracticable.

vii. The Director shall arrange for translation or interpretation services of the Federal order as needed.

viii. [82 FR 6971, Jan. 19, 2017]

m. § 70.16 Medical review of a Federal order for quarantine, isolation, or conditional release.

i. The Director shall, as soon as practicable, arrange for a medical review upon a request by an individual under Federal quarantine, isolation, or conditional release.

ii. A request for a medical review may only occur after the Director's mandatory reassessment under section 70.15 and following the service of a Federal order continuing or modifying the quarantine, isolation, or conditional release.

iii. The medical review shall be for the purpose of ascertaining whether the Director has a reasonable belief that the individual is infected with a quarantinable communicable disease in a qualifying stage.

iv. The Director shall notify the individual in writing of the time and place of the medical review.

v. The Director (excluding the CDC official who issued the quarantine, isolation, or conditional release order) shall designate a medical reviewer to review the medical or other evidence presented at the review, make medical or other findings of fact, and issue a recommendation concerning whether the Federal order for quarantine, isolation, or conditional release should be rescinded, continued, or modified.

vi. The individual under Federal quarantine, isolation, or conditional release may authorize an advocate (e.g., an attorney, family member, or physician) at his or her own expense to submit medical or other evidence and, in the medical reviewer's discretion, be allowed to present a reasonable number of medical experts. The Director (excluding the CDC

official who issued the quarantine, isolation, or conditional release order) shall appoint representatives at government expense to assist the individual for purposes of the medical review upon a request and certification, under penalty of perjury, by that individual that he or she is indigent.

vii. Prior to the convening of the review, the individual or his/her authorized advocate or representatives shall be provided a reasonable opportunity to examine the available medical and other records involved in the medical review that pertain to that individual.

viii. The Director shall take such measures that he/she determines to be reasonably necessary to allow an individual under Federal quarantine or isolation to communicate with any authorized advocate or representatives in such a manner as to prevent the possible spread of the quarantinable communicable disease.

ix. The medical reviewer may order a medical examination of an individual when, in the medical reviewer's professional judgment, such an examination would assist in assessing the individual's medical condition.

x. As part of the review, and where applicable, the medical reviewer shall consider and accept into the record evidence concerning whether less restrictive alternatives would adequately serve to protect public health.

xi. The medical review shall be conducted by telephone, audio or video conference, or through other means that the medical reviewer determines in his/her discretion are practicable for allowing the individual under

quarantine, isolation, or conditional release to participate in the medical review.

xii. At the conclusion of the review, the medical reviewer shall, based upon his or her review of the facts and other evidence made available during the medical review, issue a written report to the Director (excluding the CDC official who issued the quarantine, isolation, or conditional release order) concerning whether, in the medical reviewer's professional judgment, the Federal quarantine, isolation, or conditional release should be rescinded, continued, or modified. The written report shall include a determination regarding whether less restrictive alternatives would adequately serve to protect public health. The written report shall be served on the individual and the individual's authorized advocate or representatives.

xiii. The Director (excluding the CDC official who issued the quarantine, isolation, or conditional release order) shall, as soon as practicable, review the written report and any objections that may be submitted by the individual or the individual's authorized advocate or representatives that contest the findings and recommendation contained in the medical reviewer's written report. Upon conclusion of the review, the Director (excluding the CDC official who issued the quarantine, isolation, or conditional release order) shall promptly issue a written Federal order directing that the quarantine, isolation, or conditional release be continued, modified, or rescinded. In the event that the Director (excluding the CDC official who issued the quarantine, isolation, or

conditional release order) continues or modifies the Federal quarantine, isolation, or conditional release, the Director's written order shall include a statement that the individual may request that the Director rescind the Federal quarantine, isolation, or conditional release, but based only on a showing of significant, new or changed facts or medical evidence that raise a genuine issue as to whether the individual should continue to be subject to Federal quarantine, isolation, or conditional release. The written Federal order shall be promptly served on the individual and the individual's authorized advocate or representatives, except that the Federal order may be served by publication or by posting in a conspicuous location if applicable to a group of individuals and individual service would be impracticable.

xiv. The Director's written order shall not constitute final agency action until it has been served on the individual and the individual's authorized advocate or representatives, or alternatively, if applicable to a group of individuals and individual service would be impracticable, it is published or posted.

xv. The Director (excluding the CDC official who issued the quarantine, isolation, or conditional release order) may order the consolidation of one or more medical reviews if the number of individuals or other factors makes the holding of individual medical reviews impracticable.

xvi. The Director may issue additional instructions as may be necessary or desirable governing the conduct of medical reviews.

xvii. The Director shall arrange for translation or interpretation services as needed for purposes of this section.

xviii. [82 FR 6971, Jan. 19, 2017]

n. § 70.17 Administrative records relating to Federal quarantine, isolation, or conditional release.

i. The administrative record of an individual under Federal quarantine, isolation, or conditional release shall, where applicable, consist of the following:

1. The Federal order authorizing quarantine, isolation, or conditional release, including any subsequent Federal orders continuing or modifying the quarantine, isolation or conditional release;
2. Records of any available medical, laboratory, or other epidemiologic information that are in the agency's possession and that were considered in issuing the Federal quarantine, isolation, or conditional release order, or any subsequent Federal orders;
3. Records submitted by the individual under quarantine, isolation, or conditional release, or by an authorized advocate or representatives, as part of a request for rescission of the Federal quarantine, isolation, or conditional release or as part of a medical review;
4. The written findings and report of the medical reviewer, including any transcripts of the medical review and any written objections submitted by the individual under Federal quarantine, isolation, or

conditional release, or by any authorized advocate or representatives;

ii. An individual subject to a Federal public health order shall upon request be served with a copy of his or her own administrative record in its entirety.

iii. [82 FR 6971, Jan. 19, 2017]

o. § 70.18 Penalties.

i. Persons in violation of this part are subject to a fine of no more than $100,000 if the violation does not result in a death or one year in jail, or both, or a fine of no more than $250,000 if the violation results in a death or one year in jail, or both, or as otherwise provided by law.

ii. Violations by organizations are subject to a fine of no more than $200,000 per event if the violation does not result in a death or $500,000 per event if the violation results in a death or as otherwise provided by law.

iii. [82 FR 6971, Jan. 19, 2017]

II. United States Federal Laws and Regulations - 42 U.S.C. Part G §264. Regulations to control communicable diseases

a. The United States Code is a consolidation and codification by subject matter of the general and permanent laws of the United States. Sections 264-272 of the following portion of the code apply: Title 42 – The Public Health and Welfare, Chapter 6A – Public Health Service, Subchapter II – General Powers and Duties, Part G – Quarantine and Inspection. Links are provided by the Government Printing Office.

b. Apprehension, detention, or conditional release of individuals

    i. Regulations prescribed under this section shall not provide for the apprehension, detention, or conditional release of individuals except for the purpose of preventing the introduction, transmission, or spread of such communicable diseases as may be specified from time to time in Executive orders of the President upon the recommendation of the Secretary, in consultation with the Surgeon General.

c. Apprehension and examination of persons reasonably believed to be infected

    i. Regulations prescribed under this section may provide for the apprehension and examination of any individual reasonably believed to be infected with a communicable disease in a qualifying stage and (A) to be moving or about to move from a State to another State; or (B) to be a probable source of infection to individuals who, while infected with such disease in a qualifying stage, will be moving from a State to another State. Such regulations may provide that if upon examination any such individual is found to be infected, he may be detained for such time and in such manner as may be reasonably necessary. For purposes of this subsection, the term "State" includes, in addition to the several States, only the District of Columbia."

d. For purposes of this subsection, the term "qualifying stage", with respect to a communicable disease, means that such disease— (A) is in a communicable stage; or (B) is in a precommunicable stage, if the disease would be likely to cause a public health emergency if transmitted to other individuals.

e. EVALUATION OF PUBLIC HEALTH AUTHORITIES

i. Pub. L. 110–392, title I, §121, Oct. 13, 2008, 122 Stat. 4200, provided that: "(a) In General.—Not later than 180 days after the date of enactment of the Comprehensive Tuberculosis Elimination Act of 2008 [Oct. 13, 2008], the Secretary of Health and Human Services shall prepare and submit to the appropriate committees of Congress a report that evaluates and provides recommendations on changes needed to Federal and State public health authorities to address current disease containment challenges such as isolation and quarantine.

ii. Contents of Evaluation.

1. The report described in subsection (a) shall include— "(1) an evaluation of the effectiveness of current policies to detain patients with active tuberculosis; "(2) an evaluation of whether Federal laws should be strengthened to expressly address the movement of individuals with active tuberculosis; and "(3) specific legislative recommendations for changes to Federal laws, if any.

2. "(c) Update of Quarantine Regulations.—Not later than 240 days after the date of enactment of this Act [Oct. 13, 2008], the Secretary of Health and Human Services shall promulgate regulations to update the current interstate and foreign quarantine regulations found in parts 70 and 71 of title 42, Code of Federal Regulations."

f. Ex. Ord. No. 13295. Revised List of Quarantinable Communicable Diseases

i. Ex. Ord. No. 13295, Apr. 4, 2003, 68 F.R. 17255, as amended by Ex. Ord. No. 13375, §1, Apr. 1, 2005, 70 F.R. 17299, provided: By the

authority vested in me as President by the Constitution and the laws of the United States of America, including section 361(b) of the Public Health Service Act (42 U.S.C. 264(b)), it is hereby ordered as follows:

1. Section 1. Based upon the recommendation of the Secretary of Health and Human Services (the "Secretary"), in consultation with the Surgeon General, and for the purpose of specifying certain communicable diseases for regulations providing for the apprehension, detention, or conditional release of individuals to prevent the introduction, transmission, or spread of suspected communicable diseases, the following communicable diseases are hereby specified pursuant to section 361(b) of the Public Health Service Act:
    a. Cholera; Diphtheria; infectious Tuberculosis; Plague; Smallpox; Yellow Fever; and Viral Hemorrhagic Fevers (Lassa, Marburg, Ebola, Crimean-Congo, South American, and others not yet isolated or named).
    b. Severe Acute Respiratory Syndrome (SARS), which is a disease associated with fever and signs and symptoms of pneumonia or other respiratory illness, is transmitted from person to person predominantly by the aerosolized or droplet route, and, if spread in the population, would have severe public health consequences.
    c. Influenza caused by novel or reemergent influenza viruses that are causing, or have the potential to cause, a pandemic.

ii. Sec. 2. The Secretary, in the Secretary's discretion, shall determine whether a particular condition constitutes a communicable disease of the type specified in section 1 of this order.

iii. Sec. 3. The functions of the President under sections 362 and 364(a) of the Public Health Service Act (42 U.S.C. 265 and 267(a)) are assigned to the Secretary.

iv. Sec. 4. This order is not intended to, and does not, create any right or benefit enforceable at law or equity by any party against the United States, its departments, agencies, entities, officers, employees or agents, or any other person.

v. Sec. 5. Executive Order 12452 of December 22, 1983, is hereby revoked.

g. §271. Penalties for violation of quarantine laws

i. Penalties for persons violating quarantine laws

1. Any person who violates any regulation prescribed under sections 264 to 266 of this title, or any provision of section 269 of this title or any regulation prescribed thereunder, or who enters or departs from the limits of any quarantine station, ground, or anchorage in disregard of quarantine rules and regulations or without permission of the quarantine officer in charge, shall be punished by a fine of not more than $1,000 or by imprisonment for not more than one year, or both.

III. Recent Updates

a. Interim Final Rule for Control of Communicable Diseases: Foreign Quarantine

i. On February 6, 2020, the Department of Health and Human Services (HHS) and CDC issued an Interim Final Rule to amend its Foreign Quarantine regulations, to enable CDC to require airlines to collect, and provide to CDC, certain data regarding passengers and crew arriving from foreign countries, for the purposes of health education, treatment, prophylaxis, or other appropriate public health interventions, including travel restrictions. This Interim Final Rule was effective on February 7, 2020, and written comments were invited for submission before March 13, 2020. The interim final rule is published on the Office of the Federal Register's website.

b. Final Rule for Control of Communicable Diseases: Interstate and Foreign

i. On January 19, 2017, HHS and CDC published the Final Rule titled Final Rule for Control of Communicable Diseases: Interstate and Foreign. This Final Rule enhances HHS/CDC's ability to prevent the introduction, transmission, and spread of communicable diseases into the United States and interstate by clarifying and providing greater transparency regarding its response capabilities and practices. The Final Rule is published on the Office of the Federal Register's website. This regulation became effective on March 21, 2017.

c. Federal Register Notice: Criteria for Recommending Federal Travel Restrictions for Public Health Purposes, Including for Viral Hemorrhagic Fevers

i. On March 27, 2015, HHS and CDC published a notice in the Federal Register titled Criteria for Recommending Federal Travel Restrictions for Public Health Purposes, Including for Viral Hemorrhagic Fevers.

This Notice was posted to describe the tools the federal government has to ensure that people with serious contagious diseases that pose a public health threat do not board commercial flights into, within, or out of the United States, or enter into the United States without a public health evaluation. It also lists the criteria that CDC uses in deciding whether to recommend using these tools.

IV. Executive Orders

a. Executive Orders specify the list of diseases for which federal quarantine is authorized, which is required by the Public Health Service Act. On recommendation of the HHS Secretary, the President may amend this list whenever necessary to add new communicable diseases, including emerging diseases that are a threat to public health. The most recent Executive Order, issued September 21, 2021, added measles to the list of quarantinable communicable diseases.

b. By Executive Order of the President, federal isolation and quarantine are authorized for these communicable diseases:

   i. Cholera
   ii. Diphtheria
   iii. Infectious tuberculosis
   iv. Plague
   v. Smallpox
   vi. Yellow fever
   vii. Viral hemorrhagic fevers
   viii. Severe acute respiratory syndromes

ix. Influenza caused by new or reemergent flu viruses that are causing, or have the potential to cause, a pandemic

x. Measles

STATE REFERENCES

I. National Conference of State Legislatures (NCSL) & State of Missouri Definitions

a. According to the National Conference of State Legislatures, quarantine and isolation are defined as:

i. Quarantine: Compulsory separation, including restriction of movement, of people who potentially have been exposed to a contagious disease, until it can be determined whether they have become sick or no longer pose a risk to others. This determination could be made, for example, based on the time elapsed from their potential exposure.

ii. Isolation: Separation of people known or suspected (via signs, symptoms or laboratory criteria) to be infected with a contagious disease from those who are not sick to prevent them from transmitting the disease to others.

b. Relevant State of Missouri Definitions Relating to Communicable, Environmental and Occupational Diseases

i. Communicable disease is an illness due to an infectious agent or its toxic products and transmitted, directly or indirectly, to a susceptible host from an infected person, animal or arthropod, or through the agency of an intermediate host or a vector, or through the inanimate environment.

ii. Contact is a person or animal that has been in association with an infected person or animal and through that association has had the opportunity to acquire the infection.

iii. Exposure is defined as contact with, absorption, ingestion or inhalation of chemical, biologic, radiologic, or other physical agents by a human that results in biochemical, physiological or histological changes.

iv. Isolation is the separation for the period of communicability of infected individuals and animals from other individuals and animals, in places and under conditions as will prevent the direct or indirect transmission of the infectious agent from infected individuals or animals to other individuals or animals who are susceptible or who may spread the agent to others.

v. Quarantine is a restriction of movement of persons or animals that have been exposed to a communicable disease, but have not yet developed disease. The period of quarantine will not be longer than the entire incubation period of the disease. The purpose of quarantine is to prevent effective contact with the general population.

1. (A) Complete quarantine is a limitation of freedom of movement of persons or animals exposed to a reportable disease, for a period of time not longer than the entire incubation period of the disease, in order to prevent effective contact with the general population.
2. (B) Modified quarantine is a selective, partial limitation of freedom of movement of persons or animals determined on the basis of differences in susceptibility or danger of disease transmission.

Modified quarantine is designed to meet particular situations and includes, but is not limited to, the exclusion of children from school, the closure of schools and places of public or private assembly and the prohibition or restriction of those exposed to a communicable disease from engaging in a particular occupation.

vi. Local health authority is the city or county health officer, director of an organized health department or of a local board of health within a given jurisdiction. In those counties where a local health authority does not exist, the health officer or administrator of the Department of Health and Senior Services district in which the county is located shall serve as a local health authority.

vii. Case, as distinct from a carrier, is a person in whose tissues the etiologic agent of a communicable disease is present and which usually produces signs or symptoms of disease. Evidence of the presence of a communicable disease also may be revealed by routine laboratory findings.

viii. Carrier is a person who harbors a specific infectious agent in the absence of discernible clinical disease and serves as a potential source or reservoir of infection for man.

ix. Immediately reportable diseases are those diseases or findings listed in 19 CSR 20-20.020(1)(A)–(C) and shall be reported at once, without delay and with a sense of urgency by means of rapid communication to the Missouri Department of Health and Senior Services or to the local public health agency, regardless of the day or hour.

x. Local public health agency is a legally constituted body provided by a city, county or group of counties to protect the public health of the city, county or group of counties.

xi. Period of communicability is the period of time during which an etiologic agent may be transferred, directly or indirectly, from an infected person to another person or from an infected animal to a person.

xii. Person is any individual, partnership, corporation, association, institution, city, county, other political subdivision authority, state agency or institution or federal agency or institution.

II. State Quarantine and Isolation Statutes

a. The following section lists the State Quarantine and Isolation Statutes within Missouri, and each state that borders Missouri, including Arkansas, Iowa, Kansas, Kentucky, Illinois, Tennessee, Oklahoma, and Nebraska:

Missouri	**Mo. 19 CSR 20-20.050 (2008)**	Authority. The local health authority, the director of the Department of Health or the director's designated representative shall require isolation of a patient or animal with a communicable disease, quarantine of contacts, concurrent and terminal disinfection, or modified forms of these procedures necessary for the protection of the public health.
	Mo. Rev. Stat. § 192.320	Penalties. Any person or persons who shall leave any isolation hospital or quarantined house or place without the consent of the health officer having jurisdiction, or who evades or breaks quarantine or knowingly conceals a case of contagious, infectious or communicable disease, or who removes, destroys, obstructs from view or tears down any quarantine card, cloth or notice posted by the attending physician or by the health officer, or by direction of a proper health officer, shall be deemed guilty of a class A misdemeanor.

Arkansas	**Ark. Stat. Ann. §§ 20-7-109 (1997)** **Ark. Stat. Ann. §§ 14-262-101 to 109 (2010)**	Authority. The director of the Department of Health has control over all quarantine measures. The state Health Board establishes rules and regulations regarding quarantine and isolation. County or district health departments have the power and duty to establish and enforce quarantine or isolation when it is necessary for public health. Cities can create health boards and appoint a health officer, with jurisdiction five miles beyond city limits in the event of a quarantine for an epidemic. Both county and city health authorities must assist the state Department of Health and the Health Board. Only the state director can implement a quarantine on movement between jurisdictions.
	Ark. Stat. Ann. Code § 20-15-710 (1963)	Penalties. For those under mandated treatment for tuberculosis, disorderly conduct can be punished with confinement up to six months and those who leave or attempt to leave without being discharged are guilty of a misdemeanor, punishable by confinement of six to12 months.
	Ark. Stat. Ann. § 20-15-703 to 704 (1975)	Police Power and Limitations. If a health officer has reasonable grounds to suspect an individual has an active or communicable form of tuberculosis who is not willing to undergo treatment, they may detain the individual for the necessary testing and establish suitable isolation. If suitable local isolation is unavailable, they can petition the court to move the individual to an appropriate state facility.
Iowa	**Iowa Code § 136.3**	Authority. The state board of health shall provide a forum for the development of public health policy in the state of Iowa and shall have the following powers and duties: Prevention of epidemics and the spread of disease, including communicable and infectious diseases such as zoonotic diseases, quarantine and isolation, sexually transmitted diseases, and antitoxins and vaccines.
	Iowa Code § 139A.25	Penalties. Unless otherwise provided in this chapter, a person who knowingly violates any provision of this chapter, or of the rules of the department or a local board, or any lawful order, written or oral, of the department or board, or of their officers or authorized agents, is guilty of a simple misdemeanor.
	Iowa Code § 139A.4; 199A.5; 139A.13	Police Power & Limitations: Area quarantine or isolation must be imposed by the least restrictive means necessary to prevent the spread of disease. A person subject to forced quarantine or isolation may employ, at the person's own expense, a health care professional of the person's choice.
Kansas	**Kan. Stat. Ann. § 65-119, 126**	Authority. Any county or joint board of health or local health officer having knowledge of any infectious or contagious disease, or of a death from such disease, within their jurisdiction, shall immediately exercise and maintain a supervision over such case or cases during their continuance, seeing that all such cases are properly cared for and that the provisions of this act as to isolation, restriction of communication, quarantine and disinfection are duly enforced.

	Kan. Stat. Ann. § 65-129	Penalties. Anyone who knowingly conceals a contagious disease or breaks quarantine or isolation is guilty of a class C misdemeanor.
	Kan. Stat. Ann. § 65-129	Police Power & Limitations. An individual or group of individuals isolated or quarantined under this section may request a hearing in district court contesting the isolation or quarantine, as provided in article 15 of chapter 60 of the Kansas Statutes Annotated. The court shall grant the request for relief unless the court determines that the isolation or quarantine order is necessary and reasonable to prevent or reduce the spread of the disease or outbreak believed to have been caused by the exposure to an infectious or contagious disease.
Kentucky	**Ky. Rev. Stat. § 212.370**	Authority. The [city-county] board, throughout said county, including all municipalities therein, shall, except as otherwise provided by law, have exclusive control and operation…of all matters relating to institutions safeguarding the public health…, including education of the public regarding such conditions, and the adoption of remedial measures, and the enforcement of all laws and regulations affecting public health…laws and ordinances regulating sanitation, milk inspection, meat inspection, livestock inspection, wells, drinking water and fountains, vaults, vaccination and immunization, quarantine, and the maintenance of laboratories and clinics necessary for the promotion of public health.
Nebraska	**Neb. Rev. Stat. § 71-501**	Authority. The county boards of the counties shall make and enforce regulations to prevent the introduction and spread of contagious, infectious and malignant diseases in their respective counties. To that end a board of health shall be created, consisting of three members. The sheriff shall be chairperson and quarantine officer.
	Neb. Rev. Stat. § 81-601	The Department of Health and Human Services Regulation and Licensure shall have general supervision and control over matters relating to public health and sanitation and shall provide for examination as provided in section 81-602 and have supervision over all matters of quarantine and quarantine regulations.

	Neb. Rev. Stat. § 71-506	Penalties. Any person violating any of the provisions of sections 71-501 to 71-505, 71-507 to 71-513, or 71-514.01 to 71-514.05 or section 71-531 shall be guilty of a Class V misdemeanor for each offense, except that any person who willfully or maliciously discloses, except as provided by law, the content of any reports, notifications, or resulting investigations made under section 71-502 and subject to the confidentiality provisions of section 71-503.01 shall be guilty of a Class III misdemeanor. The Attorney General or the county attorney may, in accordance with the laws of the state governing injunctions and other process, maintain an action in the name of the state against any person or any private or public entity for violating sections 71-501 to 71-505, 71-507 to 71-513, or 71-514.01 to 71-514.05 or section 71-531 and the rules and regulations adopted and promulgated under such sections.
Oklahoma	**Okla. Stat. Title 63 § 1-502(a)**	Authority. The State Board of Health shall have authority to adopt such rules and regulations, not inconsistent with law, as it deems necessary to aid in the prevention and control of communicable disease.
	Okla. Stat. Title 21 § 48-1195	Penalties. Every person who having been lawfully ordered by any health officer to be detained in quarantine and not having been discharged leaves the quarantine grounds or willfully violates any quarantine law or regulation, is guilty of a misdemeanor.
	Okla. Stat. Title 63 § 1-504(c)	Police Power & Limitations. District courts shall be authorized to grant injunctive relief, including temporary injunctions and temporary restraining orders, to compel compliance with a quarantine or isolation order issued by a local health officer pursuant to this section.
Tennessee	**Tenn. Code Ann. § 68-1-201; Tenn. Code Ann. § 68-1-204**	Authority. The commissioner of health, appointed by the governor, has the power to declare quarantine whenever he or she determines the welfare of the public requires it. The commissioner has the authority to prescribe rules and regulations deemed proper for the prevention of epidemic diseases in the state. In the event of an emergency or disaster that involves the outbreaks of disease that present a danger of an epidemic, the commissioner shall make appropriate recommendations to the governor for actions under this title and title 58, chapter 2, to allocate all available heath care resources in the affected areas for immediate and long-term health care needs of the affected populations.
	Tenn. Code Ann. § 68-2-609	Authority (County). The county health officer is empowered to order the quarantine of any place or person if the county health officer finds that such control is necessary to protect the public health from an epidemic.
	Tenn. Code Ann. § 68-9-201 et. seq.	Authority. The commissioner and all state, district, county or municipal health officers are authorized, directed and empowered to implement control measures that are reasonable and necessary to prevent the introduction, transmission and spread of tuberculosis in this state.

	Tenn. Code Ann. § 68-1-203	Penalties. Any person who willfully disregards or evades quarantine, or violates any rule or regulation made in attempting to prevent the spread of any epidemic disease, commits a Class B misdemeanor.

COUNTY REFERENCES

I. The following section lists the two other health departments within Jackson County, and their respective quarantine and isolation policies, or guidelines if applicable. These health departments include Independence Health Department and Kansas City Health Department.

a. Independence

i. Within the Independence City Code of Ordinances:

1. SEC. 11.01.004. MEASURES FOR THE CONTROL OF COMMUNICABLE, ENVIRONMENTAL AND OCCUPATIONAL DISEASE.
2. Upon receiving a report of a communicable, environmental or occupational disease, the Health Director, or any designate, shall have the authority to:
    a. 1. Inspect any premises they have reasonable grounds to believe are in a condition conducive to the spread of any reportable communicable disease;
    b. 2. Confer with the physician, laboratory or person making the report;
    c. 3. Collect for laboratory analysis any samples or specimens that may be necessary to confirm the diagnosis or presence of the disease or biological, chemical or physical agents and to determine the source of the infection, epidemic or exposure;

d. 4. Make complete epidemiological, environmental or occupational industrial hygiene investigation and record of the findings in a communicable disease or exposure report;

e. 5. Establish and maintain quarantine, isolation or other measures as required;

f. 6. Provide the opportunity to be immunized to all contacts of persons suffering from those diseases for which there is a reliable and approved means of immunization;

g. 7. Establish appropriate control measures which may include isolation, quarantine, disinfection, immunization, closure of establishment and other measurers considered appropriate by medical experts for the protection of public health;

h. 8. Establish, whenever a case of unrecognized illness is reported or otherwise brought to the attention of the Health Department and investigation presents symptoms of a communicable disease, but sufficient time has not elapsed to render a positive diagnosis, the control measures applicable in actual cases of the suspected communicable disease, until a positive diagnosis can be established. If a disease proves to be non-communicable, the temporary control measures shall be terminated at once;

i. 9. Assume direct responsibility to make necessary investigation and immediately institute appropriate control measures necessary for the protection of the public health in occurrences of outbreaks or

unusual clusters of illness involving more than one (1) county or a general regional area; and

j. 10. Investigate the disease within the local jurisdiction with assistance from the director of the Missouri State Department of Health, or any designated representative, when any outbreak or unusual occurrence of a reportable disease is identified through reports.

3. SEC. 11.01.005. PENALTY.

a. Any person violating the provisions of this Article, or who shall interfere or obstruct authorized representatives of the Health Department in the performance of their duties under this Article, shall, upon conviction thereof, be subject to a fine of not more than Five Hundred Dollars ($500.00), six months in jail, or both. Each day such violation continues shall be considered a separate offense.

b. Kansas City

i. Within the Kansas City, Missouri Code of Ordinances Article II, Sec. 34-72:

1. Sec. 34-57. - Quarantine and isolation.

a. The director of health is authorized to use isolation and/or quarantine measures for the control, containment or eradication of communicable diseases or disease vectors. These measures may be used on persons, animals, public or private property, or areas of land.

i. (1)Persons who have been exposed to communicable diseases deemed reportable in section 34-53, or who are

carriers of infections, or where there is sufficient evidence to cause the director to believe that they may be carriers of infection and represent a health threat to others, may be placed under isolation or quarantine restrictions. These restrictions may include removal to another public or private location, as may be deemed necessary until the nature of the disease has been determined or the communicability of the disease has ceased.

ii. (2) No physician, administrator or any other person may remove a person from isolation or quarantine or modify the restrictions of the isolation or quarantine without expressed written or verbal authorization from the director.

iii. (3) Persons infected with or suspected of being infected with tuberculosis shall be isolated or quarantined at a hospital, if deemed necessary.

iv. (4) The removal or transportation within or from the city, of persons subject to isolation or quarantine shall be done in compliance with the conditions, procedures and requirements established by the director for that person.

v. (5) When isolation or quarantine restrictions apply to any public or private property, or area of land, the director may placard the public or private property, or area of land with conspicuous letters stating the name of the disease. The director is authorized to cause such public or private

property, or area of land to be vacated by all persons and to prohibit unauthorized persons from entering in or out, except under such rules and regulations as he may prescribe. The isolation or quarantine restrictions shall continue and remain in effect until the director shall order them removed.

vi. (6) The director may prohibit the removal or other distribution of any food or property from any public or private property, or area of land under isolation or quarantine, and, if applicable, may direct the method of disinfection or destruction of such food or property.

vii. (7) It shall be unlawful for any person to refuse to allow the director to place a placard on his/her property or property under his control or to endeavor to prevent the placing of the placard or to take down or remove such placard.

viii. (8) It shall be unlawful for any person to violate any of the provisions of this section.

ix. (Ord. No. 170708, § 1, 9-28-17)

2. Sec. 34-72. - Penalty for violation of article II.

a. (a)Whenever in any section of this article II the doing of any act is required or is prohibited or is declared to be unlawful or an ordinance violation, any person who shall be convicted of a violation of any such provision of this codification or of any such ordinance shall, for each offense, be fined not less than $100.00 and

not more than $1,000.00, or be punished by imprisonment, not to exceed six months, or be punished by both fine and imprisonment.

b. (b) In addition to any penalties issued pursuant to this section, the director is authorized to report repeated patterns of failure to report under this article to any appropriate licensing boards.

c. (Ord. No. 170708, § 1, 9-28-17)

II. The following section lists the neighboring counties of Jackson within Missouri, and their respective quarantine and isolation policies, or guidelines if applicable. These counties include Clay, Ray, Lafayette, Johnson, and Cass.

a. Clay County

i. Via the Clay County Code of Ordinances:

1. Chapter 205 - ISOLATION AND QUARANTINE

a. Sec. 205.01. - Purpose.

i. To assure that timely and effective declarations of true emergencies relative to the health and well-being of the residents of the county are enacted and to assure that measures are taken to prevent and contain secondary transmission of diseases and/or conditions. (Ord. of 8-30-17)

b. Sec. 205.02. - Definitions.

i. Isolation is the separation for the period of communicability of infected individuals and animals from other individuals and animals, in places and under conditions as will prevent the direct or indirect transmission of the infectious agent from infected individuals or animals to other individuals or

animals who are susceptible or who may spread the agent to others.

ii. Quarantine is a period of detention for persons or animals that may have been exposed to a communicable disease. The purpose of quarantine is to prevent effective contact with the general population.

1. (1) Complete quarantine is a limitation of freedom of movement of persons or animals exposed to a communicable disease, generally for a period of time not longer than the longest period of communicability of the disease, in order to prevent effective contact with the general population.
2. (2) Modified quarantine is a selective, partial limitation of freedom of movement of persons or animals determined on the basis of differences in susceptibility or danger of disease transmission. Modified quarantine is designed to meet particular situations and includes, but is not limited to, the exclusion of children from school, the closure of schools and places of public or private assembly and the prohibition or restriction of those exposed to a communicable disease from engaging in a particular occupation.

iii. Embargo, for the purpose of this chapter, is the detention of food, medicine, supplies, equipment or other materials until such time as a determination can be made as to whether the products or items require condemnation and destruction in the interest of safeguarding public health, whether the items are safe or may be salvaged, decontaminated or disinfected. (Ord. of 8-30-17)

c. Sec. 205.03. - Declaration of public health emergency.

i. The director of public health for the county public center or the director's designated representative, shall have the power to declare a public health emergency and establish such isolation, quarantine and/or embargo as may be deemed necessary to protect the health and well-being of the residents and citizens of the county against infectious, contagious, communicable or dangerous diseases and conditions. Those diseases include but are not limited to those listed in the current 19CSR 20-20.010 (36) and (37) and 19CSR 20-20.040, 19CSR 20-20.050, and 19CSR 20-20.060 and Chapter 196 R.S.Mo. (Ord. of 8-30-17)

d. Sec. 205.04. - Notice and assistance.

i. If there is an imminent public health danger requiring the establishment of isolation, quarantine or embargo, the county public health center director of public health or the director's designated representative shall immediately notify

the county emergency management director who shall then assist with notifying and obtaining the assistance of law enforcement and other necessary personnel, as further set forth in the county emergency preparedness plan. The director shall work in conjunction with the county emergency management director, and such local law enforcement, the State Health Department and laboratory, medical personnel and CDCP, as he deems necessary. (Ord. of 8-30-17)

e. Sec. 205.05. - Authority of director.

i. The county public health center director of public health shall have authority within the county to do one or more of the following:

1. (1) Identify persons (and/or animals) subject to quarantine and/or isolation, whether by name, by group, by location or by any other reasonable means;
2. (2) Determine the geographic boundaries of the quarantine or isolation, and, in connection therewith, post signs, cause doors to be locked or guarded and/or roadways to be blocked;
3. (3) Establish precautions to be taken by emergency personnel and any other persons entering or leaving the quarantine or isolation area;

4. (4) Assist in making arrangements for food, shelter and medical care for any person subject to quarantine or isolation;
5. (5) Establish zones within a quarantine area depending upon likelihood of exposure.
6. (6) Authorize the movement and method of transportation of persons subject to quarantine or isolation.
7. (7) Determine and establish the length of time which the quarantine or isolation is imposed;
8. (8) Close any school or place of public or private assembly;
9. (9) Inspect any premise where reasonable grounds to believe conditions conducive to the spread of any communicable disease exists;
10. (10) Confer with medical advisors, laboratories or others making report of such conditions;
11. (11) Collect specimens or samples for laboratory analysis necessary to determine the presence or absence of biological, chemical or physical contamination;
12. (12) Make a complete epidemiological, environmental or occupational industrial hygiene investigation and record the findings as indicated;

13. (13) Provide the opportunity for prophylactic measures to be provided to all epidemiologically linked contacts of persons suffering from the disease (if available);
14. (14) Establish other control measures necessary to prevent the spread of disease which may include disinfection or decontamination of a premise or environment;
15. (15) Order examinations necessary to determine presence of food borne, water-borne or vector-borne infection or disease;
16. (16) Exclude persons who are infected with a communicable disease from the production, preparation, manufacture, packaging, storage, sale, distribution or transportation of foods;
17. (17) Exclude food supplies known or suspected to transmit food borne infection from distribution and use, and order the destruction of embargoed foods and supplies pursuant to the provisions of Chapter 196 R.S.Mo. (Ord. of 8-30-17)

f. Sec. 205.06. - Penalty for violation of quarantine, isolation or embargo.

   i. Any quarantined or isolated person who leaves the boundary established, or who intentionally exposes or contacts another

person shall, upon conviction, be guilty of a Class A misdemeanor punishable by a fine of not more than $1,000.00, or imprisonment for not more than one year, or both. Each occasion is a separate offense.

ii. Any unauthorized person who enters or leaves an area of isolation of quarantine shall, upon conviction, be guilty of a Class A misdemeanor punishable by a fine of not more than $500.00, or imprisonment for not more than one year, or both. Each occasion is a separate offense.

iii. Any unauthorized person who moves or attempts to move any quarantined or embargoed animal or thing shall, upon conviction, be guilty of a Class A misdemeanor punishable by a fine of not more than $500.00, or imprisonment for not more than one year, or both. Each occasion is a separate offense.

iv. Right to petition for an injunction: In addition to the remedies and penalties set forth in this chapter, the director of the county public health center may petition the Circuit Court of Clay County to enjoin any violation of this chapter that constitutes a threat to the public health, safety or welfare. The remedies set forth herein are cumulative and not exclusive, and the county public health center may seek any legal or equitable remedy at its disposal, regardless of

whether it has exhausted any other remedy available to it under this chapter. (Ord. of 8-30-17)

g. Sec. 205.07. - Rights of affected persons.

    i. Any person subject to a quarantine or isolation shall have access to telephone, wireless communication and email communication, to the extent available. Any person subject to isolation or quarantine shall be entitled to petition the court for a declaration as to whether the imposition of this chapter upon him or her is reasonable under the circumstances, and to a hearing before a circuit court judge on an expedited basis. Said person may present evidence by telephone or other electronic means. (Ord. of 8-30-17)

h. Sec. 205.08. - Jurisdiction.

    i. This chapter shall apply to unincorporated Clay County, Missouri, and to incorporated cities in Clay County that have less than 75,000 population. This ordinance shall not apply to cities that have a population of 75,000 or over, which are maintaining an organized health department. (Ord. of 8-30-17)

i. Sec. 205.09. - Severability.

    i. If any portion of the ordinance upon which this chapter is derived is for any reason held invalid or unconstitutional by any court of competent jurisdiction, that portion shall be deemed a separate, distinct and independent provision and

that holding shall not affect the validity of the remaining portion of this chapter. (Ord. of 8-30-17)

j. Sec. 205.10. - Authority.

i. Chapters 192.010 et sec, 196.010 et seq, 205.010 et seq including 205.100 which provides "The county commission or commissions shall annually at their February meeting, appoint the director of the public health center as county health officer and such county health officer shall exercise all of the rights and perform all of the duties pertaining to that office as set forward under the health laws of the state and rules and regulations of the department of health and senior services." (For those laws—see Chapter 192.020 and 192.260 RSMo) (Ord. of 8-30-17) State Law reference— 19 CSR20-20.020, 19 CSR 20.20.010(36) and (37), 20-20.040, 050, .060.

b. Ray County

i. No official policy or guidelines were listed on the county website, or Ray County Health Department. Stay at home order was established on March 2, 2020, to combat the spread of COVID-19, and did not mention quarantine. No county code of ordinances information was found.

c. Lafayette County

i. No official policy listed through the county code of ordinances. The Lafayette County health website gives COVID-19 precautions, but no general communicable disease quarantine and isolation policies were found.

d. Johnson County

i. None listed in the County Code of Ordinances. Guidelines for COVID-19 quarantine were posted 12/09/2020:

1. https://johnsoncountyhealth.org/johnson-county-quarantine-guidelines-for-covid-19/

e. Cass County – Listed in Chapter 210 Quarantine Regulations of the Code of Ordinances:

i. Section 210.010 Generally. [Ord. No. 01-01 Part F, 5-29-2003; Ord. No. 06-06 Part C, 3-23-2006; Ord. No. 08-04 Part C, 6-13-2008]

1. A. Purpose. To assure that timely and effective declarations of true emergencies relative to the health and well-being of the residents of Cass County are enacted and to assure that all measures are taken to prevent and contain secondary transmission of diseases and/or conditions.
2. B. Definitions. As used in this Chapter, the following terms shall have these prescribed meanings:
    a. EMBARGO
        i. The detention of food, medicine, supplies, equipment or other materials until such time as a determination can be made as to whether the products or items require condemnation and destruction in the interest of safeguarding public health, whether the items are safe or may be salvaged, decontaminated or disinfected.
    b. ISOLATION

i. The separation for the period of communicability of infected individuals and animals from other individuals and animals in places and under conditions as will prevent the direct or indirect transmission of the infectious agent from infected individuals or animals to other individuals or animals who are susceptible or who may spread the agent to others. 19 CSR 20-20.010 (22)

c. QUARANTINE

i. A period of detention for persons or animals that may have been exposed to a reportable disease. The period of time will not be longer than the longest period of communicability of the disease. The purpose of quarantine is to prevent effective contact with the general population. 19 CSR 20-20.010 (31)

ii. 1. Complete quarantine is a limitation of freedom of movement of persons or animals exposed to a reportable disease, for a period of time not longer than the longest period of communicability of the disease, in order to prevent effective contact with the general population.

iii. 2. Modified quarantine is a selective, partial limitation of freedom of movement of persons or animals determined on the basis of differences in susceptibility or danger of disease transmission. Modified quarantine is designed to meet particular situations and includes, but is not limited to, the exclusion of children from school, the closure of schools

and places of public or private assembly and the prohibition or restriction of those exposed to a communicable disease from engaging in a particular occupation.

3. Section 210.020 Declaration of Public Health Emergency. [Ord. No. 01-01 Part F §I, 5-29-2003; Ord. No. 06-06 Part C No. I, 3-23-2006; Ord. No. 08-04 Part C §I, 6-13-2008]
    a. The Administrator of the Cass County Health Department or the Administrator's designated representative shall have the power to declare a public health emergency or crisis and establish such isolation, quarantine and/or embargo as may be deemed necessary to protect the health and well-being of the residents and citizens of Cass County against infectious, contagious, communicable, dangerous or unusual diseases and conditions. Those diseases include, but are not limited to, those listed in 19 CSR 20-20.010 (36) and (37) and 19 CSR 20-10.040, 19 CSR 20-20.050 and 19 CSR 20-20.060 and Chapter 196, RSMo.
4. Section 210.030 Notice and Assistance. [Ord. No. 01-01 Part F §II, 5-29-2003; Ord. No. 06-06 Part C No. II, 3-23-2006; Ord. No. 08-04 Part C §II, 6-13-2008]
    a. If there is an imminent public health danger requiring the establishment of isolation, quarantine or embargo, the Cass County Health Department Administrator or designee shall immediately notify the Cass County Commissioner's office and the Emergency Management Director who shall then assist with notifying and

obtaining the assistance of law enforcement and other necessary personnel as further set forth in the Cass County Emergency Operations Plan. The Administrator shall work in conjunction with the Cass County Emergency Management Director and such local law enforcement, the Missouri Department of Health and Senior Services and laboratory, medical personnel and Centers for Disease Control and Prevention as he/she deems necessary.

5. Section 210.040Authority of Director. [Ord. No. 01-01 Part F §III, 5-29-2003; Ord. No. 06-06 Part C No. III, 3-23-2006; Ord. No. 08-04 Part C §III, 6-13-2008]
    a. A. The Cass County Health Department Administrator shall have authority within Cass County borders to do one (1) or more of the following:
        i. 1. Identify persons subject to quarantine and/or isolation, whether by name, by group, by location or by any other reasonable means;
        ii. 2. Determine the geographic boundaries of the quarantine or isolation and, in connection therewith, post signs, cause doors to be locked or guarded and/or roadways to be blocked;
        iii. 3. Establish precautions to be taken by emergency personnel and any other persons entering or leaving the quarantine or isolation area;

iv. 4. Assist in making arrangements for food, shelter and medical care for any persons subject to quarantine or isolation;

v. 5. Establish zones within a quarantine area depending upon likelihood of exposure;

vi. 6. Authorize the movement and method of transportation of persons subject to quarantine or isolation;

vii. 7. Determine and establish the length of time for which the quarantine or isolation is imposed;

viii. 8. Close any school or place of public or private assembly;

ix. 9. Inspect any premises that he/she has reasonable grounds to believe are in a condition conducive to the spread of any communicable disease;

x. 10. Collect specimens or samples for laboratory analysis to confirm or rule out the presence of biological, chemical or physical agents and determine the source of the infection, epidemic or exposure;

xi. 11. Confer with medical advisors, laboratories or others making report of such conditions;

xii. 12. Make a complete epidemiological, environmental or occupational industrial hygiene investigation and record the findings as indicated;

xiii. 13. Provide the opportunity to immunize all contacts of persons suffering from the disease (if available);

xiv. 14. Establish other control measures including disinfecting or decontamination;

xv. 15. Order examinations necessary to determine presence of food-borne, water-borne or vector-borne infection or disease;

xvi. 16. Exclude persons who are infected with a communicable disease from the production, preparation, manufacture, packaging, storage, sale, distribution or transportation of foods;

xvii. 17. Exclude food supplies known or suspected to transmit food-borne infection from distribution and use and order the destruction of embargoed foods and supplies pursuant to the provisions of Chapter 196, RSMo.

6. Section 210.050 Penalty for Violation of Quarantine, Isolation or Embargo. [Ord. No. 01-01 Part F §IV, 5-29-2003; Ord. No. 06-06 Part C No. IV, 3-23-2006; Ord. No. 08-04 Part C §IV, 6-13-2008]

   a. A. Any quarantined or isolated person who leaves the boundary established, or who intentionally exposes or contacts another person shall, upon conviction, be guilty of a County offense punishable by a fine of not more than five hundred dollars ($500.00) or imprisonment for not more than ninety (90) days, or both. Each occasion is a separate offense.

   b. B. Any unauthorized person who enters or leaves an area of isolation or quarantine shall, upon conviction, be guilty of a County

offense punishable by a fine of not more than five hundred dollars ($500.00) or imprisonment for not more than ninety (90) days, or both. Each occasion is a separate offense.

c. C. Any unauthorized person who moves or attempts to move any quarantined or embargoed person or item shall, upon conviction, be guilty of a County offense punishable by a fine of not more than five hundred dollars ($500.00) or imprisonment for not more than ninety (90) days, or both. Each occasion is a separate offense.

7. Section 210.060Rights of Affected Persons. [Ord. No. 01-01 Part F §V, 5-29-2003; Ord. No. 06-06 Part C No. V, 3-23-2006; Ord. No. 08-04 Part C §V, 6-13-2008]

   a. Any person subject to a quarantine or isolation shall have access to telephone, wireless communication and e-mail communication to the extent available. Any person subject to isolation or quarantine shall be entitled to petition the court for a declaration as to whether the imposition of this Chapter upon him/her is reasonable under the circumstances and to a hearing before a Circuit Court Judge on an expedited basis. Said person may present evidence by telephone or other electronic means.

RECOMMENDATIONS

In light of the review of federal, state, and local quarantine and isolation regulations, the following recommendations are proposed to enhance Jackson County Public Health's (JCPH) policy development:

I. Strengthen Legal Compliance and Clarity

a. Ensure that JCPH's Quarantine and Isolation Policy is fully aligned with federal regulations under the Public Health Service Act (42 U.S.C. §264) and the Code of Federal Regulations (CFR). Clear articulation of the definitions, legal frameworks, and enforcement protocols for quarantine and isolation will enhance legal compliance and reduce ambiguities in policy enforcement.

II. Tailor State-Specific Guidelines

a. Incorporate Missouri's specific quarantine laws into JCPH's policies, particularly the mandates outlined in the Revised Statutes of Missouri (RSMo) 192.320. This will allow JCPH to establish consistent enforcement protocols, ensuring that local quarantine measures are aligned with state regulations, including the penalties for violations.

III. Leverage Executive Orders and Recent Updates

a. Regularly update JCPH policies to reflect the latest Executive Orders and public health regulations from the CDC, particularly concerning emerging infectious diseases. This is given the potential for new diseases to be added to the list of quarantinable communicable diseases. JCPH should establish a review mechanism for ensuring its quarantine and isolation policies reflect current public health directives.

IV. Integrate Technology for Public Health Supervision

a. Adopt digital and internet-based monitoring tools, as outlined in federal guidelines, to track individuals under quarantine or isolation. Utilizing electronic monitoring systems can enhance the effectiveness of public health supervision, enabling real-time data collection and remote monitoring of individuals exposed to communicable diseases.

V. Ensure Coordination with "Neighbors"

a. Given our five neighboring counties, it is critical to maintain communication and coordination with bordering health authorities. This communication could facilitate the smooth implementation of quarantine and isolation measures across county lines and ensure compliance with regional health guidelines.

VI. Enhance Public Awareness and Education

a. Implement public awareness campaigns to educate the community on the importance of quarantine and isolation during disease outbreaks. A public pushback when putting a quarantine and isolation ordinance could be seen post COVID-19 pandemic, in an era where public health has been scrutinized due to misinformation. An awareness campaign could increase compliance and aid in minimizing resistance during public health crises. Information on penalties for non-compliance should also be made clear to deter violations.

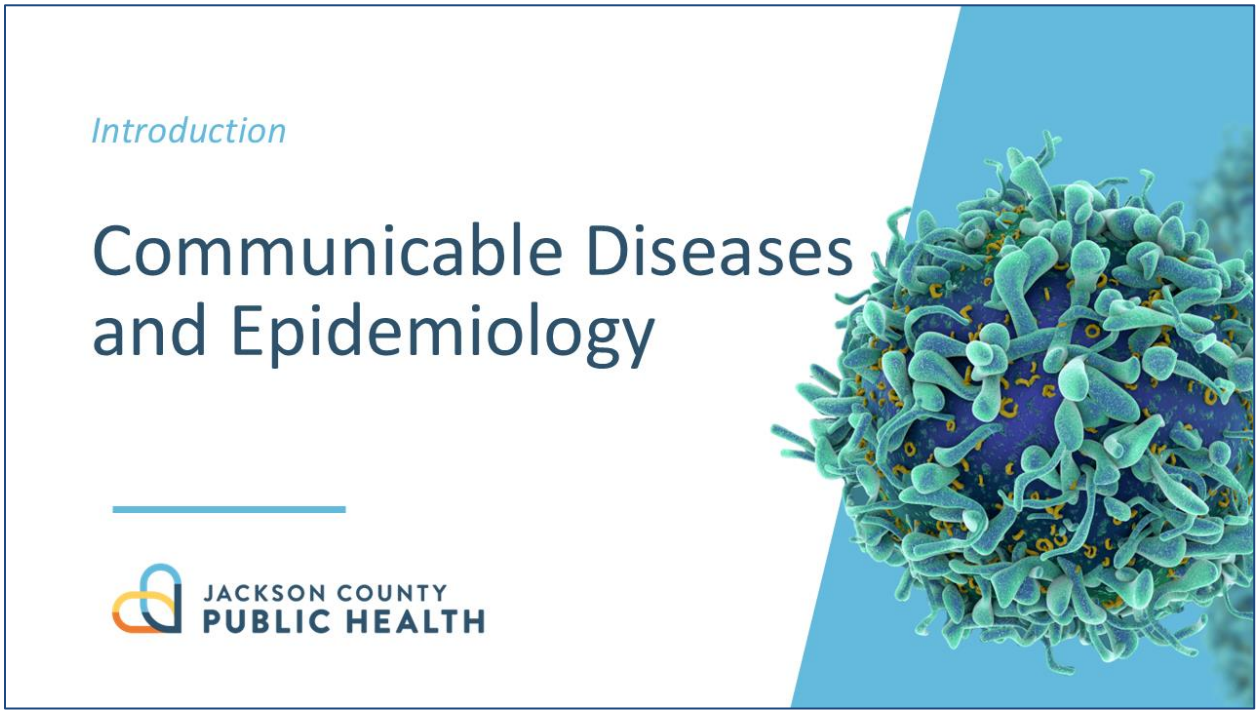
CONCLUSION

The Jackson County Public Health Quarantine and Isolation Policy will serve as a critical tool for managing communicable disease outbreaks. By grounding the policy in federal, state, and local regulations, JCPH can effectively enforce public health measures to protect the community. These recommendations have been carefully selected to help ensure that the policy remains legally compliant, responsive to emerging public health threats, and effective in preventing the spread of infectious diseases. By adopting a quarantine and isolation policy, JCPH will be better prepared to handle future public health emergencies, maintaining the safety and well-being of its citizens.

2.0 Professional Development Day Training and Activity

Appendix 2 provides the materials and resources developed for Jackson County Public Health's Professional Development Day training module on communicable disease investigation. This appendix includes training content designed to equip JCPH staff with the foundational knowledge and skills necessary for effective outbreak response. Training materials include a PowerPoint presentation covering essential public health topics, such as epidemiological principles, disease surveillance, and contact tracing techniques, as well as case investigation protocols for various infectious diseases. Additionally, an interactive case study activity allows participants to apply theoretical knowledge in a simulated outbreak scenario involving diseases such as Salmonella, Pertussis, and Legionella. These training materials are structured to provide practical insights, enhance outbreak preparedness, and promote interdisciplinary collaboration within JCPH.

2.1 PDD Training Presentation on Communicable Disease Investigation



COMMUNICABLE DISEASES AND EPIDEMIOLOGY

What are Communicable Diseases (CD)?

Illnesses caused by viruses or bacteria that people spread to one another through contact with contaminated surfaces, bodily fluids, blood products, insect bites, or through the air.

CD Examples:

- Influenza (Flu)
- Tuberculosis
- Pertussis (Whooping Cough)
- Salmonella
- Legionella (Legionnaires Disease)

COMMUNICABLE DISEASES AND EPIDEMIOLOGY

What is Epidemiology?

The study of the determinants, occurrence, and distribution of health and disease in a defined population.

Communicable Disease Team

- Disease investigation
- Disease surveillance
- Infection control
- Assess disease by collecting, analyzing, and evaluating data
- Provide education

GOAL

Reduce or manage the incidence of communicable diseases within Eastern Jackson County.

PUBLIC HEALTH SURVEILLANCE

Public Health Surveillance in JCPH CD Investigation

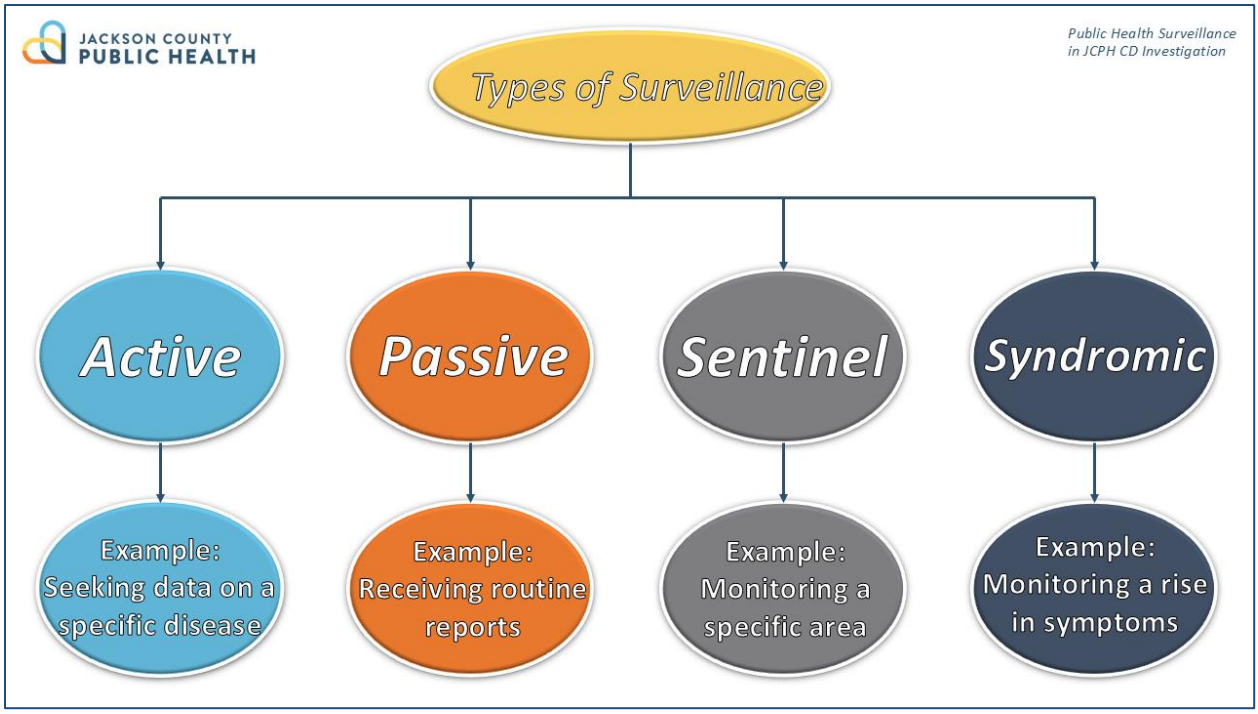
Goals of Surveillance Systems

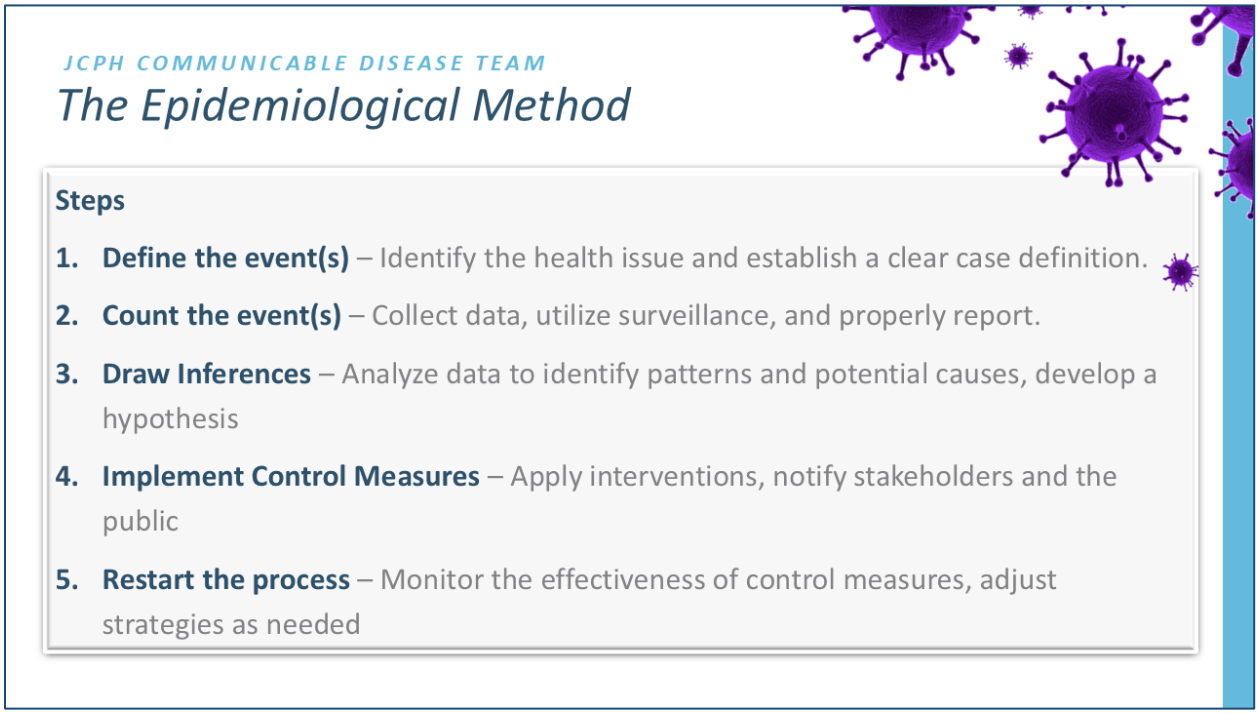
- Monitor disease trends.
- Detect outbreaks early.
- Identify at-risk populations.
- Guide public health interventions.
- Evaluate control measures.

Public Health Surveillance

SURVEILLANCE DEFINITION:

The systematic collection, analysis, interpretation, and dissemination of health data to improve public health


JACKSON COUNTY PUBLIC HEALTH
Public Health Surveillance in JCPH CD Investigation
Types of Surveillance
Active
Passive
Sentinel
Syndromic
Example: Seeking data on a specific disease
Example: Receiving routine reports
Example: Monitoring a specific area
Example: Monitoring a rise in symptoms


JCPH COMMUNICABLE DISEASE TEAM
The Epidemiological Method
Steps
1. Define the event(s) – Identify the health issue and establish a clear case definition.
2. Count the event(s) – Collect data, utilize surveillance, and properly report.
3. Draw Inferences – Analyze data to identify patterns and potential causes, develop a hypothesis
4. Implement Control Measures – Apply interventions, notify stakeholders and the public
5. Restart the process – Monitor the effectiveness of control measures, adjust strategies as needed

Understanding Disease Transmission

UNDERSTANDING DISEASE TRANSMISSION

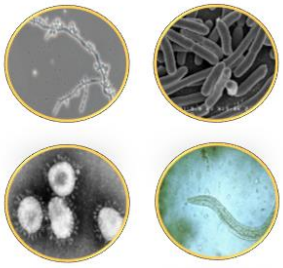
Disease Transmission Factors

Agent (What) - The microorganism causing the disease (bacteria, virus, parasite, fungus).

Host (Who) - The human or animal susceptible to the agent.

Environment (Where) - External factors that affect the agent and the opportunity for exposure.

Agent



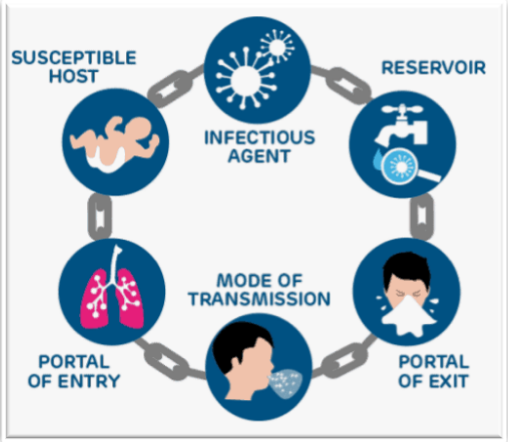
Host

Environment

UNDERSTANDING DISEASE TRANSMISSION

The Disease Transmission Process

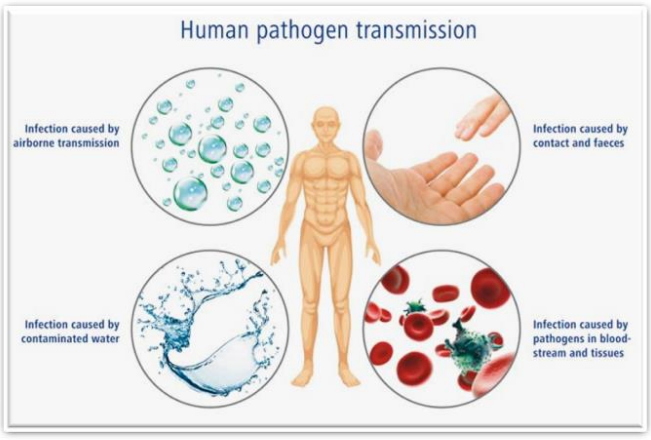
- **Infectious Agent:** The pathogen responsible for the disease.
- **Reservoir:** Where the agent normally lives and multiplies.
- **Portal of Exit:** The path by which the agent leaves the host.
- **Mode of Transmission:** How the agent is transferred to a new host.
- **Portal of Entry:** The path by which the agent enters a susceptible host.
- **Susceptible Host:** An individual who can become infected.



UNDERSTANDING DISEASE TRANSMISSION

Modes of Transmission

- **Modes of Transmission:** How a pathogen moves from reservoir to susceptible host
- **Direct Transmission:** Airborne, droplet, contact (e.g., skin), bite, needlestick, or other sharps injury.
- **Indirect Transmission:** Fomites – contaminated equipment or medication (multidose vials, single-dose vials), vectors (animals, insects), food, water.



Laboratory Diagnoses

LABORATORY DIAGNOSES

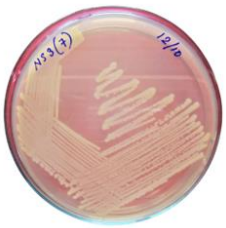
The Laboratory's Role in CD Investigation

Why is this important?

- **Confirming cases** to ensure an accurate diagnosis.
- **Identifying** the specific pathogen responsible for the disease.
- **Understanding** that lab results guide public health actions.

Diagnostic Methods:

- **Culture Techniques:** Growing organisms in controlled environments.
- **Polymerase Chain Reaction (PCR):** Amplifying DNA to detect pathogens.
- **Serology Tests:** Detecting antibodies or antigens in blood samples.



DATA COLLECTION AND MANAGEMENT

How We Utilize This Process in CD Investigations

Steps in Data Collection at JCPH

1. **Case Identification and Notification:** X-Sentinel, MDHSS WebSurv, EpiTrax, secure emails, faxes etc.
2. **Jurisdiction and Reportable Disease Determination:** Confirm if the case falls within Eastern Jackson County, then determine if reportable.
3. **Internal Documentation (Epi Log):** Recorded in the Epi Log, an Excel workbook that tracks investigation data.
4. **Communication and Reporting:** Enter information in the WebSurv database, update case status, and ensure secure communication with health agencies.

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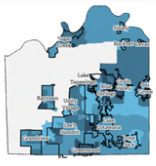
EpiTrax



JACKSON COUNTY PUBLIC HEALTH

DATA COLLECTION AND MANAGEMENT - LINE LIST EXAMPLE

Case ID	Interview date (mm/dd/yyyy)	Name (Last, First)	Address	Phone Number	Email address	DOB	Age (years)	Sex (M/F)	Race	Ethnicity	Employee or Employee Family Member?	Park Occupation? (National Park Service, Youth Conservation Corps, Concession)
19750001	7/10/1975	Fox, Nell	4777 SW Bethel Rd	(555)555-3681	nfox@nps.gov	1/10/1939	36	F	Native America	Non-Hispanic	Employee	National Park Service

Park resident? (Yes/No)	Ill? (Yes/No)	Onset date (mm/dd/yyyy)	Onset time (hh:mm) am/pm	Illness Duration (days)	Stool test? (Yes/No)	Test type? (Culture, EIA)	Diarrhea? (Yes/No)	Bloody Diarrhea? (Yes/No)	Abdominal cramps? (Yes/No)	Nausea? (Yes/No)	Vomiting? (Yes/No)	Chills? (Yes/No)	Headache? (Yes/No)	Muscle aches? (Yes/No)	Fever? (Yes/No)
Yes	Yes	7/5/1975	6:00am	11	No		Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes

Other symptoms? (Yes/No)	If yes to other symptoms, please describe	Other symptom onset date (MM/DD/YYYY)	Medical care? (Yes/No)	Hospitalized? (Yes/No)	If hospitalized, dates of hospitalization (mm/dd/yyyy)	Any treatment? (Yes/No)	If treated, please describe	Currently ill? (Yes/No)	If yes, current symptoms	Pre-existing GI conditions? (Yes/No)	Contact with other ill individuals? (Yes/No)	If yes, please list name and relationship	Excluded from work? (Yes/No)	Participate in park activities? (Yes/No)
No			No	No		No		No		No	No		No	Yes

Participate in park activities? (Yes/No)	Boat tour? (Yes/No)	Boat tour date (MM/DD)	Hiking? (Yes/No)	Hiking date (MM/DD)	Trolley ride? (Yes/No)	Trolley ride date (MM/DD)	Swimming? (Yes/No)	Swimming date (MM/DD)	Snorkeling? (Yes/No)	Snorkeling date (MM/DD)	Snowshoeing? (Yes/No)	Snowshoeing date (MM/DD)	Other activity	Other activity date (MM/DD)	Travel outside of Crater L in the 7 days prior to sym onset? (Yes/No)
Yes	No		No		Yes	6/18	No		No	6/18	Yes	6/19			No

If yes, list dates (MM/DD)	Food sources in the 7 days prior to onset? (Dorm cafeteria, concession, prepared own food, ate outside the park)	Park water consumed in the 7 days prior to onset? (Yes/No)	If yes to dorm cafeteria, mark following foods	Cafeteria Sloppy joe (Yes/No)	Cafeteria Chips (Yes/No)	Cafeteria French Fries (Yes/No)	Cafeteria Apples (Yes/No)	Cafeteria Baked Beans (Yes/No)	Cafeteria Cookies (Yes/No)	Cafeteria Lemonade (Yes/No)	Cafeteria Fruit Punch (Yes/No)	Cafeteria Coffee (Yes/No)	Cafeteria Ice (Yes/No)	Cafeteria Ketchup (Yes/No)	Cafeteria Mustard (Yes/No)	Cafeteria Mayo (Yes/No)	Cafeteria Lettuce (Yes/No)	Cafeteria Dill pickles (Yes/No)
	Prepared food	Yes																

Cafeteria Dill pickles (Yes/No)	Cafeteria Watermelon (Yes/No)	Cafeteria Pancakes (Yes/No)	Cafeteria Sausage (Yes/No)	Cafeteria Cereal (Yes/No)	Cafeteria Oatmeal (Yes/No)	Cafeteria Orange Juice (Yes/No)	Cafeteria Milk (Yes/No)	Cafeteria Mac & Cheese (Yes/No)	Cafeteria Chicken nuggets (Yes/No)	Cafeteria Green beans (Yes/No)	Cafeteria Corn (Yes/No)	Cafeteria Jell-O (Yes/No)	If yes to concession stand, mark the following foods	Concession ice popsicles (Yes/No)	Concession peanut butter crackers (Yes/No)	Concession Cookies (Yes/No)	Concession M&M's (Yes/No)	Concession Snickers (Yes/No)	Concession Skittles (Yes/No)	Concession Twix (Yes/No)	Concession Kit Kit (Yes/No)	Concession Ice cream (Yes/No)

Concession Gatorade (Yes/No)	Concession Juice (Yes/No)	Concession Water (Yes/No)	Concession Ice (Yes/No)	Concession Corn dog (Yes/No)	Concession Hot dog (Yes/No)	Concession Mustard (Yes/No)	Concession Ketchup (Yes/No)	Concession Relish (Yes/No)	Concession Fruit cup (Yes/No)	Concession Chips (Y/N)	If yes to preparing own food, list foods	Food purchase locations	Food purchase dates	If yes to outside the park, list food items	Outside park food locations	Outside park food dates	Comment
											Chicken salad, rolls, a	Thriftway	Unknown				

DATA COLLECTION AND MANAGEMENT

Data Collection Methods at JCPH

Primary Methods: Interviewer-Administered

- Face-to-Face Interviews
- Phone Interviews

Secondary Methods: Self-Administered

- Mailed Questionnaires
- Web Based Surveys

Ensuring Quality Data

- **Standardized Tools:** Consistent use of interview forms and electronic systems.
- **Interviewer Training:** Comprehensive training to reduce errors in data collection.
- **Just-in-Time Training:** Rapid, focused training for interviewers during outbreak situations
- **Data Validation Checks:** Implement procedures to ensure accuracy and completeness of collected data.

DATA COLLECTION AND MANAGEMENT

Interviews in CD Investigation

Purpose of Interviews

- **Gather Information:** Collect detailed data on exposure history and symptoms.
- **Patient Education:** Provide guidance on disease prevention and control measures.
- **Case Identification:** Help identify additional cases and potential contacts for further investigation.

Types of Questions

- **Open-Ended:** Capture qualitative details.
- **Example:** "Can you describe the symptoms you experienced?"

- **Closed-Ended:** Collect quantitative data
- **Example:** "Did you have a fever? Yes or No."

Probing Techniques ↔ **Minimize Bias**

Legal and Ethical Considerations

LEGAL AND ETHICAL CONSIDERATIONS

Considerations in CD Investigations at JCPH

- Protect personal health information
- Obtain consent when appropriate
- Follow HIPAA guidelines
- Permitted disclosure for public health activities
- Maintain impartiality during investigation
- Approach all individuals with respect for their backgrounds and beliefs
- Missouri law requires reporting certain diseases and conditions to protect public health

HIPAA
Health Insurance Portability & Accountability Act

MISSOURI DEPARTMENT OF HEALTH & SENIOR SERVICES

CONCLUSION:
KEY TAKEAWAYS FROM CD INVESTIGATION

- **Effective Surveillance**
- **Data Collection & Management**
- **Interviews & Investigation**
- **Ethical & Legal Compliance**
- **Collaboration**


JACKSON
COUNTY
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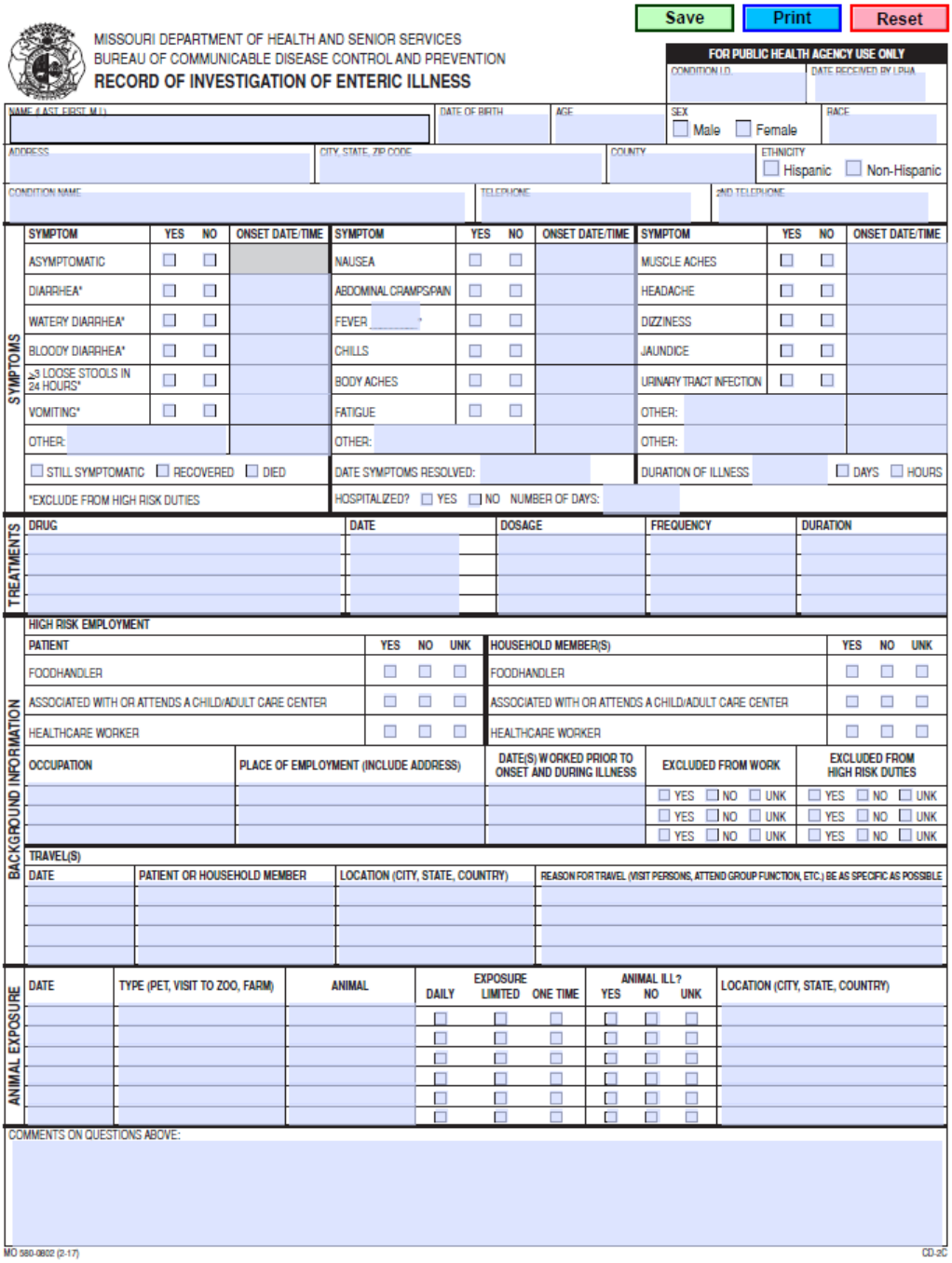
Questions?
Epidemiology and Data Analytics – Communicable Disease Team
// JACKSONCOUNTYPH

2.2 PDD Activity – Salmonella Case Form and Scripts



Save Print Reset

MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES
BUREAU OF COMMUNICABLE DISEASE CONTROL AND PREVENTION
RECORD OF INVESTIGATION OF ENTERIC ILLNESS

FOR PUBLIC HEALTH AGENCY USE ONLY
CONDITION I.D. | DATE RECEIVED BY LPHA

NAME (LAST, FIRST, M.I.) | DATE OF BIRTH | AGE | SEX ☐ Male ☐ Female | RACE
ADDRESS | CITY, STATE, ZIP CODE | COUNTY | ETHNICITY ☐ Hispanic ☐ Non-Hispanic
CONDITION NAME | TELEPHONE | 2ND TELEPHONE

SYMPTOMS

SYMPTOM	YES	NO	ONSET DATE/TIME	SYMPTOM	YES	NO	ONSET DATE/TIME	SYMPTOM	YES	NO	ONSET DATE/TIME
ASYMPTOMATIC	☐	☐		NAUSEA	☐	☐		MUSCLE ACHES	☐	☐	
DIARRHEA*	☐	☐		ABDOMINAL CRAMPS/PAIN	☐	☐		HEADACHE	☐	☐	
WATERY DIARRHEA*	☐	☐		FEVER ____°	☐	☐		DIZZINESS	☐	☐	
BLOODY DIARRHEA*	☐	☐		CHILLS	☐	☐		JAUNDICE	☐	☐	
≥3 LOOSE STOOLS IN 24 HOURS*	☐	☐		BODY ACHES	☐	☐		URINARY TRACT INFECTION	☐	☐	
VOMITING*	☐	☐		FATIGUE	☐	☐		OTHER:			
OTHER:				OTHER:				OTHER:			

☐ STILL SYMPTOMATIC ☐ RECOVERED ☐ DIED | DATE SYMPTOMS RESOLVED: | DURATION OF ILLNESS ☐ DAYS ☐ HOURS
*EXCLUDE FROM HIGH RISK DUTIES | HOSPITALIZED? ☐ YES ☐ NO NUMBER OF DAYS:

TREATMENTS

DRUG	DATE	DOSAGE	FREQUENCY	DURATION

BACKGROUND INFORMATION

HIGH RISK EMPLOYMENT

PATIENT	YES	NO	UNK	HOUSEHOLD MEMBER(S)	YES	NO	UNK
FOODHANDLER	☐	☐	☐	FOODHANDLER	☐	☐	☐
ASSOCIATED WITH OR ATTENDS A CHILD/ADULT CARE CENTER	☐	☐	☐	ASSOCIATED WITH OR ATTENDS A CHILD/ADULT CARE CENTER	☐	☐	☐
HEALTHCARE WORKER	☐	☐	☐	HEALTHCARE WORKER	☐	☐	☐

OCCUPATION	PLACE OF EMPLOYMENT (INCLUDE ADDRESS)	DATE(S) WORKED PRIOR TO ONSET AND DURING ILLNESS	EXCLUDED FROM WORK	EXCLUDED FROM HIGH RISK DUTIES
			☐ YES ☐ NO ☐ UNK	☐ YES ☐ NO ☐ UNK
			☐ YES ☐ NO ☐ UNK	☐ YES ☐ NO ☐ UNK
			☐ YES ☐ NO ☐ UNK	☐ YES ☐ NO ☐ UNK

TRAVEL(S)

DATE	PATIENT OR HOUSEHOLD MEMBER	LOCATION (CITY, STATE, COUNTRY)	REASON FOR TRAVEL (VISIT PERSONS, ATTEND GROUP FUNCTION, ETC.) BE AS SPECIFIC AS POSSIBLE

ANIMAL EXPOSURE

DATE	TYPE (PET, VISIT TO ZOO, FARM)	ANIMAL	EXPOSURE DAILY	EXPOSURE LIMITED	EXPOSURE ONE TIME	ANIMAL ILL? YES	ANIMAL ILL? NO	ANIMAL ILL? UNK	LOCATION (CITY, STATE, COUNTRY)
			☐	☐	☐	☐	☐	☐	
			☐	☐	☐	☐	☐	☐	
			☐	☐	☐	☐	☐	☐	
			☐	☐	☐	☐	☐	☐	
			☐	☐	☐	☐	☐	☐	
			☐	☐	☐	☐	☐	☐	

COMMENTS ON QUESTIONS ABOVE:

MO 580-0802 (2-17) CD-2C

FOOD EXPOSURE

FOOD EXPOSURE	TYPE	DATE	NAME	LOCATION (CITY, STATE, COUNTRY)
☐ GROCERY ☐ RESTAURANT ☐ OTHER				
☐ GROCERY ☐ RESTAURANT ☐ OTHER				
☐ GROCERY ☐ RESTAURANT ☐ OTHER				
☐ GROCERY ☐ RESTAURANT ☐ OTHER				
☐ GROCERY ☐ RESTAURANT ☐ OTHER				
☐ GROCERY ☐ RESTAURANT ☐ OTHER				
☐ GROCERY ☐ RESTAURANT ☐ OTHER				

OTHER FOODS

TYPE OF FOOD	YES	NO	SPECIFIC FOOD	DATE	TYPE OF FOOD	YES	NO	SPECIFIC FOOD	DATE	TYPE OF FOOD	YES	NO	SPECIFIC FOOD	DATE
UNPASTEURIZED DAIRY	☐	☐			GROUND BEEF (RAW OR UNDERCOOKED)	☐	☐			POULTRY (RAW OR UNDERCOOKED)	☐	☐		
HOME-CANNED FOODS	☐	☐			SEAFOOD (COOKED)	☐	☐			HUNTED OR TRAPPED MEAT	☐	☐		
EGGS (RAW OR UNDERCOOKED)	☐	☐			SEAFOOD (RAW)	☐	☐			ETHNIC	☐	☐		
OTHER					OTHER					OTHER				

OTHER FOODS COMMENTS:

WATER & SEWAGE

SEWAGE SYSTEM AND WATER SUPPLY	IF PRIVATE, TYPE	IF PUBLIC, TYPE
HOME SEWAGE SYSTEM ☐ PRIVATE ☐ PUBLIC ☐ BOTH ☐ UNKNOWN ☐ NONE	☐ LAGOON ☐ SEPTIC TANK ☐ SAND MOUND ☐ AEROBIC TREATMENT UNIT (ATU) ☐ HOLDING TANK ☐ CONSTRUCTED WETLAND ☐ UNKNOWN ☐ OTHER (SPECIFY)	☐ LAGOON ☐ SEWAGE TREATMENT PLANT ☐ UNKNOWN ☐ OTHER (SPECIFY) **PUBLIC SEWAGE - NAME AND LOCATION**
HOME WATER SUPPLY ☐ PRIVATE ☐ PUBLIC ☐ BOTH ☐ UNKNOWN ☐ NONE	☐ WELL ☐ CISTERN ☐ POND ☐ LAKE ☐ RIVER ☐ BOTTLED ☐ SPRING ☐ OTHER (SPECIFY)	**PUBLIC WATER - NAME AND LOCATION**

RECREATIONAL WATER

DATE(S)	TYPE OF RECREATIONAL WATER EXPOSURE	LOCATION (BE SPECIFIC)	DATE(S)	TYPE OF RECREATIONAL WATER EXPOSURE	LOCATION (BE SPECIFIC)

ILL CONTACTS

NAME AND ADDRESS	DATE OF BIRTH/AGE	SEX	RELATION TO CASE	SIMILAR ILLNESS YES	SIMILAR ILLNESS NO	ONSET DATE	LAB TESTING POS	LAB TESTING NEG	LAB TESTING NOT DONE	LAB TESTING UNK	EPI-LINKED, CD-1, ENTERIC FORM COMPLETED* YES	EPI-LINKED, CD-1, ENTERIC FORM COMPLETED* NO
				☐	☐		☐	☐	☐	☐	☐	☐
				☐	☐		☐	☐	☐	☐	☐	☐
				☐	☐		☐	☐	☐	☐	☐	☐
				☐	☐		☐	☐	☐	☐	☐	☐

*LIST HOUSEHOLD AND OTHER CLOSE CONTACTS WITH SIMILAR ILLNESS. COMPLETE SEPARATE "CD-1 DISEASE CASE REPORT" AND "RECORD OF INVESTIGATION OF ENTERIC ILLNESS" FOR EACH ILL CONTACT.

OTHER FACTORS

MEDICAL AND SOCIAL FACTORS

☐ ALCOHOLISM ☐ DIABETES ☐ FOOD ALLERGIES ☐ PEPTIC ULCER ☐ GASTRIC SURGERY ☐ CARDIOVASCULAR DISEASE
☐ HEMATOLOGIC DISEASE ☐ IMMUNE DEFICIENCY ☐ LIVER DISEASE ☐ CANCER ☐ KIDNEY DISEASE

MEDICATIONS

☐ ANTIBIOTICS ☐ CHEMOTHERAPY ☐ RADIOTHERAPY ☐ SYSTEMIC STEROIDS ☐ IMMUNOSUPPRESSANTS ☐ ANTACIDS
☐ H2 BLOCKER OR OTHER ULCER MEDICINE ☐ OTHER (SPECIFY)

OTHER FACTORS COMMENTS:

POSSIBLE SOURCE

SOURCE OF INFECTION (SUSPECTED/POSSIBLE) (FOOD, WATER, TRAVEL, PERSON TO PERSON, ETC.)	REASON (CASE REPORT, EPIDEMIOLOGICAL INVESTIGATION, MULTIPLE CASE REPORTS, LABORATORY TESTING)

OUTBREAK RELATED ☐ YES ☐ NO ☐ UNKNOWN

OUTBREAK COMMENTS:

OTHER PERTINENT EPIDEMIOLOGICAL DATA OR COMMENTS:

NAME OF INVESTIGATOR

DATE COMPLETED

MO 580-0802 (2-17) CD-2C

Patient Response Script #1 - Emily A. Greenside

**This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to ensure to provide the investigator with as much information as possible to assist in their investigation.*

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say 'I'm not sure' or 'I don't know.'*

Demographic Information

"I was born on **May 14th, 1995**. I'm **female**, and I identify as **Caucasian**."

Symptoms

"So, I **started feeling really awful on November 9th**. It was Saturday, I remember because I was supposed to go shopping with my mom, but I just couldn't get out of bed. At first, I thought it was just something minor, maybe I was just tired from the week, you know? But then things got worse."

"I had this terrible **diarrhea**. It wasn't just normal diarrhea; it was really bad. I mean, I was **running to the bathroom every hour**. I couldn't keep anything in. I must have gone more than three times in just a few hours. It was so inconvenient. I was supposed to meet up with friends that evening, but obviously, that didn't happen."

"On top of that, I was **vomiting** a lot. I couldn't even keep water down. Every time I tried to drink or eat something, it just came right back up. I felt **nauseous** the whole time. My **stomach was cramping so badly**; it was like this constant, sharp pain that just wouldn't go away."

"I also had a **fever**. **I felt so hot and cold at the same time**—it was weird. I checked my temperature, and it was around **101 degrees**. I was **sweating one minute and then shivering the next. It was really uncomfortable**. My **whole body ached**, like when you have the flu. My **muscles were sore**, and I felt **tired and weak**. I could barely get out of bed."

"**It's been two days now**, and I'm **still feeling these symptoms**. I thought maybe it would pass quickly, but it hasn't. **I didn't go to the hospital** because I didn't think it was that serious, but **I did go to urgent care on the 10th** because I was feeling so terrible. **They gave me some anti-nausea medication**, but I'm still not feeling great."

Treatments

"**At urgent care**, the doctor was really nice. They asked me a bunch of questions and then **gave me a prescription for anti-nausea medication**. **I don't remember the exact strength or dosage**—I'm **supposed to take it every eight hours**, I think. They also told me to stay hydrated

and get plenty of rest. They said it might just be a stomach bug that's going around. The meds seem to help a little with the nausea, but the other symptoms are still there."

"They didn't give me anything else, and they said if things don't improve in a few days, I should come back or see my primary care doctor. I'm trying to rest as much as I can, but it's hard because I have so much to do."

Occupation

"**I'm a kindergarten teacher at Jackson Elementary**. I absolutely love my job and my kids—they're just adorable. **I worked the entire week before I got sick**. We were preparing for a science fair, so it was a busy week. I've been staying home since I got sick, though. I didn't want to risk getting anyone else sick, especially the kids. They're so young, and i'm scared to pass it on to them"

"**I let the school know about my condition, and they told me to take the time I need to recover.** But I'm a bit worried because we have parent-teacher conferences coming up, and I don't want to miss those. Do you have any idea when I might be able to go back to work? I need to let my principal know so they can plan accordingly."

Travel History

"Oh, and I should mention that my husband and I **went on vacation to Cabo on October 28th**. It was such a lovely trip! **We were there for about a week**. We stayed at this beautiful resort by the ocean, it was called **Playa El Jade**. We did all sorts of activities—swimming, snorkeling with sea turtles, lounging on the beach. It was so relaxing. I felt perfectly fine during and after the trip, though, but maybe it's one of those longer illnesses and it's related to how I'm feeling now."

Animal Exposure

"**We have a pet dog at home**. His name is Ruffles—he's a golden retriever, and he's the best dog ever! I try to take him on a walk every day, but I haven't been able to since I got sick. He sleeps in the bed with us and is basically my fur-baby. He's been scratching a lot more recently, which is unusual. I'm planning to take him to the vet soon to see if everything's okay. I hope his scratching isn't related to what's going on with me."

Ill Contacts

"I **saw my sister Sarah on November 7th**. She **was sick with the flu**—poor thing. I brought her some soup and stayed with her for a bit. Maybe I caught something from her? This sort of feels

like a harsh flu. **Also, two of my students were sick earlier in the week**. They were out of class for a couple of days. Kids pick up germs so easily, and sometimes they come to school even when they shouldn't. I try to keep things clean in the classroom, but it's hard to control everything."

Food Exposures

"Let's see, food-wise, **I ate at City Bistro in Lee's Summit on November 4th**. I had their **vodka pasta**—it was delicious. On **November 1st, I had Pepperoni pizza from Papa John's**. I'm pretty sure it was the one in **Independence**. Let me think… **on November 2nd**, my husband and I **went to Oceanside for dinner. I had their crab delights**—they were so good. **It came with a side of steamed, seasoned vegetables with their signature spicy butter dip**. I doubt it was that because I felt fine afterward."

"Then, on **November 9th, I went to The Garden Spot.** I ordered my favorite **grilled chicken salad.** When it arrived, I noticed **the chicken looked kind of pink inside**. I thought that was odd because it's usually cooked well. I took a bite before I realized it seemed undercooked. It didn't taste right, so I sent it back and asked for a new dish. They apologized and brought me a fresh one, which seemed fine. I didn't think much of it at the time, but maybe that had something to do with how I'm feeling now."

"I also did some **grocery shopping at Walmart earlier this month in Independence**. Just the usual stuff—fruits, vegetables, some household items. I always check the expiration dates and make sure everything looks fresh."

Recreational Water Exposure

"**During our vacation in Cabo, we went swimming in the ocean almost every day**. We even snorkeled with sea turtles—it was such an amazing experience! I didn't have any issues then, and I felt perfectly fine during and after the trip. That was back on October 28th, so it seems like a long time ago for it to be related, but I thought I'd mention it just in case."

Medical History

"I was **diagnosed with diabetes in 2019. It's Type 2**. I've been managing it pretty well with diet and exercise, and I monitor my blood sugar levels regularly. **I'm not currently taking any medications besides the anti-nausea medicine from urgent care and my insulin**. I haven't had any major issues with my diabetes recently."

Additional Comments

"**My husband hasn't been sick at all; he's feeling fine**. He's been taking care of me, which is sweet. I'm a bit worried about possibly spreading something to my students or colleagues at school. I always try to be cautious, especially during flu season. I'm staying home from work until I'm fully recovered and cleared to return. Do you have any advice on when it might be safe for me to go back? I really need to tell my principal and plan accordingly."

"Also, is there anything else I should be doing? Should I get tested for anything specific? I just want to make sure I handle this properly and don't put anyone else at risk."

Note to Self:

- Remember to schedule an appointment for Ruffles at the vet.
- Follow up with my primary care physician if symptoms don't improve soon.
- Keep monitoring my blood sugar levels to ensure my diabetes stays under control.
- Inform the school about any updates on my condition.

Patient Response Script #2 - Michael T. Bangor

**This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to ensure to provide the investigator with as much information as possible to assist in their investigation.*

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say 'I'm not sure' or 'I don't know.'*

Demographic Information

"Uh, I was born on... let's see... **July 22nd, 1988**, I think. I'm **male**. Race? **African American.**"

Symptoms

"Symptoms? **Well, I've been feeling kinda off lately. Not sure when it started exactly. Maybe a few days ago?** I think it was **around November 9th**. Just been having **some stomach issues.**"

"**Diarrhea? Yeah, definitely**. It's been... I don't know, going to the bathroom more than usual. **Watery? I guess so**. It's not something I really paid attention to."

"**Vomiting? Yeah, I threw up a couple of times. Nausea? Sure**, I felt a bit nauseous. **Abdominal pain? Yeah**, my stomach's been hurting."

"**Had a fever? Maybe. Felt a bit warm**. Didn't check my temperature or anything. **Chills? I don't know, maybe a little. Body aches? Yeah**, but that's normal after a long shift."

"**Fatigue? I'm always tired, honestly. Muscle aches? Like I said, that's normal for me.**"

"**Headaches or dizziness? Not really. Jaundice? No idea what that is. Urinary tract infection? Don't think so."**

Illness Duration

"**Am I still sick? Kinda.** It's been a couple of days. Didn't really keep track. **Haven't been to the hospital or anything.** Just trying to ride it out."

Treatments

"**Treatments? I took some over-the-counter stuff for diarrhea**. **Got them on November 10th, I think.** Just followed the directions on the package. **Took them every few hours for a day or so**."

Occupation

"**I work as a chef.** Executive chef, actually, at **Fancy Grill over on River Road**. Been there for a while now."

"**Worked before I got sick? Yeah, I was working from November 7th to the 9th**. Had to leave early on the 9th 'cause I wasn't feeling well."

"Excluded from work? Yeah, my boss told me to stay home until I'm better"

Travel History

"**Travel? No**, I haven't been anywhere lately. Just been around town. Went to my moms house in KC to watch her cats a month ago "

Animal Exposure

"**Pets? Yeah, I have a cat**. Name's Whiskers. He's fine, as far as I can tell. Not sick or anything. **Lives with me in Independence.**"

Ill Contacts

"**Anyone else sick? Well, my girlfriend Jenny hasn't been feeling great.** She **got sick after me**, I think. **Not sure when exactly. Maybe November 10th? We live together,** so maybe she caught whatever I have. She's been pretty mad at me"

Food Exposures

"**Food places? Let's see... I went to The Garden Spot in Lee's Summit on Friday**. **Had a chicken wrap, I think**. Tasted kinda off, but I didn't think much of it."

"**Went to McDonald's in Independence** the day before that. **Just grabbed a McDouble and a Powerade**. Nothing weird."

"**Did some grocery shopping at Hy-Vee on Wednesday**. Just the usual stuff. I actually tried out some new cheeses that they had in the deli section. I got some Burrata that pairs well with a Cabernet that we are trying out over at Fancy Grill."

Type of Food Consumed

"**Unpasteurized dairy? I don't think so. Home-canned foods? Nope.**"

"**Eggs? Don't remember eating any raw or undercooked eggs**."

"**Ground beef? Yeah, I had some beef tartar at work on Thursday. Part of testing a new recipe**."

"Seafood? Had calamari earlier last week, also at work. Had it raw and then I cooked it. It tastes better raw"

"**Poultry? Yeah, had that chicken wrap at The Garden Spot. Like I said, it tasted a bit off**."

Other Factors

"Medical conditions? Well, **I was diagnosed with... uh... CVID or something like that when I was 24**. It's an immune disorder, so I get sick more than normal, and I have to get regular treatments."

"**Medications? Just for the CVID**. I have to get an IV every month"

"I do hang out with my coworkers after shifts. We usually grab some drinks. It's kind of a routine."

Additional Comments

"As a chef, I taste food all the time. It's part of the job. Maybe I picked up something from that. My girlfriend's sick too, so maybe it's something we ate at home."

"When can I get back to work? I've got responsibilities, you know. Can't be sitting around all day."

"Do you need anything else? I don't have much more to tell you."

Note to Self:

- Check in on Jenny to see how she's feeling.
- Need to get back to work soon.

Patient Response Script #3 - Sarah N. Marino

**This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to ensure to provide the investigator with as much information as possible to assist in their investigation.*

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say 'I'm not sure' or 'I don't know.'*

Demographic Information

"Hi there! My name is **Sarah Marino**. I'm **21** and was born on **November 3rd, 2003**. I'm **female** and identify as **Asian**. I live at **789 Pine Lane in Lee's Summit, Missouri, zip code 64063**. It's a lovely neighborhood next to summit park. My phone number is **(555) 345-6789** if you need it for your records."

Symptoms

"So, let me tell you about what's been going on. On **November 10th, which was yesterday**, **I started feeling really unwell**. I remember the date because I was supposed to meet my friends for a study group session—we have this big biochem 2 exam coming up—but I had to cancel at the last minute. I **woke up with the most awful stomach cramps**. It felt like my stomach was tying itself in knots."

"Then, I started having **diarrhea**. Sorry if that's TMI! But I was running to the bathroom every half hour, it seemed. It was relentless. On top of that, I started **puking**. I couldn't keep anything down—not even water or my favorite ginger lavender tea, which usually helps settle my stomach. The **nausea** was constant, and it was just miserable."

"**I didn't have a fever**, at least not that I could tell. **I felt a bit chilly, though**, and **definitely had some chills.** I bundled up in a blanket, but then I'd start sweating. **My body ached all over**, especially my legs and back. They were so **sore**, probably from all the trips back and forth to the bathroom and the strain of vomiting. I had a pounding **headache** that just wouldn't go away, which made it hard to focus on anything, even just watching TV to distract myself."

"**It's been only a day since the symptoms started**, but it feels like much longer. I'm still feeling pretty rough. I haven't gone to the hospital—I didn't think it was that serious yet. Plus, hospitals kind of freak me out unless it's an emergency. I haven't taken any medications either, besides some herbal remedies. Do you think I should go to the hospital?"

Treatments

"**I haven't taken any medications.** I prefer natural remedies when possible. I've been drinking plenty of fluids—water, herbal teas, clear broths—to stay hydrated. I tried ginger and peppermint teas to help with the nausea and stomach cramps, but they haven't provided much help. I also diffused my favorite essential oils, lavender and eucalyptus, to help with relaxation and the

headache. My roommate told me I should take some over-the-counter meds, but I'm hesitant because I don't like how they make me feel groggy. Do you think I should take some meds?"

Occupation and Work

"So, I'm **currently a lab research assistant at UMKC**. I'm also a student there, majoring in health biology with a focus on microbiology. I find it absolutely fascinating! In the lab, we work on **fungal disease research**, and **I get to handle lab animals like mice and snakes**. They're really quite interesting creatures. **I worked all of this semester on Mondays, Wednesdays, and Fridays from 8 to 11**. **In the lab we handle some infected mice and snakes as part of our research.**"

"We always follow strict safety protocols—wearing gloves, lab coats, proper handwashing—but I guess there's always a risk when working with live animals and pathogens. I haven't had any issues before, but maybe something slipped through the cracks? I hope not. **I've let my supervisor know about how I've been, and they told me to stay home until I'm better**. I'm worried about falling behind on our projects and my studies, especially with finals coming up."

Travel History

"I've done a bit of traveling recently. **On November 2nd, I went to Columbia to visit my aunt.** She's such a sweetheart and makes the best homemade jam! We spent the weekend together, and I helped her out at the local farmer's market where she sells her goods. Before that, from **October 24th to 27th, I attended a research conference in Dallas, Texas, at the North Dallas Star Hotel**. It was an incredible experience! There were about 350 people from all over the country. I even presented a poster on our latest research findings. I networked with so many professionals and students—it was inspiring but also a bit overwhelming."

"Oh, and **my roommate traveled as well. She went to Palo Alto, California, on November 1st to visit her family**. **She came back a couple days later feeling under the weather**—she had a headache, cough, and some congestion. I thought it was just jet lag or a mild cold, but now I'm wondering if she spread what she had to me."

Animal Exposure

"As part of my job, **I work closely with l**ab animals. **On November 4th, I was handling mice that are part of our fungal disease studies**. Some of them seemed more lethargic than usual, which we noted in our logs. **We also have snakes in the lab**. My favorite is a corn snake named Slinky. He's quite docile and is used for some of our educational outreach programs. I handled him that day as well. Reptiles can carry bacterial disease, so we always take precautions, but maybe something happened."

"**At home, I have a pet fish named Bubbles**. He's a betta fish with beautiful blue and red fins. On November 8th, I noticed he wasn't as active and wasn't eating his food pellets. I got worried and changed his water, cleaned his tank, and even bought special fish vitamins. He still seems a bit off, which makes me sad because I've had him since freshman year. I think I'm gonna take him to the vet. I hope he's okay."

Ill Contacts

"**Some of my friends have been feeling sick too**. **My friend Sam started feeling ill a day before I did.** He had similar symptoms—nausea, vomiting, diarrhea. **Another friend, Grace, also got sick around the same time**. She's in my biology class, and we often study together. **We all ate together at the Garden Spot, I think that Wednesday, and hung out at the farmers market on Saturday**. We sampled some cool foods and enjoyed the day. Maybe we all picked up something there?"

Food Exposures

"I absolutely love going to farmers markets! We visited the City Market in Kansas City. I stopped by **Mushroom Marvels**—they had an amazing selection of exotic mushrooms like lion's mane and shiitake. **I bought some to cook at home and even tried a mushroom smoothie** they were promoting. It was surprisingly tasty, though the texture was a bit unusual."

"We also went to **Schrute Farms' stand**. They were selling raw milk and beetroot products. I **bought a small bottle of raw milk**—I've heard it's supposed to be healthier and have more probiotics since it's unpasteurized. I know there are risks, but I wanted to try it for the health benefits. **I drank it that evening**, and it tasted fresher than regular milk."

"**On November 6th, I ate at The Garden Spot in Lee's Summit.** I had their **vegetarian pasta primavera**—it was delightful! Fresh veggies and perfectly cooked pasta. **I'm a vegetarian, by the way**—have been for three years now. I like to focus on eating whole foods and organic products when possible."

"**I frequently visit Einstein Bros. Bagels and Starbucks on campus. On November 4th and 5th, I grabbed a spinach and artichoke bagel with cream cheese and my usual vanilla latte**. I love their seasonal flavors! I also **did some grocery shopping at Trader Joe's on November 4th**. Picked up some tempeh, almond milk, organic fruits, and veggies. **Oh, and on October 30th, a group of us went to Sluggers Bar and Grill** in **Raytown** for karaoke night. I didn't eat much there—just shared some **nachos** with friends and had a soda."

Type of Food Consumed

"As I mentioned, I follow a vegetarian diet, so no meat or seafood for me. **I did consume raw milk from Schrute Farms** at the farmers market and tried that **smoothie at Mushroom**

Marvels. Oh and the **vegetarian pasta from the Garden Spot**, and the **nachos from Sluggers**. I haven't had any unpasteurized dairy before, so maybe my body didn't react well to it. **I haven't eaten any home-canned foods or raw or undercooked eggs**. I'm pretty careful about what I eat."

Water and Sewage

"Our house uses **public sewage and water systems.** The **Summit Treatment Facility** handles the **sewage**, and we get our **water** from the **Jackson County Water District**. I haven't noticed any issues with the water quality—no discoloration or strange odors."

Recreational Water Exposure

"I enjoy swimming to stay active and relieve stress. **I went to the UMKC Aquatic Center on October 29th and again on October 31st.** The pool is well-maintained, and they post regular water quality reports. I didn't notice anything unusual during my swims. It's been a while since then, so I'm not sure if it's related, but I thought I'd mention it."

Medical History

"I take **Lexapro** for **depression and anxiety**. I've been on it for about a year and a half now, and it's been really helpful. My mental health is important to me, and I make sure to attend therapy sessions regularly. Other than that, **I don't have any chronic illnesses or conditions**. I try to maintain a healthy lifestyle—eating well, exercising, meditating."

Additional Comments

"I'm quite concerned about spreading this illness to others. I've been in contact with several people—my roommate, friends, lab colleagues. I plan to inform them about my symptoms so they can be cautious. Should I consider getting tested for specific infections? Is there anything I can do to expedite recovery?"

"Also, I'm worried about my responsibilities at the lab and school. I have a presentation due next week and a lab report that I haven't started because I've been feeling so unwell. Do you think it's safe for me to return to work and classes soon?"

"Oh, and about my fish, Bubbles—if he's sick, could that indicate something about our water supply at home? Or is it unrelated? I'm probably overthinking, but I want to cover all bases."

"Lastly, during the conference in Dallas, I interacted with a lot of people and attended several workshops. I felt fine afterward, but perhaps I was exposed to something there that took time to manifest. Travel always comes with risks, I suppose."

Note to Self:

- Monitor symptoms and consider visiting a healthcare provider if they persist or worsen.
- Inform lab supervisor and colleagues about potential exposure risks.
- Check on Bubbles and possibly consult a veterinarian or pet specialist.
- Stay in touch with friends who are also ill to track any common factors.

Patient Response Script #4 - David J. Enterico

**This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to ensure to provide the investigator with as much information as possible to assist in their investigation.*

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say 'I'm not sure' or 'I don't know.'*

Demographic Information

"My name's **David Enterico**. I was **born on April 8th, 1978**. I'm **male**, and **white**. I live at **1246 NE Depot Drive in Lee's Summit**. My phone number is **555-985-7418**."

Symptoms

"A few days ago, around **Thursday, I started feeling a bit off**. Had some stomach issues."

"**Diarrhea**? Yeah, I had some diarrhea. Was going to the bathroom more than usual—**probably every hour or so**. It wasn't real fun, work porta-potties aren't the nicest."

"I was also **puking** and felt pretty **nauseous**. My **stomach was cramping** up quite a bit."

"I **didn't check if I had a fever**; I didn't feel particularly hot. But **I did have chills** and **body aches**. Felt **fatigued**, and my **muscles were aching.**"

"No headaches or dizziness. Definitely no jaundice or urinary tract infections."

Illness Duration

"The whole thing **lasted about two days**. Started on Thursday, and **by Saturday I was feeling back to normal.**"

"I wasn't hospitalized or anything. Just **stayed home and waited it out.**"

Treatments

"I **didn't take any medications**. Just **took some naps** and **drank some pedialyte**."

Occupation and Work

"I'm a **construction worker with JC Construction Company**. We've been working on a **new site near downtown Blue Springs**."

"I **worked from November 4th to the 6th** before I got sick. After that, **I didn't take any time off** since I needed to work. I called out too much recently and the foreman told me he'd fire me if I miss any more time before Christmas."

"My **wife is a nurse**; she works **in the ER at Centerpoint Medical Center**. She talks about sick people all the time coming into the ER and took care of me."

Travel History

"**I haven't traveled** anywhere recently. Just been around here."

Animal Exposure

"There are some **stray cats hanging around the construction site**. Sometimes **I feed them and pet them during breaks**. They looked nice and kept coming up to us."

Ill Contacts

"As far as I know, **no one else I know has been sick**. My **wife is fine**, and **none of my coworkers** have said anything."

Food Exposures

"**I grab food from QuickTrip pretty often**; I was there on **Monday**. Just got some snacks and a drink."

"The **Friday before**, I ate at **The Lowdown Steakhouse** in Independence. It was my wife and I's anniversary. Had a **rare steak** and some **fried shrimp**. It tasted fine to me."

"Went to **The Garden Spot** in Lee's Summit on **Wednesday with my Wife**. Can't remember exactly what she ordered. I had a **hot chicken sandwich** they had on special."

"We did some **grocery shopping at Price Chopper** on **Saturday**. My wife made some of her **home-canned salsa** that we've been eating. It's pretty good."

Water and Sewage

"We have a **private septic system** at home and get our **water from a well.**"

Recreational Water Exposure

"Nope, **haven't been swimming or anything like that** lately."

Other Factors

"I don't have any medical conditions that I know of. But I do take Tums pretty often. They taste good, so I eat 'em' like candy, really. Helps with heartburn after meals."

Additional Comments

"**My symptoms weren't too bad** and went away after a couple of days. I didn't take off work because of it."

"Is there anything else you need from me?

Patient Response Script #5 - Lisa M. Newport

**This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to ensure to provide the investigator with as much information as possible to assist in their investigation.*

Please note: Important information is **bolded. If you do not have an answer to a question, simply say 'I'm not sure' or 'I don't know.*

Demographic Information

"My name is **Lisa Newport**. **Date of birth is 10/15/1992**. I'm **female** and **Asian**. I live at **12715 Alley Jackson Road in Lee's Summit**"

Symptoms

"I've been feeling really unwell **since November 5th**. It started that evening after I got home from work. At first, I thought I was just tired from my shift, but then things escalated."

"I began experiencing **watery diarrhea**. I was running to the bathroom more times than I can count—**definitely more than three times in 24 hours**. It was quite debilitating."

"I was also **vomiting** and felt **extremely nauseous**. I couldn't keep any food down, and even drinking water made me feel sick. **My stomach was cramping** and causing a lot of pain."

"I had a **fever**; I checked my temperature, and it was **around 101 degrees**. I was getting **chills**—I would be shivering one moment and then sweating the next. It was very uncomfortable."

"My **whole body ached**, and I felt extremely **fatigued**. I was very **sore**, and I had a constant **headache** that just wouldn't go away."

"It's been **six days now**, and I'm **still experiencing these symptoms**. I haven't been able to return to work."

Treatments

"I haven't taken any medications."

Occupation and Work

"I'm an **OR nurse** at **St. Mary's in Blue Springs**."

"I **worked on November 4th and 5th** before my symptoms started. I haven't been back to work since then."

"As a healthcare worker, especially in the OR, I know the importance of not exposing patients to any potential infections. I**'ve been excluded from work until I'm medically cleared**."

Travel History

"The **only recent trip** I've done was back on **October 5th** when **I visited my in-laws in Gary, Indiana**. We spent three days there with family."

"I haven't traveled anywhere else recently."

Animal Exposure

"On **October 30th**, I **visited a friend's farm in Lone Jack**. They have chickens, and I **helped feed them** while I was there."

"I didn't notice any of the animals being ill. The chickens seemed healthy and active."

Ill Contacts

"My **husband** and **children haven't shown any symptoms**; they're all feeling fine."

"I haven't been around anyone else who is sick, as far as I know."

Food Exposures

"I did some **grocery shopping at Hy-Vee in Lee's Summit on November 3rd**. Just picked up some usual groceries for the week."

"On **November 4th, I ate at The Garden Spot in Lee's Summit**. I ordered a chicken sandwich."

"I also went to **Big City Brunch in Independence on November 2nd** with some friends. Had their avocado toast and coffee."

"At **The Garden Spot**, I **noticed that my chicken sandwich seemed undercooked**. The **chicken was a bit pink in the middle**, but I was really hungry and didn't want to wait, so I ate it anyway. In hindsight, that might not have been the best idea."

Type of Food Consumed

"I **haven't consumed any unpasteurized dairy or home-canned foods**."

"I **didn't eat any raw or undercooked eggs or ground beef.**"

"The only **undercooked food I might have eaten was the chicken sandwich from The Garden Spot on November 4th**."

Water and Sewage

"We have **public water** and **sewage services** at home."

"Our **sewage is handled by the Lee's Summit Sewage Department**, and our **water supply is from Lee's Summit Water Utilities.**"

Recreational Water Exposure

"I **haven't been swimming** or had any recreational water exposure recently."

Medical History

"I'm **generally healthy** with no significant medical history."

"I **don't have any chronic illnesses,** and I'm **not currently taking any medications**."

Additional Comments

"As a nurse, I'm very concerned about the risk of transmitting any infection to my patients, especially those who are vulnerable."

"I've been excluded from work until I'm medically cleared, but I'm eager to get back to my duties."

"Do you think I should get tested for anything specific? My primary care physician is backed up so I have an appointment in a couple days, but is there anything else I should be doing to recover more quickly?"

"I'm also wondering when it might be safe for me to return to work. I need to inform my supervisor about my expected return date."

Patient Response Script #6 - Robert L. Garcia

**This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to ensure to provide the investigator with as much information as possible to assist in their investigation.*

Please note: Important information is **bolded. If you do not have an answer to a question, simply say 'I'm not sure' or 'I don't know.*

Demographic Information

"Why do you need to know all this again? You already have my information, don't you? Fine. My name's **Robert Garcia**. Born on **August 30, 1973**. I'm a **Hispanic male**. What else do you want?"

Symptoms

"I don't know. I just felt sick, okay? It **started on the Thursday or something**. **Diarrhea? yeah**, I had that. **Watery diarrhea? Yeah**, sure, if you have to know. Look, **I threw up, had nausea, my stomach hurt, and I had a fever. My whole body was aching, and I had chills**. What else do you want to hear? That I was miserable for a day? I don't need to go over every little detail."

"**I got better the next day**. That's it. I'm fine now. You happy?"

Treatments

"**No, I didn't go to the doctor**. Why would I? I was sick for one day. I didn't take anything special, just waited it out. I don't need a prescription every time I feel a little off. **I didn't take meds.** What's the point in all these questions?"

Occupation

"Yeah, **I work at Natural Grocers**. I'm the **produce manager**. I **was at work the 4th, 5th, and 6th before I got sick**. I handle fruits and vegetables. I do my job, okay? What, do you think I'm spreading something? I already told my boss. They said I can come back now.

Travel History

"**No, I haven't traveled anywhere.** What's the next question? Are we almost done?"

Animal Exposure

"Yeah, **I have a pet turtle**. I know all about salmonella, and I wash my hands. That's not what got me sick, alright? It's ridiculous."

Food Exposure

"You want to know what I ate now? This is ridiculous. I had a **Caesar salad with grilled chicken from The Garden Spot on Wednesday**, and **the chicken was weird**. Maybe that's what did it. I don't know. I **also ate at a picnic for work on Sunday the 3rd—burgers and potato salad**, nothing fancy. And I grabbed a **bacon cheeseburger at Whataburger on Monday**. Anything else you want to pry into?"

Household and Contacts

"Yeah, **my wife Maria got sick too**. She started feeling bad a day before me. **We ate together at The Garden Spot**, so whatever made her sick got me sick too. No, we didn't see a doctor. We're fine now. End of story."

Water and Sewage

"We’re on a **septic system and have well water**. Nothing wrong with it. I don’t think that’s what made me sick, so can we move on?"

Recreational Water

"**No, I didn’t go swimming** or anything. I don’t have time for that, and I hate bodies of water."

Medical History

"**I’m healthy**. Nothing wrong with me. Why does it matter? I don’t go to the doctor, never needed to. Don’t start thinking this is because of something with my health."

Additional Comments

"Look, I don’t see why all these questions are necessary. I was sick for one day. It’s over. Just let me get back to work, okay? My wife’s fine, I’m fine, and there’s nothing more to talk about."

2.3 PDD Activity - Pertussis Patient Scripts and Case Reports

MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES
OFFICE OF SURVEILLANCE

PERTUSSIS REPORT

CASE NO.

PATIENT	NAME (LAST, FIRST, M.I.)			COUNTY
	ADDRESS	CITY	STATE	ZIP CODE
Reporting Physician Nurse/Hosp/ Clinic	NAME			TELEPHONE
	ADDRESS	CITY		ZIP CODE

DEMOGRAPHICS

BIRTHDATE (MONTH/DAY/YEAR) ___ / ___ / ___

SEX ☐ MALE ☐ FEMALE ☐ UNKNOWN

RACE
☐ NATIVE AMER./ALASKAN NATIVE ☐ WHITE
☐ ASIAN/PACIFIC ISLANDER ☐ OTHER
☐ AFRICAN AMERICAN ☐ UNKNOWN

ETHNICITY
☐ HISPANIC
☐ NOT HISPANIC
☐ UNKNOWN

CLINICAL DATA

EVENT DATE (MONTH/DAY/YEAR)

OUTBREAK ASSOCIATED (LEAVE BLANK UNLESS CASE AFFILIATED WITH OUTBREAK AND WANT TO NOTE OUTBREAK)

	YES	NO	UNKNOWN
Cough	☐	☐	☐
Paroxysmal cough	☐	☐	☐
Whoop	☐	☐	☐
Posttussive vomiting	☐	☐	☐
Apnea	☐	☐	☐

COUGH ONSET DATE (MONTH/DAY/YEAR)

FINAL INTERVIEW DATE (MONTH/DAY/YEAR)

COUGH AT FINAL INTERVIEW ☐ YES ☐ NO ☐ UNKNOWN

DURATION OF COUGH AT FINAL INTERVIEW (DAYS)

COMPLICATIONS

CHEST X-RAY FOR PNEUMONIA ☐ POSITIVE ☐ NEGATIVE ☐ NOT DONE ☐ UNKNOWN

DIED ☐ YES ☐ NO ☐ UNKNOWN

	YES	NO	UNKNOWN
Seizures due to pertussis	☐	☐	☐
Acute encephalopathy due to pertussis	☐	☐	☐
Hospitalized due to pertussis	☐	☐	☐

IF HOSPITALIZED, DAYS HOSPITALIZED

COUGH AT FINAL INTERVIEW ☐ YES ☐ NO ☐ UNKNOWN

TREATMENT

WERE ANTIBIOTICS GIVEN? ☐ YES ☐ NO ☐ UNKNOWN

DATE STARTED 1ST ANTIBIOTIC (MONTH/DAY/YEAR)

NUMBER OF DAYS 1ST ANTIBIOTIC ACTUALLY TAKEN

FIRST ANTIBIOTIC RECEIVED
☐ ERTYHROMYCIN (INCL. PEDIAZOLE, ILOSONE) ☐ TETRACYCLINE / DOXYCYCLINE ☐ UNKNOWN
☐ COTRIMOXAZOLE (BACTRIM / SEPTRA) ☐ AMOXICILLIN / PENICILLIN / AMPICILLIN / AUGMENTIN / CECLOR / CEFIXIME
☐ CLARITHROMYCIN / AZITHROMYCIN ☐ OTHER

DATE STARTED 2ND ANTIBIOTIC (MONTH/DAY/YEAR)

NUMBER OF DAYS 2ND ANTIBIOTIC ACTUALLY TAKEN

SECOND ANTIBIOTIC RECEIVED
☐ ERTYHROMYCIN (INCL. PEDIAZOLE, ILOSONE) ☐ TETRACYCLINE / DOXYCYCLINE ☐ UNKNOWN
☐ COTRIMOXAZOLE (BACTRIM / SEPTRA) ☐ AMOXICILLIN / PENICILLIN / AMPICILLIN / AUGMENTIN / CECLOR / CEFIXIME
☐ CLARITHROMYCIN / AZITHROMYCIN ☐ OTHER

LABORATORY

WAS LABORATORY TESTING FOR PERTUSSIS DONE ☐ YES ☐ NO ☐ UNKNOWN

	DATE SPECIMEN COLLECTED (MONTH/DAY/YEAR)	RESULT
Culture		
DFA		
PCR		
Serology (1st specimen)		
Serology (2nd specimen)		

IS CASE LABORATORY-CONFIRMED? ☐ YES ☐ NO

RESULT CODE
P POSITIVE
N NEGATIVE
I INDETERMINATE
E PENDING
X NOT DONE
S PARAPERTUSSIS

NOTE: Serology result is based on either single sample or combined result from acute and convalescent samples.

MO 580-0813 (10-02) IMMP-25

VACCINE HISTORY (COMPLETE ONLY FOR CHILDREN AGED < 15 YEARS)

VACCINATED? (HAS EVER RECEIVED ANY DOSES OF DIPHTHERIA, TETANUS AND/OR PERTUSSIS-CONTAINING VACCINES)

☐ YES ☐ NO ☐ UNKNOWN

DATE OF LAST PERTUSSIS-CONTAINING VACCINE PRIOR TO ILLNESS ONSET (MONTH/DAY/YEAR)

RECORD TYPE AND MFG FOR EACH DOSE (UNLIKELY TO BE AVAILABLE IF PATIENT BORN BEFORE 1989)

VACCINATION DATE (MONTH/DAY/YEAR)	VACCINE TYPE	VACCINE MANUFACTURER
1.		
2.		
3.		
4.		
5.		
6.		

TYPE CODES

W DTP WHOLE CELL
A DTaP
D DT OR Td
T DTP-Hib Tetramune
P Pertussis only
O Other
U Unknown

MANUFACTURER CODES

C Connaught
L Lederle
M Massachusetts Health Department
I Michigan Health Department
O Other
U Unknown

NUMBER OF DOSES OF PERTUSSIS-CONTAINING VACCINE PRIOR TO ILLNESS ONSET

IF NOT VACCINATED WITH 3 DOSES OF PERTUSSIS VACCINE, REASON

☐ RELIGIOUS EXEMPTION
☐ MEDICAL CONTRAINDICATION
☐ PHILOSOPHICAL EXEMPTION
☐ PREVIOUS PERTUSSIS CONFIRMED BY CULTURE OR MD
☐ PARENTAL REFUSAL
☐ AGE < 7 MONTHS
☐ OTHER
☐ UNKNOWN

EPIDEMIOLOGY INFORMATION

DATE FIRST REPORTED TO A HEALTH DEPARTMENT (MONTH/DAY/YEAR)

DATE CASE INVESTIGATION STARTED (MONTH/DAY/YEAR)

EPI-LINKED

☐ YES ☐ NO ☐ UNKNOWN

OUTBREAK RELATED

☐ YES ☐ NO ☐ UNKNOWN

IF YES, OUTBREAK NAME (NAME OF OUTBREAK THIS CASE IS ASSOCIATED WITH)

TRANSMISSION SETTING (WHERE DID THIS CASE ACQUIRE PERTUSSIS?)

☐ DAY CARE
☐ SCHOOL
☐ DOCTOR'S OFFICE
☐ HOSPITAL WARD
☐ HOSPITAL ER
☐ HOSPITAL OUTPATIENT CLINIC
☐ HOME
☐ WORK
☐ UNKNOWN
☐ COLLEGE
☐ MILITARY
☐ CORRECTIONAL FACILITY
☐ CHURCH
☐ INTERNATIONAL TRAVEL
☐ OTHER

SETTING OUTSIDE OF HOUSEHOLD IN WHICH SECONDARY TRANSMISSION OF PERTUSSIS FROM THIS CASE OCCURRED

☐ DAY CARE
☐ SCHOOL
☐ DOCTOR'S OFFICE
☐ HOSPITAL WARD
☐ HOSPITAL ER
☐ HOSPITAL OUTPATIENT CLINIC
☐ MORE THAN ONE SETTING OUTSIDE HOUSEHOLD
☐ WORK
☐ UNKNOWN
☐ COLLEGE
☐ MILITARY
☐ CORRECTIONAL FACILITY
☐ CHURCH

CONTACTS (HOUSEHOLD AND OTHER)

NAME, ADDRESS AND PHONE	AGE	SEX	RELATION TO PATIENT	SIMILAR ILLNESS? ONSET DATE	DATE MEDICATION GIVEN	TYPE OF MEDICATION	DATE LABORATORY SPECIMEN COLLECTED	LABORATORY RESULTS

CONTACTS (HOUSEHOLD AND OTHER)

NAME, ADDRESS AND PHONE	AGE	SEX	RELATION TO PATIENT	SIMILAR ILLNESS? ONSET DATE	DATE MEDICATION GIVEN	TYPE OF MEDICATION	DATE LABORATORY SPECIMEN COLLECTED	LABORATORY RESULTS

NOTES

Age	Age of patient at cough onset in no. of years, months, weeks, or days.
Outbreak (Pertussis)	A cluster of ≥ 5 cases (at least one culture-confirmed) in space and time.
Paroxysmal cough	Sudden uncontrollable bursts or spells of coughing where one cough follows the next without a break for breath.
Whoop	High-pitched noise heard on breathing after a coughing spasm.
Posttussive vomiting	Vomiting that follows a paroxysm of coughing.
Apnea	Prolonged failure to take a breath which may occur either after a coughing spasm, or without prior coughing in an infant.
Final Interview date	Date of the last interview conducted with the patient or provider to obtain case information.
Cough at final interview	Was the patient still coughing at time of the final interview?
Duration of cough	The total number of days the patient has coughed by the time of the final interview. If cough duration is < 14 days at final interview when the case is reported, it is important to recontact the patient to establish whether the patient did cough for at least 14 days.
Seizures due to pertussis	Generalized or focal seizures due to pertussis.
Acute encephalopathy to pertussis	Acute illness of the brain manifesting as decreased level of consciousness (excluding post-seizures state) and reduced level of nervous system functioning. Seizures may or may not occur. Such patients are almost always hospitalized, and have undergone extensive evaluation. (This should be verified by a physician; it is usually mentioned in the hospital discharge summary.)
Died	If patient died from pertussis, verification with the physician is recommended.
Epi-linked	A case that has had close contact with a culture-confirmed case, with cough onset in the period from 30 days before to 30 days after cough onset in the culture-confirmed case, and the timing of the contact was compatible with the incubation period of pertussis (6-20 days).

COMMENTS

DATE CASE FIRST REPORTED TO STATE MONTH / DATE / YEAR	FORM COMPLETED BY	TELEPHONE ( )	DATE FORM COMPLETED MONTH / DATE / YEAR

MO 580-0813 (10-02) IMMP-25

Patient Response Script #1 - Frank T. Tahoma

This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to provide the investigator with as much information as possible to assist in their investigation.

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say 'I'm not sure' or 'I don't know.'*

Demographic Information

"Hello, my name is **Frank Tahoma**. I was born on **May 14th, 1990**, I'm **34 years old**. I'm **male** and identify as **White**, and I'm **non-Hispanic**. I live at **789 Summit Blvd** in **Lee's Summit**, Missouri, zip code **64002**. My phone number is **(555) 123-4567** if you need it."

Symptoms

"Well, let's see... it all started on **November 3rd**. I remember because it was a Sunday, and I was watching the Chiefs game with some friends at my place. I began to develop this **cough**—not too bad at first, just a tickle in my throat. I figured it was just a mild cold or maybe allergies acting up. You know how the weather can be this time of year.

But over the next couple of days, the **cough got much worse**. I started having these **severe coughing fits**. They'd come out of nowhere and were so intense that I'd struggle to catch my breath. It was actually pretty scary. Sometimes, during these episodes, I'd make this weird loud noise when I inhaled—I guess you'd call it a **'whoop'**? My wife thought it sounded unusual. It was pretty alarming.

After some of these coughing fits, I'd end up **vomiting**. That was really unpleasant and left me feeling drained. I didn't experience any **apnea**—I never stopped breathing or anything like that—but the coughing was exhausting. It was hard to sleep at night because the coughing would wake me up.

The **cough began on November 3rd** and lasted for about **eight days**. As of today, the **cough has finally subsided**. I'm not coughing anymore, which is a huge relief. I can finally get a good night's sleep."

Treatments

"On **November 5th**, which was a Tuesday, I decided to see my doctor, **Dr. Jane White**, because the cough was getting unbearable. I was a bit reluctant at first—I don't like going to the doctor unless it's serious—but my wife insisted. Dr. White took it seriously and ordered some tests—I think she said it was a **test for pertussis**. I was surprised when she mentioned **whooping cough**—I thought that was mostly something kids got.

She prescribed me **something**, which I started taking that same day. I took it for **seven days**, just as she instructed. The **antibiotics seemed to help**; after a couple of days, the coughing fits started to decrease significantly. I'm still feeling a bit tired, but overall much better."

Laboratory Testing

"The **PCR test** that Dr. White ordered was done on **November 4th**, I believe, and it came back **positive for pertussis**. I have to admit, I was a bit shocked. I didn't think adults could get whooping cough, especially since I've been vaccinated. Dr. White explained that the vaccine's effectiveness can decrease over time, which I didn't know."

Vaccine History

"I'm pretty diligent about keeping up with my vaccinations. My last **pertussis booster** was on **January 15th, 2020**. I had the full series as a child and got a booster four years ago. I guess immunity can wane over time? I'm not sure, but I thought I was protected. Maybe I need another booster."

Occupation and Work

"I work as a **software engineer** at **TechNova Solutions** in Kansas City. It's a decent-sized company with around 200 employees. When I started feeling sick, I decided to **work from home** to avoid spreading whatever I had to my colleagues. It's one of the perks of my job—we can work remotely when needed.

I informed our **HR department** about my diagnosis. They've been supportive and asked me to continue working remotely until I'm fully recovered. They've also notified other employees to be on the lookout for symptoms. I hope I didn't expose anyone before I started working from home."

Travel History

"I haven't traveled outside of Kansas City recently. No international travel or trips out of state. Just the usual commute to work and back home. Well, actually, I did attend a local concert downtown on **October 30th**. It was pretty crowded, lots of people packed together. I suppose I could have picked up something there, but I felt fine afterward."

Animal Exposure

"I don't have any **pets**, and I haven't been around animals lately. No visits to farms or zoos or anything like that. Although, now that I think about it, my neighbor's dog sometimes wanders into our yard, but I haven't had any direct contact with it."

Ill Contacts

"My **wife, Sarah**, started feeling sick around the same time I did—maybe even a day or two before me. She had a similar **cough and symptoms**. We're not sure who got sick first or where we might have caught it. Neither of us had been around anyone who was obviously ill.
We did have some friends over for the game on **November 3rd**. None of them have reported being sick, though. To my knowledge, **none of our friends or family members are sick**. We've been reaching out to people we were in contact with recently, just to be safe."

Additional Comments

"I'm feeling much better now, but it was a rough experience. The coughing fits were intense and really took a toll on me. I'm just glad the antibiotics helped and that I'm on the mend.
I'm a bit concerned about how I contracted **pertussis despite being vaccinated**. Should I get another **booster**? Also, is there a risk of spreading it even after the cough has stopped? Dr. White mentioned that I should be cautious for a while.
I'm worried about my **wife**, too. She's still experiencing some symptoms, and I'm encouraging her to see a doctor. She's a bit stubborn and doesn't like going to the doctor unless necessary. We're both trying to be cautious and avoid contact with others until we're sure we're not contagious.
Is there anything else I should be doing to prevent spreading this to others? Any advice would be appreciated. Should I notify anyone else? I'm not sure what the protocol is in this situation."

Note to Self

- Remind **Sarah** to schedule a doctor's appointment.
- Check with **HR** about any additional precautions at work.
- Consider getting a **pertussis booster** if recommended.
- Continue practicing good hygiene and avoid close contact with others until fully recovered.
- Follow up with friends who were over on **November 3rd** to make sure they're not showing symptoms.

Please review this script to ensure all information is accurate. Providing detailed and accurate information will assist the investigator in their efforts.

Patient Response Script #2 - Tina M. Bordetella

This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to provide the investigator with as much information as possible to assist in their investigation.
*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say 'I'm not sure' or 'I don't know.'*

Demographic Information

"Hello, my name is **Tina... Tina Bordetella**. I was born on **August 22nd, 1985**, so I'm... let's see... **39 years old**? Yes, 39. I'm **female** and identify as **White**, **non-Hispanic**. I live at **123 Lakeview Lane** in **Lee's Summit**, Missouri, zip code **64068**. Do you need my phone number too? It's **(555) 987-6543**."

Symptoms

"Well, it's been a bit of a blur, honestly. It all started around **November 5th**, I think. I began noticing this persistent **cough** that seemed to come out of nowhere. At first, I didn't think much of it—maybe just a minor cold or seasonal allergies. You know how it is this time of year. But the **cough quickly worsened** over the next couple of days.

I started experiencing these severe **coughing fits**?. These episodes were intense and would leave me gasping for air. After some of these coughing spells, I would even **vomit**, which was both exhausting and alarming. There were also moments when I felt like I... well, like I stopped breathing altogether—I've since found out that's called **apnea**.

I didn't notice any 'whooping' sound during my coughs, at least I don't think so. But the episodes were debilitating. As of today, I'm still **coughing**, and it's been about **six days** since the cough began."

Complications

"Due to the severity of my symptoms, I visited my doctor, **Dr. Jeoffrey Harris**, on **November 6th**. He was concerned and ordered a **chest X-ray** to rule out pneumonia—it came back **negative**, thankfully.

However, because my breathing was bad during the coughing fits, Dr. Harris decided to admit me to the **hospital** for observation. I was hospitalized for **three days**, from **November 6th** to

November 9th. The medical team monitored my condition closely during that time. It was a bit scary—I've never been hospitalized before. Do you think that was necessary?"

Treatment

"Dr. Harris started me on **antibiotics** immediately. I was prescribed... um, let me check the name... **Erythromycin**, which I began taking on **November 6th**. I took the antibiotics for **five days** as instructed. I'm hopeful that this will help me recover more quickly. But I'm still coughing—is that normal? Should I have taken them for longer?"

Vaccine History

"I've always been diligent about vaccinations, or at least I thought I was. **I have all the vaccines for pertussis, or so I think**. Should I have gotten another booster? How often are we supposed to get them?"

Occupation and Exposure

"I'm a **daycare worker** at **Little Sprouts Daycare** here in Lee's Summit. I work primarily with **toddlers**. In hindsight, a few of the kids had been **coughing** lately, but I didn't think it was anything serious—kids get colds all the time. Should I have been more cautious? Could I have caught it from them?

I informed my **employer** about my diagnosis. They're taking necessary precautions, including notifying parents and monitoring the children for symptoms. I've been instructed to **stay home until I'm fully recovered** to prevent any further spread. But I'm worried—could I have been the one who brought it into the daycare? Or did I catch it from one of the kids? It's all very unsettling."

Ill Contacts

"My **husband, Juan**, is **39 years old**. So far, he hasn't shown any symptoms, which is a relief. We're trying to be cautious at home—I've been isolating myself as much as possible and practicing good hygiene. But is that enough? Should he get tested just in case?

I'm particularly worried about the **children at the daycare** and my **coworkers**. I hope none of them become ill because of me. I would feel terrible if I unknowingly spread this to them. Should I reach out to the parents directly, or let the daycare handle it?"

Travel History

"I haven't traveled anywhere recently. I've been staying local, just commuting between home and work. Wait, actually, I did visit my sister in **Springfield** about a month ago, but that was weeks before I got sick. Do you think that could be related? I'm not sure if there's been any pertussis cases there."

Additional Comments

"This experience has been quite overwhelming and a bit frightening. The coughing fits are exhausting, and the episodes of apnea are particularly scary. I'm concerned about how I contracted **pertussis despite being vaccinated**. Is there something else I should have done to prevent this?

Is there anything more I can do to protect myself and others in the future? Also, when would it be safe for me to **return to work**? I don't want to risk infecting the children or my colleagues. Should I be doing anything else to prevent spreading it? Wearing a mask when I go out, perhaps? Any guidance you can provide would be greatly appreciated. I'm just feeling a bit lost and unsure of what steps to take next. It's all very confusing."

Note to Self

- **Rest** and follow the treatment plan as prescribed by **Dr. Harris**.
- Maintain open communication with my **employer** about my recovery progress.
- Monitor **Juan** for any symptoms and encourage him to seek medical advice if necessary.
- Stay informed about **pertussis prevention** and consider discussing **booster vaccinations** with my doctor.
- Maybe reach out to the parents at the daycare to express my concerns?
- Research more about pertussis in adults to better understand what's happening.

Please review this script to ensure all information is accurate. Providing detailed and accurate information will assist the investigator in their efforts.

Patient Response Script #3 - Sarah N. Pertusson

This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to provide the investigator with as much information as possible to assist in their investigation.

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say 'I'm not sure' or 'I don't know.'*

Demographic Information

"Hi there! My name is **Sarah N. Pertusson**, but you can call me Sarah. I was born on **November 3rd, 2003**, so that makes me **21 years young**! I'm **female** and identify as **Asian/Pacific Islander**, and I'm **non-Hispanic**. I live at **456 Elm Street** in **Kansas City**, Missouri, zip code **64108**. It's a lovely neighborhood with the best coffee shop just around the corner!"

Symptoms

"Well, let's see... it all started on **November 8th**. I woke up that morning with a bit of a tickle in my throat. I thought maybe I sang too much at karaoke night—you should hear my rendition of 'Bohemian Rhapsody'! Freddy Mercury would be proud. But as the day went on, the **cough** got worse. I thought, 'Uh-oh, here comes a cold.'

But over the next couple of days, the **cough** became a real nuisance. I'd be in the middle of a conversation and suddenly have these intense **coughing episodes**. They'd come out of nowhere! One minute I'm fine, the next I'm coughing like I've swallowed a bug. It was so embarrassing! Sometimes, the coughing was so bad I'd have trouble catching my breath. A few times, I even ended up **throwing up** afterward—definitely not a fun experience. There were moments when I felt like I couldn't breathe properly, which was a bit scary. I didn't notice any weird 'whooping' sounds or anything like that, but the coughing was really tiring me out.

As of today, **November 11th**, I'm still **coughing**, and it's been about **three days** since it started getting really bad. But hey, at least my abs are getting a workout from all the coughing!"

Treatments

"I decided to visit my doctor, **Dr. Mary Green**, on **November 9th** because I was starting to feel like a walking cough machine. She was super nice and took good care of me. She prescribed me some antibiotics. I don’t know what they were called. I think it was something-myocin? Or maybe… I don’t know, but I started taking it that same day. I've been taking it for **five days now**, just like she told me.

I'm really hoping the antibiotics kick in soon because I'd love to get back to my usual bubbly self. So far, the cough hasn't improved much, but I'm staying positive! Maybe I need to bribe my immune system with some chocolate."

Vaccine History

"I've always been good about keeping up with my vaccinations—my mom made sure of that! My last **pertussis vaccine** was on **ugh… I don't know actually. Probably when I was a baby?** I've I didn't realize the vaccine's effectiveness could wear off over time. Guess it's time for a booster, huh?"

Occupation and Activities

"So, I'm currently a **junior at the University of Missouri-Kansas City**, majoring in **microbiology**. Science nerd alert! I also work part-time at a local coffee shop downtown—best lattes in the city, if I do say so myself.

At school, I spend a lot of time in the lab and attend lectures with large groups of students. I haven't noticed anyone coughing up a storm like me, though. At work, we interact with so many customers every day, but I always try to maintain good hygiene—washing my hands frequently and sanitizing surfaces. You can never be too careful, right?"

Travel History

"I haven't traveled out of state recently. The last trip I took was to **Dallas, Texas**, for a research conference from **October 24th to 27th**. It was amazing! So many smart people in one place—I was geeking out the whole time. There were a lot of people there, and we attended several seminars and workshops.

Since then, I've just been around campus and home. I use **public transportation** to get around—mainly buses. It's convenient, but I guess it's also a place where germs like to hang out."

Ill Contacts

"My younger sister, **Emily**, who is **19 years old**, started feeling sick around the same time I did. We share an apartment near campus—sister bonding time! She's experiencing similar symptoms—**coughing fits** and nausea. Poor thing, she's missing out on our weekly movie nights.

Some of my classmates have mentioned feeling under the weather, but I don't know if they're experiencing the same symptoms. No one else at work has reported being sick, at least not that I've heard. Maybe I should start a 'Cough Club'!"

Additional Comments

"This whole situation has been a bit of a bummer. The coughing fits are not only physically draining but also disrupting my daily life. I'm worried about missing important classes and falling behind on my coursework. Organic chemistry waits for no one!

I'm also concerned about possibly having spread this to others without knowing. Should I notify my school and workplace about my diagnosis? Is there anything specific I should do to prevent further spread? I'm all about being responsible.

I didn't expect to get **pertussis** at my age, especially being vaccinated. Should I consider getting a **booster shot** in the future? Maybe I can turn this into a learning experience for my microbiology class!"

Note to Self

- **Continue taking antibiotics** as prescribed.
- Encourage **Emily** to visit the doctor for evaluation.
- **Inform my professors and employer** about my illness.
- Practice good hygiene and possibly **wear a mask** to prevent spreading germs.
- Research more about adult pertussis and **vaccination recommendations**.
- Stock up on tea and honey—my throat's new best friends!

Please review this script to ensure all information is accurate. Providing detailed and accurate information will assist the investigator in their efforts.

Patient Response Script #4 - Nathaniel R. Bordetti

This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to provide the investigator with as much information as possible to assist in their investigation.

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say 'I'm not sure' or 'I don't know.'*

Demographic Information

"Yeah, whatever. My name is **Nathaniel R. Bordetti**. I was born on **June 14th, 1992**, so that makes me **32 years old**, I guess. I'm a **male**, **African American**, and **non-Hispanic**. I live at **321 River Road** in **Lone Jack**, Missouri, zip code **64050**. Do you really need all this again?"

Symptoms

"Fine, let's get this over with. Sometime last week—maybe **Thursday or Friday**, I can't remember—I started getting this **annoying cough**. At first, I thought it was just a cold or the weather changing. No big deal.

But then, over the next few days, the cough got **much worse**. I'd be at work, and suddenly I'd have these **massive coughing fits**. They'd hit me out of nowhere, and I'd be left gasping for air. A couple of times, I even **threw up** because I was coughing so hard. There were moments when I felt like I couldn't breathe at all, like someone was squeezing my throat.

I didn't notice any weird sounds when I coughed—just that it was relentless and **exhausting**. As of today, I'm still **coughing**, and it's been, what, **four or five days** since it got really bad. Happy now?"

Treatments

"My wife nagged me into seeing a doctor, so I went to **Dr. Sarah Green** at some clinic on Health Street on **Saturday**. She did some tests—I don't know what they were called—and said I had **whooping cough**. I mean seriously? Isn't that a baby disease?

She gave me a prescription for some **antibiotic**—let me see—it's called **Erythromycin** or something. I started taking it the same day. Been taking it as told, but I don't feel a whole lot better yet."

Vaccine History

"I thought I was up to date on vaccines. Last time I got a poke was maybe **a few years ago**, possibly **in 2019**. Probably for tetanus or something like that. Don't they combine vaccines these

days? I didn't think adults could get **whooping cough** if they'd been vaccinated. What's the point then?"

Occupation and Activities

"I work construction for **JC Construction Company**. We're on a big project downtown. Tight crew, close quarters—it's construction, what do you expect?

I haven't taken any time off because if I don't work, I don't get paid. I've got bills to pay, mouths to feed. But now you're telling me I might be **contagious**? Great. Just great."

Travel History

"Haven't gone anywhere. No trips, no vacations, nothing. Just been around **Blue Springs** and nearby for work. So unless I caught this from someone at the grocery store, I have no clue."

Ill Contacts

"My **wife, Maria**, who's **30 years old**, started feeling sick around the same time I did. She's got the cough and everything. We live together, so maybe we both caught it from somewhere. None of my coworkers have mentioned being sick, but I haven't asked. Not my problem."

Additional Comments

"Look, this is a real hassle. I'm coughing my lungs out, can't sleep, and now I'm supposed to worry about spreading it to others? I don't even know how I got it.

What am I supposed to do to **get better faster**? Should I **stay home from work**? For how long? I can't afford that. How long am I **contagious**? Is there anything else I need to do?

And seriously, what's the deal with the vaccine? If I got vaccinated and still got sick, then what's the point? Can you explain that?"

Note to Self

- Keep taking the **antibiotics** as prescribed.
- Tell **Maria** to see a doctor.
- Talk to my boss about possibly taking sick leave, though I doubt that'll go over well.
- Try not to cough on people—maybe wear a mask or something.
- Figure out if I need another **vaccine** or whatever to prevent this nonsense in the future.

Please review this script to ensure all information is accurate. Providing detailed and accurate information will assist the investigator in their efforts.

Patient Response Script #5 - Samantha S. Smith

This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to provide as much information as possible to assist in the investigation.

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say "I'm not sure" or "I don't know."*

Demographic Information

"Hello there! I'm **Samantha Smith**, but you can call me Sam. Or was it Sammy? Either works! I was born on **April 2nd... um, 1998**, so that makes me **26 years old**, I think? Time flies! I'm **female**, identify as **White**, and I'm definitely **non-Hispanic**. I live at **234 Oakwood Drive** in **Lee's Summit**, Missouri. The zip code? Oh gosh, numbers aren't my strong suit... I believe it's **64086**. Or was it 64806? No, no, pretty sure it's 64086."

Symptoms

"Well, where do I even begin? Everything started... hmm... was it last week or the week before? Wait, no, it was after Halloween because I remember eating leftover candy. So, let's say around **November 5th**? Yes, that's right. I began noticing this **cough**. Not like my usual throat tickle when I yell at the TV. This was different.

At first, I thought maybe it was the new incense sticks I got—jasmine can be pretty strong, you know? But the cough **got bad** over the next day or two. By... oh, maybe **November 6th** or 7th, I was having these **severe coughing fits**. They'd just come out of nowhere! I'd be watering my plants or talking to my cat, and boom—coughing like there's no tomorrow.

Sometimes, I'd cough so hard I'd end up **throwing up**. Not my finest moments. There were also times when I felt like I couldn't breathe properly, almost like brief episodes of... what's the word... when you stop breathing? **Apnea**? Yeah, I think that's it. It was pretty scary, to be honest. I didn't notice any weird 'whooping' sounds during the coughs, but the episodes left me feeling drained and a bit anxious. As of today—which is... hold on, let me check my calendar... I'm still **coughing**, and it's been about **six days** since all this craziness began."

Treatments

"So, on... um... I think it was a **Thursday**, I decided to see my doctor, **Dr. Emily Johnson**. Or was it Wednesday? Either way, the cough was becoming unbearable. She was super nice and did some tests—stuck a swab up my nose, which tickled! She mentioned something about **whooping cough**, which surprised me. Isn't that a kid's disease?

She gave me a prescription for... oh dear, what's it called? I have the bottle here somewhere. *[Rustling sounds]* Ah, here it is! **Az-Ith-Ro-My-Cin**. I've been taking it for **five days now**, just

like she told me. I'm really hoping it kicks in soon because I'm tired of sounding like a broken engine.

Dr. Johnson also told me to **rest and stay hydrated**. I've been drinking lots of herbal tea—chamomile, peppermint, you name it. Though I did sneak in a cup of coffee or two. Can't function without my caffeine fix!"

Vaccine History

"I'm pretty good about keeping up with my shots. Needles don't scare me—well, maybe a little. My last **pertussis booster** was on... hmm... I think it was **December 1st, 2021**. Or was it 2020? No, 2021 sounds right because it was before that big snowstorm. I've had the full series as a child and keep up with the recommended boosters.

Occupation and Activities

"I'm a **nurse** at **St. Mary's Hospital** in Blue Springs. I work primarily in the **pediatric unit**, so I'm around kids all the time. They're adorable but can be little germ factories! We follow strict hygiene protocols—handwashing, wearing masks, sanitizing equipment—the whole nine yards. As soon as I found out about my diagnosis, I told my supervisor and the hospital's infection control team. They've asked me to **stay home until I'm fully recovered** and cleared to return to work. I'm really worried that I might have exposed patients or colleagues before I knew I was sick. I mean, what if little Timmy catches this because of me? I'd feel terrible."

Travel History

"Travel? Let's see... I haven't been on any grand adventures lately. No international trips or out-of-state travel—just my daily commute from home to the hospital. Though, sometimes I take the scenic route through the park if that counts. Oh! Wait, I did go to the farmer's market two weekends ago. Bought some lovely honey and lavender. But I doubt that's relevant."

Ill Contacts

"My husband, **John**, who's **30 years old**, started feeling unwell a couple of days after I did. He's been coughing too—persistent coughing and occasional difficulty breathing. I'm worried he might have caught **pertussis** from me. Or maybe I got it from him? Chicken or the egg, right?

At work, I haven't heard of any coworkers exhibiting similar symptoms. But given the nature of our job, it's possible someone was asymptomatic or thought they just had a common cold. Should I be warning them? Sending out smoke signals?"

Additional Comments

"This whole experience has been overwhelming and, honestly, a bit surreal. The coughing fits make it hard to sleep or do anything productive. I've been binge-watching shows, but even that's getting old.

I'm particularly anxious about the potential risk I posed to my patients, especially since I work with vulnerable children. Is there anything more I should be doing to facilitate my recovery or prevent spreading the infection to others? How long am I considered **contagious**? Should I notify anyone else besides my workplace? Maybe send out a public service announcement?

I'm also curious about how I contracted **pertussis** despite being vaccinated. Should I consider getting another **booster** sooner than recommended? Maybe there's a secret vaccine club I need to join."

Note to Self

- **Continue taking antibiotics** as prescribed—don't miss any doses.
- Encourage **John** to visit **Dr. Johnson** for evaluation and possible treatment.
- Get plenty of **rest and stay hydrated** to support recovery.
- Maintain open communication with my **supervisor** and follow hospital guidelines for returning to work.
- Research **pertussis in adults** and discuss with my doctor whether additional preventive measures are needed in the future.
- Maybe start a journal about this experience—could make for an interesting story!
- Remember to feed the cat—can't forget Mr. Whiskers!

Please review this script to ensure all information is accurate. Providing detailed information will assist in the investigation.

Patient Response Script #6 - Roberto P. Morbus

This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to provide as much information as possible to assist in the investigation.

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say "I'm not sure" or "I don't know."*

Demographic Information

"Hey, what's up? I'm **Roberto P. Morbus**, but you can call me Rob. I was born on... uh, let's see... **August 15th, 1995**, so that makes me **29 years old**, right? Time flies! I'm a **male**, identify as **African American**, and I'm **non-Hispanic**. I live at **678 Parkview Road** in **Lee's Summit**, Missouri. The zip code? Hmm... I think it's **64112**. Yeah, that's it. It's a cool spot near the park. Great for morning runs—well, when I'm not feeling like a zombie."

Symptoms

"So, here's the scoop. Lately, things have been a bit... strange. I think it was over the weekend—maybe **Saturday night**? Or was it **Sunday morning**? Honestly, my days have been blending together. Anyway, I started getting this **nagging cough**. At first, I thought it was allergies or maybe the incense my neighbor burns—it smells like old socks sometimes.

But then the cough decided to throw a party in my lungs. Out of nowhere, I'd have these **massive coughing fits**. Like, I'd be chilling on the couch watching reruns of 'The Twilight Zone', and suddenly I'm coughing so hard I see stars. Felt like my lungs were trying to escape or something. A few times, I coughed so hard I actually **threw up**. Not exactly my finest moment. And there were these weird moments where I felt like I couldn't breathe at all, like someone hit the pause button on my lungs. Scary stuff.

I didn't notice any funky sounds when I coughed—no whistles or whoops or anything. But after these episodes, I'd be wiped out, like I'd run a marathon. As of today—which, by the way, what day is it? **November 11th**? Yeah—I'm still **coughing**, and it's been... hmm... about **three or four days** since things got really weird."

Treatments

"So, I figured I should probably see a doctor before I coughed up a lung. I went to **Dr. Thomas Long** over at the clinic on... uh... **Wellness Drive**? Yeah, that's the one. This was on... maybe **Monday**? Or was it **Tuesday**? No, definitely **November 10th**. He asked me a bunch of questions, poked and prodded.

He said it might be **whooping cough**, which threw me for a loop. I thought only kids got that! He did some tests—swabbed my nose or throat, can't remember which. Not the most pleasant experience.

He gave me a prescription for some **antibiotics**. Can't recall the name—starts with an 'E' maybe, I think? I've been taking them as he said, for about **five days now**. No crazy side effects, unless you count the weird dreams. But the cough hasn't really let up yet. Maybe it takes time?"

Vaccine History

"Vaccines, right... I'm usually good about that stuff. My last **pertussis shot**? Hmm... let me think. I remember getting a bunch of shots before that trip to... where was it... oh, wait, I didn't end up going on that trip. But I did get a booster maybe in **2018**? Sounds about right. I've had **four doses** over the years, I think.

Didn't realize they wear off. Should I be getting another one? Maybe there's a super-vaccine I can get?"

Occupation and Activities

"So, I work as a **bartender** at **The Silver Spoon** downtown. You should drop by sometime—great vibes, even better drinks. It's a popular spot, especially when the Chiefs are playing. I love it—mixing drinks, chatting with folks from all walks of life. Though, sometimes people tell me the strangest things after a few cocktails.

Behind the bar, we're all up in each other's space—it's part of the gig. We try to keep things clean—wash our hands, wipe down the counters—but when it's busy, it's like a whirlwind.

Since I started feeling off, I've been worried about maybe spreading this to customers or my crew. I haven't been to work since... uh... I think **November 10th**? I called my manager, **Steve**, and gave him the lowdown. He wasn't thrilled—who would be? But health comes first, right? I told him to maybe keep an eye on things at the bar, just in case."

Travel History

"Travel? Let's see... I haven't left **Kansas City** in ages. No jet-setting for me. My routine is pretty much home, work, maybe a friend's place now and then. Oh! Wait, I did go to that antique book fair a few weeks back. But that was over in Blue Springs."

Animal Exposure

"No pets at home, though I've been thinking about getting a hedgehog. They seem cool, don't they? I haven't been around animals much. Unless you count the pigeons in the park—they get a

bit too friendly sometimes. Oh, and I went to a friend's barbecue a couple of weeks ago. They have a cat named Sir Purrsalot. Cute guy, but I didn't really interact with him."

Ill Contacts

"My girlfriend, **Marie**, who's **30**—she's amazing, by the way—started feeling under the weather around the same time I did. She's got the cough and everything. She's a teacher at a local elementary school, so she's around kids all day. Little germ magnets, those kiddos.
Maybe she brought something home? Or maybe I gave it to her? It's like the chicken and the egg, right? She's planning to see **Dr. Long** tomorrow. Fingers crossed it's nothing serious."

Additional Comments

"This whole thing has been a trip. The coughing fits are no joke, and not being able to breathe properly is downright terrifying. Sleep? What's that? I've been binge-watching shows to distract myself, but it's hard when you're hacking up a lung every few minutes.
I'm worried about Marie and want to make sure she gets better. Also, I feel bad if I've unknowingly spread this to others. Should I be notifying anyone else besides work? Is there a list or something?
I didn't think adults could get **whooping cough** like this, especially after being vaccinated. Should I be looking into another **booster shot** once this is all over? Is there a way to supercharge my immune system?
Also, how long am I **contagious**? I don't want to be the guy who started a coughing epidemic. Any advice or info you can share would be awesome."

Note to Self

- **Keep taking the antibiotics** as prescribed—don't skip doses.
- Encourage **Marie** to see **Dr. White** for evaluation and possible treatment.
- **Rest up** and stay hydrated—maybe try some herbal teas? Chamomile sounds nice.
- Contact **Steve** at **The Silver Spoon** to update him on my condition and discuss when it might be safe to return to work.
- Reach out to **coworkers** to see if anyone else is feeling sick—suggest they get checked out if they are.

- Practice good hygiene at home—**cover my mouth when coughing**, wash hands frequently, maybe wear a mask to protect Marie.
- Look into getting a **pertussis booster** in the future if recommended by Dr. White.
- Research more about **pertussis in adults** to better understand what's going on.
- Consider starting that hedgehog fund—they might be good luck!

Please review this script to ensure all information is accurate. Providing detailed information will assist in the investigation.

2.4 PDD Activity - Legionella Patient Scripts and Case Reports

Patient's Name (Last, First, MI): _____ Phone: _____ Hospital: _____

Address (Number, Street, Apt No., City, State, ZIP): _____

Patient Chart No.: _____ ***PATIENT IDENTIFIER INFORMATION IS NOT TRANSMITTED TO CDC***

National Center for Immunization and Respiratory Diseases

Form Approved
OMB No. 0920-0728

LEGIONELLOSIS CASE REPORT

(DISEASE CAUSED BY ANY *LEGIONELLA* SPECIES)

U.S. Department of Health and and Human Services
Centers for Disease Control and Prevention (CDC), Atlanta, Georgia 30329
https://www.cdc.gov/legionella/index.html

CDC Use Only
Case No.:

1. State health dept. case no.:	2. Reporting state:	3. City of residence:	4. County of residence:	5. State of residence:

6. Industry:	7. Occupation:	8a. Date of birth (mm/dd/yyyy):	8b. Age:	9. Sex:
			○ Days ○ Months ○ Years	○ Male ○ Female ○ Unknown

10. Ethnicity:
- ○ Hispanic/Latino
- ○ Not Hispanic/Latino
- ○ Unknown

11. Race (check all that apply):
- ☐ American Indian/ Alaskan Native
- ☐ Asian
- ☐ Black or African American
- ☐ Native Hawaiian or other Pacific Islander
- ☐ White
- ☐ Unknown

12. Diagnosis:
- ○ Legionnaires' disease (pneumonia, clinical or X-ray diagnosed)
- ○ Pontiac fever (fever and myalgia without pneumonia)
- ○ Extrapulmonary legionellosis (specify location): _____

13. Date of symptom onset of legionellosis (mm/dd/yyyy): _____

14. Date of first report to public health at any level (mm/dd/yyyy): _____

15. Was the patient hospitalized during treatment for legionellosis?
- ○ Yes
- ○ No
- ○ Unknown

If yes, date of admission (mm/dd/yyyy): _____
Hospital name: _____
City, state: _____

16. Outcome of illness:
- ○ Survived
- ○ Died
- ○ Still ill
- ○ Unknown

17. In the 14 days before onset, did the patient spend any nights away from home (excluding healthcare settings)?
○ Yes ○ No ○ Unknown

If yes, please complete the following information:

Name of accomodation 1: _____
Street address: _____ Room number: _____
City: _____ State: _____ ZIP: _____
Country: _____ Date of arrival: _____ Date of departure: _____
Comments about travel:

Name of accommodation 2: _____
Street address: _____ Room number: _____
City: _____ State: _____ ZIP: _____
Country: _____ Date of arrival: _____ Date of departure: _____
Comments about travel:

*To add additional accommodations, see page 7.

18. In the 14 days before onset, did the patient visit or stay in a healthcare setting (e.g., hospital, long-term care/rehab/skilled nursing facility, clinic)?
○ Yes ○ No ○ Unknown

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If yes, please complete the following information:

Name of healthcare facility 1:

Type of healthcare setting/facility:
○ Hospital ○ Other, specify:
○ Long-term care
○ Clinic
○ Unknown

Type of exposure:
○ Inpatient ○ Unknown
○ Outpatient ○ Other, specify:
○ Visitor or volunteer
○ Employee

Is this facility also a transplant center?
○ Yes
○ No
○ Unknown

Street address: City:

State: ZIP: Reason for visit:

Date of arrival: Date of departure: Did the healthcare facility have in place a water management program to reduce the risk of *Legionella* growth and spread? ○ Yes ○ No ○ Unknown

Comments about healthcare facility:

Name of healthcare facility 2:

Type of healthcare setting/facility:
○ Hospital ○ Other, specify:
○ Long-term care
○ Clinic
○ Unknown

Type of exposure:
○ Inpatient ○ Unknown
○ Outpatient ○ Other, specify:
○ Visitor or volunteer
○ Employee

Is this facility also a transplant center?
○ Yes
○ No
○ Unknown

Street address: City:

State: ZIP: Reason for visit:

Date of arrival: Date of departure: Did the healthcare facility have in place a water management program to reduce the risk of *Legionella* growth and spread? ○ Yes ○ No ○ Unknown

Comments about healthcare facility:

***To add additional healthcare facilities, see page 7.**

19. Was this case associated with a healthcare exposure?
○ **Presumptive:** Patient had 10 or more days of continuous stay at a healthcare facility during the 14 days before onset of symptoms
○ **Possible:** Patient had exposure to a healthcare facility for a portion of the entire 14 days prior to onset
○ **No:** No exposure to a healthcare facility in the 14 days prior to onset
○ Unknown

20. In the 14 days before onset, did the patient visit or stay in an assisted living facility or senior living facility? Assisted/senior living facilities do not provide skilled nursing or medical care.
○ Yes ○ No ○ Unknown

If yes, please complete the following information:

Type of setting/facility: ○ Assisted living facility ○ Senior living facility ○ Unknown

Name of assisted/senior living facility 1:

Type of exposure: ○ Resident ○ Visitor or volunteer ○ Employee ○ Other, specify: ○ Unknown

Street address:

City: State: ZIP:

Date of arrival: Date of departure: Did the assisted/senior living facility have in place a water management program to reduce the risk of *Legionella* growth and spread? ○ Yes ○ No ○ Unknown

Comments about assisted or senior living facility:

21. Was this case associated with an assisted or senior living facility?
○ **Presumptive:** Patient had 10 or more days of continuous stay at an assisted/senior living facility during the 14 days before onset of symptoms
○ **Possible:** Patient had exposure to an assisted/senior living facility for a portion of the entire 14 days prior to onset
○ **No:** No exposure to an assisted/senior living facility in the 14 days prior to onset
○ Unknown

22. Was this case associated with a known outbreak or possible cluster?
○ Yes ○ No ○ Unknown

If yes, specify name of facility, city, and state of outbreak:

Name of facility:

City: State:

23. If this case was associated with an outbreak reported to NORS (National Outbreak Reporting System), what is the CDC-assigned NORS outbreak ID?

24. Laboratory diagnostic tests:

Tests	Date collected (mm/dd/yyyy)	Specimen type	Results
Urinary antigen test (UAT)		Urine	○ Positive ○ Indeterminant ○ Negative ○ Not performed ○ Unknown
Culture		○ Lower respiratory secretions (e.g., sputum, BAL) ○ Other, specify:	○ Positive ○ Indeterminant ○ Negative ○ Not performed ○ Unknown
Nucleic acid assay (e.g., PCR)		○ Lower respiratory secretions (e.g., sputum, BAL) ○ Other, specify:	○ Positive ○ Indeterminant ○ Negative ○ Not performed ○ Unknown
Direct fluorescent antibody (DFA) or immunohistochemistry (IHC)		○ Lower respiratory secretions (e.g., sputum, BAL) ○ Other, specify:	○ Positive ○ Indeterminant ○ Negative ○ Not performed ○ Unknown

25. If culture, nucleic acid assay (e.g., PCR), or DFA/IHC were performed, specify species and/or serogroup identified:

Species: _____ Serogroup: _____

26. Serologic tests:

Antibody titer test	Date collected (mm/dd/yyyy)	Quantitative titer value	Results
Antibody titer to *Legionella pneumophila* serogroup 1	Acute: _____ Convalescent: _____	Acute: _____ Convalescent: _____	○ Positive (4x or greater rise in titer) ○ Indeterminant ○ Negative ○ Not performed ○ Unknown
Antibody titer OTHER THAN *Legionella pneumophila* serogroup 1 or to multiple species or serogroups of *Legionella* using pooled antigen	Acute: _____ Convalescent: _____	Acute: _____ Convalescent: _____	○ Positive (4x or greater rise in titer) ○ Indeterminant ○ Negative ○ Not performed ○ Unknown

27. Was a specimen(s) sent to CDC for testing?

○ Yes
○ No
○ Unknown

Date specimen(s) sent to CDC for testing: _____

28. Case status:

○ Confirmed
○ Suspect
○ Probable
○ Not a case

If probable, indicate epidemiologic link: _____

29. In the 14 days before onset, was the patient exposed to any of the following? *If yes*, indicate location and dates.

Potential exposure(s)	Yes/No/Unknown	Location (facility name, city, state)	Date(s)
Shower away from home	○ Yes ○ No ○ Unknown		
In or near a Hot tub	○ Yes ○ No ○ Unknown		
Near a decorative water fountain or water feature	○ Yes ○ No ○ Unknown		
Near a mister	○ Yes ○ No ○ Unknown		
Near a sprinkler	○ Yes ○ No ○ Unknown		
Recreational water park	○ Yes ○ No ○ Unknown		
Near some other water aerosolizing device: _____	○ Yes ○ No ○ Unknown		
Attend a convention, reception, conference, or other public gathering	○ Yes ○ No ○ Unknown		
Visit or live in a congregate living facility (e.g., correctional facilities, shelters, dormitories, etc.)	○ Yes ○ No ○ Unknown		
Visit an area with large buildings (e.g., shopping centers, high-rise complexes, etc.) that may have a cooling tower(s)	○ Yes ○ No ○ Unknown		
Construction/remodeling near home or place visited	○ Yes ○ No ○ Unknown		
Work with water device/system maintenance (e.g., cooling towers, plumbing, hot tub)	○ Yes ○ No ○ Unknown		
Work in water-related leisure (e.g., hotels, cruise ships, water parks)	○ Yes ○ No ○ Unknown		
Industrial/manufacturing plant with a water spray cooling system or processes involving spraying water	○ Yes ○ No ○ Unknown		
Commercial or long haul truck driving	○ Yes ○ No ○ Unknown		
Work in commercial kitchen	○ Yes ○ No ○ Unknown		
Work in custodial services (e.g., housekeeping, janitorial)	○ Yes ○ No ○ Unknown		
Work in construction (e.g., spraying water, demolition, refurbishing)	○ Yes ○ No ○ Unknown		
Work at wastewater treatment plant	○ Yes ○ No ○ Unknown		
Work in another occupation involving water exposures: _____	○ Yes ○ No ○ Unknown		

30. In the 14 days before onset, did the patient use respiratory therapy equipment (e.g., nebulizer, CPAP, BIPAP) for treatment of sleep apnea, COPD, asthma, or any other reason?
○ Yes ○ No ○ Unknown

*If yes to respiratory therapy equipment, does this device use a humidifier?
○ Yes ○ No ○ Unknown

*If yes, what type of water is used in the device? *(check all that apply)*
☐ Sterile ☐ Bottled ☐ Other
☐ Distilled ☐ Tap ☐ Unknown

31. In the 14 days before onset, did the patient take a cruise? ◯ Yes ◯ No ◯ Unknown

If yes,

Name of cruise line: _____ Name of ship: _____

Cruise departure city: _____ Cruise departure state: _____

Cruise departure country: _____ Cruise departure date: _____

Cruise return city: _____ Cruise return state: _____

Cruise return country: _____ Cruise return date: _____ Cabin number: _____

Ports of call:

City	State	Country	Date

32. Did the patient have any underlying conditions or prior illnesses? ◯ Yes ◯ No ◯ Unknown

If yes, indicate whether the patient has each of the following underlying conditions

Condition	Patient History			Condition	Patient History		
AIDS	◯ Yes	◯ No	◯ Unknown	Kidney disease	◯ Yes	◯ No	◯ Unknown
Alcohol abuse (current/past)	◯ Yes	◯ No	◯ Unknown	Leukemia	◯ Yes	◯ No	◯ Unknown
Asthma	◯ Yes	◯ No	◯ Unknown	Multiple myeloma	◯ Yes	◯ No	◯ Unknown
Blood cancer	◯ Yes	◯ No	◯ Unknown	Multiple sclerosis	◯ Yes	◯ No	◯ Unknown
Bone marrow transplant	◯ Yes	◯ No	◯ Unknown	Myocardial infarction	◯ Yes	◯ No	◯ Unknown
Broken skin	◯ Yes	◯ No	◯ Unknown	Nephrotic syndrome	◯ Yes	◯ No	◯ Unknown
Cancer	◯ Yes	◯ No	◯ Unknown	Neuromuscular disorder	◯ Yes	◯ No	◯ Unknown
Cancer treatment	◯ Yes	◯ No	◯ Unknown	Obesity	◯ Yes	◯ No	◯ Unknown
Cerebrospinal fluid leak	◯ Yes	◯ No	◯ Unknown	Paralysis	◯ Yes	◯ No	◯ Unknown
Cerebrovascular accident	◯ Yes	◯ No	◯ Unknown	Parkinson's disease	◯ Yes	◯ No	◯ Unknown
Chronic respiratory disease	◯ Yes	◯ No	◯ Unknown	Peptic ulcer	◯ Yes	◯ No	◯ Unknown
Chronic hepatitis C	◯ Yes	◯ No	◯ Unknown	Peripheral neuropathy	◯ Yes	◯ No	◯ Unknown
Cirrhosis/liver failure	◯ Yes	◯ No	◯ Unknown	Peripheral vascular disease	◯ Yes	◯ No	◯ Unknown
Cochlear prosthesis	◯ Yes	◯ No	◯ Unknown	Premature birth	◯ Yes	◯ No	◯ Unknown
Complement deficiency disease	◯ Yes	◯ No	◯ Unknown	Renal failure/dialysis	◯ Yes	◯ No	◯ Unknown
Congestive heart failure	◯ Yes	◯ No	◯ Unknown	Seizure disorder	◯ Yes	◯ No	◯ Unknown
Connective tissue disorder	◯ Yes	◯ No	◯ Unknown	Sickle cell trait	◯ Yes	◯ No	◯ Unknown
Coronary arteriosclerosis	◯ Yes	◯ No	◯ Unknown	Smoker – current	◯ Yes	◯ No	◯ Unknown
Corticosteroids	◯ Yes	◯ No	◯ Unknown	Smoker – former	◯ Yes	◯ No	◯ Unknown
Current chronic dialysis	◯ Yes	◯ No	◯ Unknown	Solid organ malignancy	◯ Yes	◯ No	◯ Unknown
Deafness/profound hearing loss	◯ Yes	◯ No	◯ Unknown	Solid organ transplant	◯ Yes	◯ No	◯ Unknown
Dementia	◯ Yes	◯ No	◯ Unknown	Spleen missing	◯ Yes	◯ No	◯ Unknown
Diabetes mellitus	◯ Yes	◯ No	◯ Unknown	Splenectomy/asplenia	◯ Yes	◯ No	◯ Unknown
Emphysema/COPD	◯ Yes	◯ No	◯ Unknown	Systemic lupus erythematosus	◯ Yes	◯ No	◯ Unknown
HIV infection	◯ Yes	◯ No	◯ Unknown	Trouble swallowing (dysphagia)	◯ Yes	◯ No	◯ Unknown
Hodgkin's disease (clinical)	◯ Yes	◯ No	◯ Unknown	Other (specify):	◯ Yes	◯ No	◯ Unknown
Immunoglobulin deficiency	◯ Yes	◯ No	◯ Unknown				
Immunosuppressive therapy	◯ Yes	◯ No	◯ Unknown				
Intravenous drug user	◯ Yes	◯ No	◯ Unknown	Unknown	◯ Yes	◯ No	

33. Was the patient or proxy interviewed by public health?

◯ Yes ◯ No ◯ Unknown

Comments:

Interviewer's name: _____

Affiliation: _____ Phone: _____

State health dept. official who reviewed this report: _____

Title: _____ Phone: _____

Local Health Dept. please submit this document to:

State/DHD/SSS via your communicable disease clerk

State Health Dept. return completed form to:

travellegionella@cdc.gov
Respiratory Diseases Branch, MS H24-6
Office of Infectious Diseases
Center for Disease Control and Prevention and Control
1600 Clifton Rd. NE, Atlanta, GA 30329

Appendix (Additional Facilities)

(Additional accomodations – continued from page 1)

Name of accomodation 3:

Street address: Room number:

City: State: ZIP:

Country: Date of arrival: Date of departure:

Comments about travel:

Name of accomodation 4:

Street address: Room number:

City: State: ZIP:

Country: Date of arrival: Date of departure:

Comments about travel:

(Additional healthcare facilities – continued from page 2)

Name of healthcare facility 3:

Type of healthcare setting/facility:
- ◯ Hospital
- ◯ Long-term care
- ◯ Clinic
- ◯ Unknown
- ◯ Other, specify:

Type of exposure:
- ◯ Inpatient
- ◯ Outpatient
- ◯ Visitor or volunteer
- ◯ Employee
- ◯ Unknown
- ◯ Other, specify:

Is this facility also a transplant center?
- ◯ Yes
- ◯ No
- ◯ Unknown

Street address: City:

State: ZIP: Reason for visit:

Date of arrival: Date of departure: Did the healthcare facility have in place a water management program to reduce the risk of *Legionella* growth and spread? ◯ Yes ◯ No ◯ Unknown

Comments about healthcare setting:

(Additional assisted/senior living facilities – continued from page 2)

If yes, what type? ◯ Assisted living facility ◯ Senior living facility ◯ Unknown

Name of assisted/senior living facility 2:

Type of exposure: ◯ Resident ◯ Visitor or volunteer ◯ Employee ◯ Other, specify: ◯ Unknown

Street address:

City: State: ZIP:

Date of arrival: Date of departure: Did the assisted/senior living facility have in place a water management program to reduce the risk of *Legionella* growth and spread? ◯ Yes ◯ No ◯ Unknown

Comments about assisted or senior living facility:

Patient Response Script #1 - Mr. Theodore Q. Abernathy

This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to ensure all information is accurate and to provide the investigator with as much information as possible to assist in their investigation.

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say "I'm not sure" or "I don't know."*

Demographic Information

"Greetings! I am **Theodore Quentin Abernathy**, but you can call me **Captain Galaxy** if you prefer. I was born on... hmm... let's see... I think it was during the **Great Conjunction of 1965**, but my driver's license says **June 12th, 1970**. That makes me **54 years young**, give or take a solar flare. I'm a **male**, identify as **White**, and I'm **not Hispanic**, unless you count past lives. I reside at **42 Nebula Way** in **Kansas City**, Missouri, zip code **64108**. It's the house with the bright purple door—you can't miss it!"

Symptoms

"So, here's the thing—I started feeling a bit off **a couple of weeks ago**, or maybe it was **last month**? Time is a construct, you know? Anyway, I began experiencing these **feverish sensations**, like my body's internal thermostat was on the fritz. I thought maybe I was just absorbing too much cosmic energy.

Then, I started having this **aching in my muscles**, especially in my legs and arms. It felt like I'd been running a marathon on Jupiter! Breathing became a bit of a chore too—I was **short of breath**, even when just walking around the house. My neighbor said I looked pale, like a ghost! Can you imagine?

I also had some **chest discomfort**—not pain, exactly, but like an invisible elephant was sitting on me. Oh, and I had this **cough** that came and went, but nothing too dramatic. No sneezing or runny nose, though. The symptoms have been lingering for **a while now**. Maybe it's the universe telling me to slow down?"

Hospitalization

"I ended up going to the **hospital**—I think it was **St. Elsewhere Medical Center**, or was it **Sacred Heart Hospital**? Names are tricky! I was there for **a few days**, starting around **early November**. They poked and prodded me, took some blood, and hooked me up to machines that beeped incessantly. Quite the adventure!"

Travel History

"In the **two weeks before I got sick**, I was on a grand journey! I spent a few nights away from home, exploring the **hidden wonders of Missouri**. Stayed at this quaint little motel—**The Moonlight Inn**, I believe—somewhere near **Lake Ozark**. The address? Oh, I can't recall exactly, but it had a lovely view of the lake.

I arrived there on... let's see... must have been **around Halloween**, because the staff were all dressed up as ghouls and goblins. I stayed for **three nights**, communing with nature and stargazing. The mist over the lake in the mornings was otherworldly!"

Healthcare Visits

"Before I ended up in the hospital, I did visit a **wellness clinic**—the **Holistic Harmony Center**, run by a lovely lady named **Madame Luna**. It's more of a spiritual healing place than a medical facility, but they have the most amazing crystal therapy sessions! I was there for an afternoon, basking in the energies."

Possible Exposures

"In the **two weeks before I got sick**, I was indulging in all sorts of adventures. I took a **long soak in a hot tub** at the motel—bubbles everywhere! Also spent time near a **decorative fountain** in the town square—couldn't resist making a wish or two.

I attended a **public gathering**—a festival celebrating the alignment of the planets. There were **sprinklers** and **misters** set up to keep people cool—it was quite the shindig! I also visited a friend who lives in a **communal living facility**—we had tea and discussed the mysteries of the universe."

Respiratory Equipment

"Oh, and I sometimes use a **CPAP machine** at night—you know, for sleep apnea. It's got this humidifier thingy attached. I usually fill it with **tap water**, sometimes with a dash of essential oils for that aromatic touch. Is that important?"

Cruise Ship Travel

"I haven't been on a **cruise** recently, unless you count drifting off in my mind! Last time I was on a ship was years ago, sailing the astral seas!"

Underlying Conditions

"Well, health-wise, I'm as fit as a fiddle! Though I do have a touch of **asthma**, and sometimes my doctor says my **blood pressure** is a bit high—probably all that excitement! I used to smoke—quit **five years ago**, thank you very much. I enjoy the occasional glass of absinthe, but who doesn't?"

Laboratory Tests

"They did some tests at the hospital—took samples of my blood, maybe some other fluids too. Not sure what they found. They mentioned something about a **urinary antigen test**? Sounds fancy! I think they said it was **positive**, but I was a bit out of it with all the medications."

Outcome and Current Status

"I'm feeling much better now, though still a bit tired. The doctors said I had something called **Legionnaires' disease**—sounds like I should have a medal or something! They gave me some antibiotics—can't remember the name—and told me to rest. I've been spending my days meditating and aligning my chakras."

Additional Comments

"Is there anything else you need to know? Perhaps about my diet—I've been trying this new all-fruit regimen. Or my sleep patterns—been having the most vivid dreams! If you ask me, it's all connected to the cosmic vibrations. But I'll let you be the judge of that!"

Note to Self

- Remember to water the plants—they get thirsty too!
- Schedule a follow-up appointment with Dr. What's-His-Name.
- Refill prescription for those little pink pills.
- Stay away from mysterious mists and fountains for a while.
- Keep a dream journal—might unlock some secrets!

Please review this script to ensure all information is accurate. Providing detailed information will assist in the investigation

Patient Response Script #2 - Mr. William J. Thompson

This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to provide as much information as possible to assist in the investigation.

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say "I'm not sure" or "I don't know."*

Demographic Information

"Yeah, yeah, let's get this over with. My name is **William James Thompson**. Born on **March 5th, 1970**, which makes me **54 years old**. I'm a **male**, identify as **White**, and I'm **not Hispanic**. I live at **789 Cedar Lane** in **Kansas City**, Missouri, zip code **64111**. That's in the Midtown area, if it matters. My phone number? Fine, it's **(555) 987-6543**. Happy?"

Symptoms

"Alright, so about two weeks ago—around **November 1st** or maybe the **2nd**—I started feeling like absolute garbage. It began with a **high fever**—felt like I was burning up from the inside. Thought maybe I caught the flu or something. My whole body was **aching**, especially my muscles and joints. Couldn't get comfortable no matter what I did.

Then came the **headaches**—splitting headaches that wouldn't quit, even with painkillers. I was **exhausted all the time**, sleeping more than usual but never feeling rested. After a couple of days, I developed this **dry cough** that just wouldn't go away. Not producing anything, just hacking my lungs out.

Breathing became a real issue. I was **short of breath** doing simple things like walking to the kitchen or climbing the stairs. Felt like someone was squeezing my chest. I even got **chills** and was sweating through my clothes at night. It was miserable.

By **November 5th**, I couldn't take it anymore and decided to see a doctor. Not that I wanted to, but I felt like I was dying. Are we done with this part yet?"

Hospitalization

"Yeah, I was **hospitalized**. Went to **St. Mary's Medical Center** here in Kansas City on **November 5th**. Spent **five days** there—**November 5th to November 10th**. They ran a bunch of tests, hooked me up to IVs, gave me oxygen because I couldn't breathe right. They said I had **pneumonia** caused by something called **Legionnaires' disease**. Never heard of it before, and frankly, I wish I still hadn't."

Outcome and Current Status

"I'm back home now, but I'm still not 100%. The doctors gave me some antibiotics—**Levofloxacin**, I think it was called. Told me to rest and drink plenty of fluids. Easier said than done when you've got bills to pay. I'm still coughing, still feeling weak. Not sure when I'll be able to get back to work."

Occupation and Activities

"I work as a **construction supervisor** for **Midwest Builders Inc.** Been with them for over 20 years. We're currently working on a project downtown. My job involves a lot of physical activity, and being out like this is putting me behind. I haven't been able to work since I got sick.

We were working on the new high-rise building near the riverfront. Lots of dust and stuff, but nothing I haven't dealt with before. No one else at the site has reported being sick, at least not that I know of."

Travel History

"In the **14 days before I got sick**, I had to travel to **St. Louis** for a work conference. Stayed at the **Grand Riverside Hotel** from **October 28th to October 30th**. Room **112**, if you need that detail. The place was fancy enough—had a big lobby with a **decorative fountain** spraying water everywhere.

I used the **hotel's gym** a couple of times, and yeah, I took a dip in the **indoor pool** and **hot tub**. Figured it'd help relax my muscles after long meetings. Ate at the hotel restaurant, mostly kept to myself."

Healthcare Visits Before Onset

"Didn't visit any healthcare facilities before I got sick. Unless you count the quick stop at the **pharmacy** on **October 27th** to pick up my blood pressure meds. I take **Lisinopril** for hypertension. No hospitals or clinics besides that."

Possible Exposures

"In the **two weeks before all this**, besides the hotel amenities, I didn't do much out of the ordinary. At the hotel:

- **Used the hot tub and pool**.
- Spent time near that **fountain** in the lobby—had to walk by it every day.
- The conference had a couple of **buffet-style meals**—not sure if that matters.

Back home, I don't have any fancy water features or anything. My apartment building is pretty basic."

Respiratory Equipment

"Nope, don't use any respiratory equipment. Don't have sleep apnea or anything like that."

Cruise Ship Travel

"Never been on a cruise in my life. Don't plan to start now."

Underlying Health Conditions

"Look, I already mentioned I have **high blood pressure**—been dealing with that for years. I'm a **smoker**—been smoking about a pack a day for the last **30 years**. Yeah, I know it's bad for me. I've been trying to cut back, but stress doesn't help.

I've got **emphysema** or **COPD**, whatever they're calling it these days. Doctor keeps telling me to quit smoking and start exercising more. Easier said than done. No other health issues that I know of."

Laboratory Tests and Results

"At the hospital, they ran a bunch of tests:

- **Urinary antigen test** came back **positive** for **Legionella**.
- Did a **chest X-ray** and found **pneumonia** in both lungs.
- Took some blood tests—don't know all the results.
- They might have done a **sputum culture**, but I wasn't paying attention.

They pumped me full of antibiotics and sent me on my way after a few days."

In the 14 Days Before Onset

- **Shower away from home**: "Yes, at the hotel in St. Louis."
- **In or near a hot tub**: "Yes, used the hotel's hot tub."
- **Near a decorative water fountain**: "Yes, the hotel lobby had one."
- **Near a sprinkler or mister**: "Nope."
- **Attend a public gathering**: "Just the work conference."
- **Visit or live in a congregate living facility**: "No."

- **Visit an area with cooling towers**: "Not that I'm aware of."

Exposure to Aerosolized Water

"Didn't think about it until now, but at the construction site, we've got **power washers** and sometimes use **water sprays** to keep the dust down. But I've been doing that for years without any issues."

Contacts and Illness in Others

"I haven't heard of anyone else getting sick. None of my coworkers have mentioned feeling ill. At the conference, everyone seemed fine. But who knows? Maybe someone was walking around sick and didn't say anything."

Additional Comments

"Look, I don't know how I got this **Legionnaires' disease**, but it's been a real pain. If it came from that hotel, they should be held responsible. I can't afford to be off work like this. Is there some kind of investigation going on? Am I supposed to be doing something?

Also, the hospital bills are piling up. Insurance only covers so much. This whole situation is just one big headache."

Note to Self

- "Follow up with the doctor about my recovery plan."
- "Consider, once again, quitting smoking—yeah, easier said than done."
- "Check with work about sick leave and any benefits."
- "Avoid staying at that hotel again."
- "Keep an eye on any symptoms getting worse."

Please review this script to ensure all information is accurate. Providing detailed information will assist in the investigation.

Patient Response Script #3 - Ms. Amelia L. Hartman

This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to ensure all information is accurate and to provide the investigator with as much information as possible to assist in their investigation.

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say "I'm not sure" or "I don't know."*

Demographic Information

"Hello! My name is **Amelia Louise Hartman**. I was born on **September 22nd, 1980**, so that makes me **44 years old**. I'm a **female**, identify as **White**, and I'm **not Hispanic**. I live at **123 Meadowbrook Lane** in **Springfield**, Missouri, zip code **65804**. My phone number is **(555) 123-4567** if you need it. Oh, and just in case, my email is **amelia.hartman@example.com**."

Symptoms

"Well, where do I even begin? I've been feeling under the weather for quite some time now. I think it all started around **October 25th**, but it could have been earlier—it's hard to keep track with everything going on. I began experiencing a whole array of symptoms.

First, there was this **persistent headache** that just wouldn't go away, no matter how much water I drank or how many painkillers I took. Then I started feeling **fatigued**—not just tired, but utterly exhausted. Even simple tasks like getting the mail felt like climbing a mountain.

Around **October 28th**, I developed a **low-grade fever**—nothing too high, but enough to make me feel uncomfortable. I was also experiencing **muscle aches** and **joint pain**, especially in my knees and elbows. I thought maybe it was the flu or something similar.

But then things got worse. I started having **shortness of breath**, even when I was just sitting down. My chest felt tight, like someone was pressing down on it. I developed a **cough**, sometimes dry, other times with a bit of phlegm. I was also experiencing **night sweats**, waking up drenched, which was quite alarming.

I've also noticed some **dizziness**, especially when standing up quickly, and occasional **nausea**. My appetite has decreased significantly. I've been tracking my symptoms daily—here, I have a notebook where I've written everything down if you'd like to see it.

As of today, which is **November 11th**, I'm still experiencing these symptoms. It's been over **two weeks**, and I'm really worried it could be something serious. I've been researching online, and I think it could be a number of things—maybe Lyme disease, or perhaps chronic fatigue syndrome? I'm not ruling out anything at this point."

Hospitalization

"I haven't been **hospitalized** yet, but I've been to the **doctor's office** multiple times. My primary care physician is **Dr. Laura Stevens** at the **Springfield Health Clinic**. I've seen her on **October**

30th, **November 2nd**, and **November 7th**. She ran some tests, but so far nothing conclusive has come back. I'm considering checking myself into the hospital if things don't improve soon."

Occupation and Activities

"I work as a **freelance writer**, so I spend a lot of time at home. But I do like to get out and about when I can. I volunteer at the local **animal shelter** on **Mondays** and **Thursdays**, helping with the dogs and cats. I also attend a **yoga class** at the **community center** every **Tuesday evening**.

In the weeks before I got sick, I was quite active. I attended a **wellness retreat** in the **Ozark Mountains** from **October 20th to October 24th**. It was a lovely experience—lots of meditation, nature walks, and communal activities. There were about **50 people** there from all over the country."

Travel History

"In the **14 days before my symptoms started**, I did spend some nights away from home. As I mentioned, I was at the **wellness retreat** in the **Ozark Mountains**, staying at the **Whispering Pines Lodge**. The address? Oh, I believe it's **456 Forest Drive**, but I can double-check that for you.

I arrived on **October 20th** and departed on **October 24th**. My **room number** was **12B**. The lodge was cozy, with shared amenities like a **hot tub**, **sauna**, and **communal dining area**. I shared meals and activities with other guests."

Healthcare Visits Before Onset

"Other than my visits to **Dr. Stevens**, I didn't visit any healthcare facilities in the two weeks before I got sick. Unless you count the **herbal clinic** I stopped by on **October 26th**—**Green Leaf Wellness**. I picked up some natural supplements there, hoping they'd boost my immune system."

Possible Exposures

"In the **14 days before my symptoms started**, I was exposed to several potential sources:

- **Hot Tub**: At the retreat, I used the **hot tub** every evening. It was outdoors, surrounded by beautiful pine trees.
- **Sauna**: I also spent time in the **sauna**—great for detoxifying, or so they say.
- **Decorative Water Fountain**: There was a lovely **water fountain** in the lodge's lobby, creating a soothing ambiance.

- **Misters**: During the nature hikes, our guide used a **mister** to keep us cool—it sprayed a fine mist of water.
- **Sprinklers**: The lodge's lawn had automatic **sprinklers** that came on in the early morning and evening.
- **Public Gathering**: The retreat included a **group meditation session** in a large hall with all attendees.
- **Congregate Living Facility**: Well, the lodge was sort of like that, since we all stayed together and shared facilities.
- **Cooling Towers**: I don't recall seeing any, but there were some industrial-looking structures near the lodge.

At home, I sometimes use a **humidifier** in my bedroom to keep the air moist, especially since the weather has been dry."

Respiratory Equipment

"I don't typically use any respiratory therapy equipment. However, after my symptoms began, I borrowed a **nebulizer** from a friend on **November 5th** to see if it would help with my breathing. It does have a humidifier function. I used **distilled water** in it, but once or twice I might have used **tap water** when I ran out."

Cruise Ship Travel

"I haven't been on a **cruise** recently. The last cruise I took was years ago, to Alaska."

Underlying Conditions

"Well, I'm generally very health-conscious, but I do have some concerns:

- **Asthma**: I've had mild asthma since childhood.
- **Allergies**: I'm allergic to pollen, dust mites, and certain molds.
- **Anxiety**: I deal with anxiety and sometimes **panic attacks**.
- **Chronic Fatigue**: I suspect I might have chronic fatigue syndrome, given how tired I've been.
- **Hypochondria**: I tend to worry about my health a lot—probably why I'm here now!
- **Previous Infections**: I've had **Lyme disease** in the past, about five years ago.
- **Smoker**: I used to be a smoker but quit **ten years ago**.

I take **supplements** regularly—vitamins, herbal remedies, that sort of thing."

Laboratory Tests and Results

"Dr. Stevens ran several tests:

- **Blood tests**: To check for infections, vitamin deficiencies, thyroid function—results came back mostly normal, except for a slightly elevated white blood cell count.
- **Chest X-ray**: Done on **November 2nd**—showed some **inflammation in the lungs**.
- **Urinary Antigen Test**: She mentioned something about testing for **Legionella**—I believe it was a **urinary antigen test** done on **November 7th**. She said it came back **positive**.
- **Sputum Culture**: I provided a sputum sample, but I haven't heard back about the results yet.

I was surprised about the Legionella result—I thought that was rare. But then again, with all my symptoms, I suppose anything is possible."

Outcome and Current Status

"Currently, I'm taking **antibiotics**—I believe it's called **Levofloxacin**—prescribed by Dr. Stevens. I started the medication on **November 8th**. I've been told to rest and stay hydrated. Some symptoms have slightly improved, but I'm still feeling quite unwell.

I'm also continuing with my **supplements** and trying some **holistic remedies**, like herbal teas and aromatherapy. I'm willing to try anything at this point."

Contacts and Illness in Others

"I've been in contact with several people:

- **Fellow Retreat Attendees**: I've kept in touch with a few of them. One person mentioned feeling unwell after returning home.
- **Friends at the Animal Shelter**: So far, no one else has reported feeling sick.
- **Yoga Class Members**: I haven't heard of any illnesses, but I haven't attended class since getting sick.
- **Family Members**: My sister visited me on **October 31st**, and she's feeling fine.

Should I be informing them about my diagnosis? I'm worried I might have exposed others."

Additional Comments

"I'm really concerned about my health. I've been reading up on **Legionnaires' disease**, and it seems serious. Could I have contracted it from the **hot tub** or **sauna** at the retreat? Should the lodge be notified?

Also, is there anything else I should be doing to recover faster? Any specific precautions I should take to avoid spreading it to others?

I can't help but worry that this might be part of a larger health issue. I've been considering getting more comprehensive testing—maybe seeing a specialist in infectious diseases or autoimmune disorders.

I just want to get to the bottom of this and start feeling better."

Note to Self

- **Continue taking antibiotics** as prescribed—don't miss any doses.
- **Follow up with Dr. Stevens** about test results and next steps.
- **Inform the retreat organizers** about my illness—they should know in case others are affected.
- **Rest** as much as possible and maintain a **healthy diet**.
- **Avoid volunteering** at the animal shelter until I'm fully recovered.
- **Research Legionnaires' disease** to better understand it.
- **Consider seeing a specialist** for a second opinion.
- **Stay hydrated** and monitor symptoms closely.
- **Notify friends and family** to watch for any symptoms.

Please review this script to ensure all information is accurate. Providing detailed information will assist in the investigation.

Patient Response Script #4 - Mr. Walter E. Jenkins

This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to provide as much information as possible to assist in the investigation.

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say "I'm not sure" or "I don't know."*

Demographic Information

"Good day to you. My name is **Walter Eugene Jenkins**, though most folks just call me **Walt**. I was born on **January 15th, 1925**, which makes me **99 years old**. Imagine that—nearly a century! I'm a **male**, identify as **White**, and I'm **not Hispanic**. I live at **987 Elm Street** in the heart of **Independence**, Missouri, zip code **64050**. I've lived in this house for over **70 years**—raised my family here. If you need it, my phone number is **(555) 246-8100**. My hearing isn't what it used to be, so please speak up if you call."

Symptoms

"Well, let's see... It was around **October 28th** when I first noticed I wasn't feeling quite right. I woke up feeling unusually **tired**, more so than a man my age normally does. I figured it was just a bad night's sleep. But then I started having a **fever**—not too high, maybe around **100 degrees**, but enough to make me feel uncomfortable and a bit **chilled**.

A day or so later, I developed a **cough**. It started off as a **dry cough**, but soon I was coughing up some **phlegm**—yellowish in color, if I recall correctly. Breathing became more difficult; I was **short of breath** even when just sitting in my favorite armchair. Climbing the stairs to my bedroom was a real challenge—I had to stop halfway to catch my breath.

I also experienced some **chest pain**, especially when I coughed or took deep breaths. It felt like a tightness or pressure in my chest. My appetite decreased—I didn't feel like eating much, not even my favorite apple pie. I felt **weak** and **confused** at times; my granddaughter noticed I was a bit **forgetful** and sometimes **disoriented**. I had trouble remembering what day it was or whether I'd taken my medications.

As of today, **November 11th**, I'm still feeling some of these symptoms, though they have improved since I started treatment. The **cough** is less frequent, and my breathing is a bit easier, but I'm still more **tired** than usual."

Hospitalization

"Yes, I was **hospitalized**. My family grew concerned when my symptoms worsened, so they took me to **Independence Regional Hospital** on **October 31st**—Halloween, I remember, because the nurses were dressed in costumes. I was admitted and stayed there until **November 7th**. During my stay, they ran several tests—took blood samples, did chest X-rays, and monitored my vital signs closely.

They told me I had **pneumonia** caused by something called **Legionnaires' disease**. I'd never heard of it before. The doctors started me on intravenous **antibiotics** and gave me oxygen to help with my breathing. The staff were very kind and attentive, but I was glad to return home afterward."

Outcome and Current Status

"I'm back at home now, resting comfortably. The doctors prescribed an **antibiotic** called **Levofloxacin**, which I'm taking once daily. My granddaughter, **Susan**, moved in temporarily to help care for me—bless her heart. I'm still feeling **weak** and get **tired** easily, but my **cough** has lessened, and breathing is somewhat easier. I'm following the doctor's orders—taking my medications, drinking plenty of fluids, and getting as much rest as I can."

Occupation and Activities

"Well, I've been **retired** for many years now. I used to work as a **railroad engineer** with the **Missouri Pacific Railroad**—started back in the late 1940s after returning from World War II. Those were different times.

These days, I mostly stay at home, but I like to keep active in the community. I regularly attend activities at the **Golden Years Senior Center** on **Maple Street**. They have bingo nights on **Mondays**, which I never miss, and a knitting circle on **Wednesdays**—yes, I knit! It's relaxing.

In the **14 days before I got sick**, I spent some time at the **Golden Meadows Assisted Living Facility**. My granddaughter had to go out of town for a work conference, so I stayed there from **October 24th** to **October 30th**. It's located at **456 Sunrise Avenue**, here in **Independence**. The staff there are friendly, and they offer various activities to keep us engaged."

Travel History

"I haven't traveled far from home in many years—it's hard at my age. The only time I was away recently was during my stay at **Golden Meadows**. I stayed in **Room 12**, a cozy little room on the second floor with a view of the garden.

They have some nice amenities there:

- A **heated indoor pool**: I didn't swim, but I often sat nearby while others enjoyed it.
- A **jacuzzi/hot tub**: Again, I didn't use it myself.
- A beautiful **courtyard** with a **decorative fountain**: I spent a lot of time sitting by that fountain, reading or just enjoying the fresh air.
- **Group activities**: I participated in a few, like the **painting class** on **October 26th** and a **music therapy session** on **October 28th**.

I didn't leave the facility during my stay, so all my activities were on-site."

Healthcare Visits Before Onset

"Aside from my hospitalization, I had a **routine check-up** with my primary care physician, **Dr. Samuel Thompson**, on **October 22nd** at the **Independence Clinic**. Everything seemed fine at that time—blood pressure was a bit high, but that's normal for me.

I also visited the **dentist**, **Dr. Linda Nguyen**, on **October 20th** for a regular cleaning. Her office is located on **Pine Street** in **Independence**. No other healthcare visits that I can recall."

Possible Exposures

"In the **14 days before I got sick**, I might have been exposed to several things:

- **Shower Away from Home**: Used the shower in my room at **Golden Meadows** daily.
- **Decorative Water Fountain**: Spent several hours near the fountain in the courtyard, almost every afternoon.
- **Sprinklers**: Walked through the garden when the sprinklers were on—didn't think much of it.
- **Indoor Pool Area**: While I didn't swim, I sat near the pool to watch others and enjoy the warmth.
- **Humidifiers**: I believe there was a humidifier in my room at Golden Meadows—I'm not entirely sure.
- **Group Activities**: Participated in activities with other residents, including those who might have been ill.

At home, I use a **humidifier** in my bedroom, especially during the dry winter months. I usually fill it with **tap water**, as I've always done."

Respiratory Equipment

"Yes, I use a **CPAP machine** at night for my **sleep apnea**. It has a humidifier attachment to keep the air moist. As with the humidifier, I fill it with **tap water**—I wasn't aware that I should use anything else. I've been using this machine for about **five years** now without any issues."

Cruise Ship Travel

"No, I haven't been on a cruise in many, many years. The last one was a river cruise with my late wife back in the **1980s**."

Underlying Conditions

"At my age, I've got a list of health issues:

- **Chronic Obstructive Pulmonary Disease (COPD)**: I've had breathing problems for years, partly due to my years of smoking when I was younger.
- **Congestive Heart Failure**: Diagnosed about **ten years ago**.
- **Type 2 Diabetes**: Been managing it with medication and diet for over **15 years**.
- **Hypertension (High Blood Pressure)**: A long-standing issue.
- **Chronic Kidney Disease**: My kidneys aren't as efficient as they used to be.
- **Sleep Apnea**: Hence the CPAP machine.
- **Arthritis**: Particularly in my knees and hands.

I take several medications daily, including **Lisinopril** for blood pressure, **Metformin** for diabetes, **Furosemide** for heart failure, and a few others. I keep a list if you need specifics."

Laboratory Tests and Results

"While I was in the hospital, the doctors performed several tests:

- **Chest X-ray**: Showed that I had **pneumonia** in both lungs.
- **Urinary Antigen Test for Legionella**: They said it came back **positive**, confirming **Legionnaires' disease**.
- **Blood Tests**: Showed elevated white blood cell count—indicative of an infection.
- **Sputum Culture**: I'm not sure of the results; they didn't mention it.
- **Electrocardiogram (EKG)**: To check my heart due to chest pain—results were normal for me.

They monitored my oxygen levels continuously and provided supplemental oxygen as needed."

Contacts and Illness in Others

"I'm not aware of anyone else being sick. During my stay at **Golden Meadows**, the staff and other residents seemed well. My granddaughter, **Susan**, is healthy—she's been a tremendous help.

I did notice that one of the other residents, **Mr. Albert**, had a bit of a cough, but at our age, that's not uncommon. I haven't heard of any outbreaks or other illnesses at the facility."

Additional Comments

"I'm quite concerned about how I contracted this **Legionnaires' disease**. I understand it's linked to water systems sometimes. Perhaps the **assisted living facility** should be notified so they can check their water sources—the fountains, showers, and humidifiers.

Is there anything else I should be doing to aid my recovery? Any precautions I need to take at home to prevent spreading this to my granddaughter or others? Should I be using different water in my CPAP machine?

Also, I wonder if other residents at Golden Meadows might be at risk. Is there someone who can reach out to them?"

Note to Self

- **Continue taking antibiotics** exactly as prescribed—don't miss any doses.
- **Rest** as much as possible; avoid overexertion.
- **Stay hydrated**—drink plenty of water and herbal teas.
- **Follow up with Dr. Thompson** on **November 15th** for a check-up.
- Ask **Susan** to **contact Golden Meadows** about my diagnosis so they can take necessary precautions.
- Consider using **distilled water** in my **CPAP machine** and **humidifier**.
- Avoid attending activities at the **senior center** until fully recovered.
- Ensure all **household surfaces** are kept clean—ask Susan for help with this.
- Keep a **daily log** of symptoms to monitor progress.
- Discuss with Dr. Thompson about any additional **vaccinations** or preventive measures.

Please review this script to ensure all information is accurate. Providing detailed information will assist in the investigation.

Patient Response Script #5 - Mr. Billy Ray Johnson

This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to provide as much information as possible to assist in the investigation.

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say "I'm not sure" or "I don't know."*

Demographic Information

"Well, howdy! My name is **Billy Ray Johnson**, but folks around here just call me **Billy Ray**. I was born on **May 10th, 1965**, so I reckon that makes me **59 years old**. I'm a **male**, identify as **White**, and I'm **not Hispanic** or anything like that. I live out on **Route 2, Box 45** in **Hickory Hollow**, Missouri, zip code **65432**. It's a small place, but it's home. If you need to reach me, my phone number is **(555) 765-4321**. Though I gotta warn you, reception's a bit spotty out here."

Symptoms

"Alrighty then, let's see... It was about **two weeks ago**, maybe around **October 29th**, when I started feeling a mite poorly. Woke up that morning feeling more tired than a hound dog after a long hunt. I had a bit of a **fever**, nothing too high—maybe around **100 degrees**—but enough to make me sweat and shiver some.

Then, I started having this pesky **cough**. At first, I thought it was just some dust from the barn, but it kept getting worse. It was a **dry cough** at the start, but after a day or so, I started coughing up some **phlegm**, kinda yellowish. Breathing got to be a chore; I'd get **short of breath** just walking out to the mailbox. Felt like there was an ol' mule sitting on my chest.

My wife, **Mary Lou**, noticed I was looking a bit pale and wasn't eating much. I felt **weak** as a newborn calf and even had some **aches and pains** in my muscles and joints. I also had some **chills** and would sweat through my shirt at night—soaking the sheets, you know?

As of today, which I believe is **November 11th**, I'm still not feeling quite myself. The **cough** is lingering, and I get winded pretty easy. But I reckon I'm on the mend compared to how I was feeling a few days back."

Hospitalization

"Yes sir, I was **hospitalized**. Mary Lou insisted on taking me to the **Ozark General Hospital** over in **Willow Springs** on **November 2nd**. Stayed there until **November 7th**. They ran all sorts of tests—drew blood, took X-rays, the whole nine yards. Doctor told me I had **pneumonia** caused by something called **Legionnaires' disease**. Never heard of it before, but it sure knocked me down a peg."

Outcome and Current Status

"I'm back home now, thank the Lord. They sent me home with some **antibiotics**—I think it's called **Levofloxacin** or something like that. Been taking it once a day like they told me. Still feeling a bit **weak**, and the **cough** ain't gone completely, but I'm better than I was. Mary Lou's been taking good care of me—making sure I eat and rest."

Occupation and Activities

"Well, I'm a **farmer** by trade. Been working this land since I was a boy—grew up right here in **Hickory Hollow**. We got about **50 acres**, mostly corn and soybeans, and a few cattle. It's hard work, but it's honest.

In the **14 days before I got sick**, I was busy with the harvest—it's that time of year, you know. Had to get the crops in before the weather turned. Also, we had the annual **Hickory Hollow Fall Fair** on **October 25th**. I was helping set up booths and ran the **barbecue pit** during the fair. Lots of folks from around the county came by.

I don't usually leave town much, but on **October 27th**, I went to **Big Springs** to pick up some supplies at the **feed store** and stopped by the **farmers' co-op** meeting."

Travel History

"Like I said, I ain't much for traveling, but in the **14 days before I got sick**, I did spend a night away from home. On **October 26th**, I stayed at my cousin **Jim Bob's** place over in **Pine Ridge**—had a bit too much to drink at his birthday shindig, so I slept on his couch. Can't recall the exact address, but it's the old farmhouse off **County Road 12**.

Also, during the **Fall Fair**, I was around a lot of people—shaking hands, sharing food, and whatnot."

Healthcare Visits Before Onset

"Don't think I visited any doctors or hospitals before I got sick. Wait, actually, I did go to the **Urgent Care Clinic** in **Willow Springs** on **October 20th** 'cause I cut my hand fixing the tractor. Got a few stitches and a tetanus shot. Other than that, nothing."

Possible Exposures

"In the **14 days before I got sick**, here's what I can recall:

- **Shower Away from Home**: Used the shower at **Jim Bob's** place on **October 27th**.
- **Hot Tub or Pool**: Don't have one, but at the **Fall Fair**, they had a makeshift **dunking booth** that some folks were using. I got dunked a couple of times—part of the fun.
- **Decorative Water Fountain**: There's a small **fountain** in the town square where the fair was held. Kids were playing around it.
- **Sprinklers**: Had the **irrigation system** running in the fields—been using it more than usual due to the dry spell.
- **Misters**: At the fair, they set up some **misters** to keep folks cool near the main stage.

- **Public Gathering**: The **Hickory Hollow Fall Fair** is a big event around here.
- **Cooling Towers**: Don't think we have any of those around here.

At home, we use **well water** for everything—drinking, bathing, you name it."

Respiratory Equipment

"I don't use any fancy breathing equipment usually, but after I got out of the hospital, they gave me a **nebulizer** to use at home. Said it might help with my breathing. Been using it a couple of times a day with some kind of medicine. I fill it with **distilled water** like they told me."

Cruise Ship Travel

"Never been on a cruise in my life. Closest I've come to that is fishing on the lake."

Underlying Conditions

"Well, I'm not as spry as I used to be. Here's what I got:

- **High Blood Pressure**: Been taking **Lisinopril** for a few years.
- **Type 2 Diabetes**: Manage it with diet mostly, and take **Metformin**.
- **Smoker**: Used to smoke a pack a day, but I quit about **five years ago**.
- **Arthritis**: Especially in my knees and hands—makes the farm work tougher.
- **Overweight**: I guess you could say I'm carrying a few extra pounds.

Other than that, just the usual aches and pains of getting older."

Laboratory Tests and Results

"At the hospital, they did all sorts of tests:

- **Chest X-ray**: Showed I had **pneumonia**.
- **Urinary Antigen Test**: Came back **positive for Legionella**—that's how they figured out it was **Legionnaires' disease**.
- **Blood Tests**: Showed I had an infection.
- **Sputum Culture**: They took a sample when I coughed something up—not sure what the results were.
- **EKG**: Checked my heart—said it was okay for the most part.

They had me on oxygen for a bit, too."

Contacts and Illness in Others

"Now that you mention it, a couple of folks around town have been feeling under the weather. My neighbor, **Earl**, mentioned he had a bad cough when I saw him at the feed store. Also heard that some kids got sick after the fair—maybe just a coincidence.

Mary Lou hasn't been sick, thank goodness. She's tougher than a two-dollar steak."

Additional Comments

"I'm mighty curious how I ended up with this **Legionnaires' disease**. Could it have come from the **dunking booth** at the fair or maybe our **well water**? Should I be worried about other folks in town? Don't want anyone else getting sick on account of me.

Is there anything else I should be doing to get better faster? Any precautions I need to take around the farm or with Mary Lou?"

Note to Self

- **Keep taking antibiotics** as prescribed—don't skip any doses.
- **Rest up**—let Mary Lou and the boys handle the heavy lifting for now.
- **Stay hydrated**—drink plenty of water and maybe some of Mary Lou's sweet tea.
- **Follow up with the doctor** on **November 15th**—got an appointment scheduled.
- **Check the well water**—maybe get it tested for any contaminants.
- **Inform the town council** about my illness—just in case it's something others need to know.
- **Avoid strenuous activities** until I'm fully recovered.
- **Use the nebulizer** as directed to help with breathing.
- **Keep an eye on Mary Lou** and others for any symptoms.

Please review this script to ensure all information is accurate. Providing detailed information will assist in the investigation.

Patient Response Script #6 - Mr. Reginald P. Worthington III

This script is intended to help you recall and communicate important details about your recent illness to the investigator. Please review it carefully to provide as much information as possible to assist in the investigation.

*Please note: Important information is **bolded**. If you do not have an answer to a question, simply say "I'm not sure" or "I don't know."*

Demographic Information

"Good day. My name is **Reginald Percival Worthington III**. I was born on **December 12th, 1970**, making me **54 years old**. I am **male**, identify as **White**, and I am **not Hispanic**. I reside at **1 Worthington Manor**, located on **Grand Estates Drive** in **Kansas City**, Missouri, zip code **64113**. If you require it, my personal assistant can provide my phone number, but I assure you, I prefer to keep such matters confidential."

Symptoms

"Approximately **ten days ago**, around **November 1st**, I began experiencing some rather unpleasant symptoms. Initially, I felt a **slight fever**, which I dismissed as a trivial matter. However, over the next few days, I developed a persistent **cough**—quite bothersome, really. It wasn't severe at first, but it progressively worsened.

By **November 3rd**, the cough intensified, and I began feeling **short of breath**, even during minimal exertion. I also experienced **muscle aches** and a general sense of **fatigue**, which is quite unusual for someone of my vitality. There were moments when I felt **chills**, followed by periods of excessive **sweating**—quite uncomfortable, I assure you.

On **November 5th**, I noticed some **chest pain** when coughing or taking deep breaths. At this point, I decided it was prudent to consult my personal physician. As of today, **November 11th**, some symptoms persist, though they have slightly improved with treatment."

Hospitalization

"Yes, I was **hospitalized**, albeit reluctantly. I was admitted to **St. Michael's Private Hospital** on **November 6th** and remained there until **November 9th**. They insisted on running a series of tests, and I was placed in a private suite, of course. The medical staff was adequate, though I did expect a higher standard of care."

Outcome and Current Status

"I am currently recuperating at home under the care of my private medical team. I was diagnosed with **Legionnaires' disease**, which I understand is a form of pneumonia caused by **Legionella bacteria**. I have been prescribed **antibiotics**, specifically **Levofloxacin**, which I am taking as directed. While not yet at full strength, I am confident I will make a swift recovery."

Occupation and Activities

"I am the **Chief Executive Officer** of **Worthington Industries**, a multinational conglomerate with interests in various sectors, including finance, real estate, and energy. My schedule is quite demanding, involving numerous meetings, both domestic and international.

In the **14 days before my symptoms began**, I attended several high-profile events:

- On **October 28th**, I hosted a charity gala at the **Worthington Grand Hotel** in downtown Kansas City.
- From **October 30th to November 1st**, I attended an exclusive business retreat at the **Silver Springs Resort**, a luxury facility located in the mountains of Colorado.

My activities involve interacting with influential individuals and attending events at prestigious venues."

Travel History

"In the **14 days prior to my illness**, I traveled extensively:

- **October 30th to November 1st**: Stayed at the **Silver Springs Resort** in Colorado. I occupied the **Presidential Suite**. The resort's address is **1000 Silver Springs Drive**, Silver Springs, Colorado, zip code **80498**.
    - I arrived on **October 30th** and departed on **November 1st**.
    - The resort features numerous amenities, including a **luxury spa**, **indoor heated pool**, **hot tubs**, and a **golf course**.
- During my stay, I utilized several of these amenities:
    - **Spa Facilities**: Received massages and used the **steam room**.
    - **Hot Tub**: Spent time in the private **VIP hot tub** area.
    - **Indoor Pool**: Swam laps each morning.
- I also attended business meetings in various conference rooms within the resort.

Additionally, I traveled via my private jet, but I doubt that is relevant."

Healthcare Visits Before Onset

"I did not visit any healthcare facilities prior to my hospitalization, aside from a routine check-up with my personal physician, **Dr. Alexander Harrington**, on **October 25th** at his private practice."

Possible Exposures

"In the **14 days before my illness**, potential exposures may include:

- **Hot Tub Use**: As mentioned, I utilized the **VIP hot tub** at the resort.
- **Steam Room and Sauna**: Spent considerable time in these facilities at the resort's spa.
- **Indoor Pool**: Swam daily during my stay.
- **Decorative Fountains**: The resort features several indoor and outdoor **water features**.
- **Shower Away from Home**: Used the facilities in my suite at the resort.
- **Air Travel**: Though I use a private jet, the **aircraft** does have a **humidification system**.

I did not attend any public gatherings beyond the business retreat, which was an exclusive event."

Respiratory Equipment

"I do not typically use respiratory therapy equipment. However, during my hospitalization, I was provided with supplemental oxygen."

Cruise Ship Travel

"No, I have not taken a cruise recently. The last was a Mediterranean voyage aboard a private yacht several years ago."

Underlying Conditions

"Generally, I am in excellent health. I adhere to a strict fitness regimen and diet. However, for completeness:

- **High Blood Pressure**: Managed with medication—**Amlodipine**.
- **Allergies**: Mild seasonal allergies.
- **Stress**: Occupational hazard, I suppose.

I do not smoke, and I consume alcohol only socially."

Laboratory Tests and Results

"During my hospitalization, the following tests were conducted:

- **Chest X-ray**: Indicated **pneumonia**.
- **Urinary Antigen Test** for Legionella: Resulted **positive**, confirming **Legionnaires' disease**.
- **Blood Tests**: Showed elevated white blood cell count.
- **Sputum Culture**: Collected but results were pending upon my discharge.
- **Nucleic Acid Assay (PCR)**: I believe this was performed, though I would need to consult my medical records for specifics.

All tests were handled by the hospital's laboratory."

Contacts and Illness in Others

"To my knowledge, none of my associates or staff have reported similar symptoms. Given the exclusivity of the events I attend, I would expect any such issues to be promptly addressed. However, I have instructed my personal assistant to discreetly inquire among attendees of the business retreat."

Additional Comments

"I find it rather disconcerting that I contracted **Legionnaires' disease**, especially given the caliber of establishments I frequent. I trust that the **Silver Springs Resort** maintains the highest standards, but perhaps this warrants further investigation.

I expect this matter to be handled with discretion. My time is valuable, and I have significant responsibilities that require my attention. Please ensure that any necessary inquiries are conducted efficiently.

Is there anything further you require from me?"

Note to Self

- **Continue taking antibiotics** as prescribed.
- **Limit physical exertion** until fully recovered.
- Instruct staff to **maintain highest hygiene standards** within my residence and offices.
- Have personal physician **review all medical records** for any additional insights.
- Consider **legal consultation** regarding potential negligence by the resort.
- Schedule a thorough **inspection of my private jet's** environmental systems.
- Ensure my **return to work** is managed to minimize any disruption to operations.

Please review this script to ensure all information is accurate. Providing detailed information will assist in the investigation.